

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

Form 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2021

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission File No. 1-11442

CHART INDUSTRIES, INC.

(Exact name of registrant as specified in its charter)

Delaware
State or other jurisdiction of
incorporation or organization

34-1712937
(I.R.S. Employer
Identification No.)

2200 Airport Industrial Drive, Suite 100, Ball Ground, Georgia 30107
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: **(770) 721-8800**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.01	GTLS	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by checkmark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

The aggregate market value of the voting common equity held by non-affiliates computed by reference to the price of \$146.32 per share at which the common equity was last sold, as of the last business day of the registrant's most recently completed second fiscal quarter, was \$5,301,451,462.

As of February 21, 2022, there were 36,598,259 outstanding shares of the Company's common stock, par value \$0.01 per share.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the following document are incorporated by reference into Part III of this Annual Report on Form 10-K: the definitive Proxy Statement to be used in connection with the Registrant's Annual Meeting of Stockholders to be held on May 12, 2022 (the "2022 Proxy Statement").

Except as otherwise stated, the information contained in this Annual Report on Form 10-K is as of December 31, 2021.

CHART INDUSTRIES, INC.

TABLE OF CONTENTS

	Page
<u>PART I</u>	
<u>Item 1. Business</u>	<u>3</u>
<u>Item 1A. Risk Factors</u>	<u>10</u>
<u>Item 1B. Unresolved Staff Comments</u>	<u>21</u>
<u>Item 2. Properties</u>	<u>21</u>
<u>Item 3. Legal Proceedings</u>	<u>22</u>
<u>Item 4. Mine Safety Disclosures</u>	<u>23</u>
<u>Item 4A. Executive Officers of the Registrant</u>	<u>24</u>
<u>PART II</u>	
<u>Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	<u>25</u>
<u>Item 6. [Reserved]</u>	<u>26</u>
<u>Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations</u>	<u>27</u>
<u>Item 7A. Quantitative and Qualitative Disclosures About Market Risk</u>	<u>49</u>
<u>Item 8. Financial Statements and Supplementary Data</u>	<u>50</u>
<u>Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure</u>	<u>50</u>
<u>Item 9A. Controls and Procedures</u>	<u>50</u>
<u>Item 9B. Other Information</u>	<u>51</u>
<u>PART III</u>	
<u>Item 10. Directors, Executive Officers and Corporate Governance</u>	<u>52</u>
<u>Item 11. Executive Compensation</u>	<u>53</u>
<u>Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	<u>53</u>
<u>Item 13. Certain Relationships and Related Transactions, and Director Independence</u>	<u>53</u>
<u>Item 14. Principal Accounting Fees and Services</u>	<u>53</u>
<u>PART IV</u>	
<u>Item 15. Exhibits, Financial Statement Schedules</u>	<u>54</u>
<u>Item 16. Form 10–K Summary</u>	<u>54</u>
<u>SIGNATURES</u>	<u>55</u>
<u>INDEX TO FINANCIAL STATEMENTS</u>	<u>56</u>
<u>REPORTS OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM</u>	<u>F-1</u>
<u>SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS</u>	<u>F-60</u>
<u>INDEX TO EXHIBITS</u>	<u>E-1</u>

PART I

Item 1. *Business*

THE COMPANY

Overview

Chart Industries, Inc., a Delaware corporation incorporated in 1992 (the “Company,” “Chart,” “we,” “us,” or “our” as used herein refers to Chart Industries, Inc. and our consolidated subsidiaries, unless the context indicates otherwise), is a leading global manufacturer of highly engineered cryogenic equipment servicing multiple market applications in the industrial gas and clean energy industries. Our unique product portfolio is used in every phase of the liquid gas supply chain including upfront engineering, service and repair. Being at the forefront of the clean energy transition, Chart is a leading provider of technology, equipment and services related to liquefied natural gas, hydrogen, biogas, CO2 Capture and water treatment, among other applications. We are committed to excellence in environmental, social and corporate governance (ESG) issues both for our company as well as our customers. With over 25 global manufacturing locations including in the United States, Europe, China, India, Australia and South America, we maintain accountability and transparency to our team members, suppliers, customers and communities.

Our primary customers are large, multinational producers and distributors of hydrocarbon and industrial gases and their end-users. We sell our products and services to more than 2,500 customers worldwide, having developed long-standing relationships with leading companies in the gas production, distribution and processing industries as well as those involved in liquefied natural gas (LNG), chemicals and industrial gasses. Our well-established relationships extend to truck manufacturers in addition to those in other clean energy industries such as biofuels, hydrogen and CO2 capture. Our customers include: Chick-fil-A, Linde, Air Liquide, IVECO, Air Products, Shell, Chevron, ExxonMobil, New Fortress Energy, Samsung, Plug Power, United Launch Alliance, and Blue Origin, some of whom have been purchasing our products for over 30 years.

We have achieved this competitive position by capitalizing on our technical expertise, broad product and service offering, reputation for a high quality global manufacturing footprint, and by focusing on attractive, growth markets. We have an established sales and customer support presence across the globe with manufacturing operations in the United States, Europe, China and India. For the years ended December 31, 2021, 2020 and 2019, we generated sales of \$1,317.7 million, \$1,177.1 million, and \$1,215.5 million, respectively.

On October 1, 2020, we closed on the sale of our cryobiological products business to Cryoport, Inc. (NASDAQ: CYRX) (the “Cryobiological Divestiture”), which is reflected in our disclosure in “Item 1. Business.” Financial information is presented on a continuing operations basis.

Segments, Applications and Products

Our reportable segments, which are also our operating segments, are as follows: Cryo Tank Solutions, Heat Transfer Systems, Specialty Products and Repair Service & Leasing. Prior to October 1, 2020, our reportable segments, which were also our operating segments, were as follows: Distribution and Storage Eastern Hemisphere (“D&S East”), Distribution and Storage Western Hemisphere (“D&S West”), Energy & Chemicals (“E&C”) Cryogenics and E&C FinFans.

Our Cryo Tank Solutions segment, which has principal operations in the United States, Europe and Asia, serves geographic regions around the globe, supplying bulk, microbulk and mobile equipment used in the storage, distribution, vaporization, and application of industrial gases and certain hydrocarbons. Our Heat Transfer Systems segment, with principal operations in the United States and Europe, also serves geographic regions globally, supplying mission critical engineered equipment and systems used in the separation, liquefaction, and purification of hydrocarbon and industrial gases that span gas-to-liquid applications. Operating globally, our Specialty Products segment supplies products used in specialty end-market applications including hydrogen, LNG, biofuels, CO2 Capture, food and beverage, aerospace, lasers, cannabis and water treatment, among others. Our Repair, Service & Leasing segment provides installation, service, repair, maintenance, and refurbishment of cryogenic products globally in addition to providing equipment leasing solutions. All prior period amounts presented have been reclassified based on our current reportable segments.

Further information about these segments is located in Note 4, “Segment and Geographic Information,” of our consolidated financial statements included under Item 15, “Exhibits and Financial Statement Schedules” of this Annual Report on Form 10-K.

Cryo Tank Solutions

Cryo Tank Solutions (34% of consolidated sales for the year ended December 31, 2021) designs and manufactures cryogenic solutions for the storage and delivery of cryogenic liquids used in industrial gas and LNG applications. With operations in the United States, Latin America, Europe and Asia, our Cryo Tank Solutions segment serves customers globally.

Industrial Gas Applications

We design and manufacture bulk and packaged gas cryogenic solutions for the storage, distribution, vaporization, and application of industrial gases. Our products span the entire spectrum of industrial gas demand from small customers requiring cryogenic packaged gases to large users requiring custom engineered cryogenic storage systems in both mobile and stationary applications. Using sophisticated vacuum insulation technology, our cryogenic storage systems are able to store and transport liquefied industrial gases and hydrocarbon gases at temperatures from 0° Fahrenheit to temperatures nearing absolute zero. Industrial gas applications include any end-use of the major elements of air (nitrogen, oxygen, and argon), including manufacturing, welding, electronics and medical. Principal customers for industrial applications are global industrial gas producers and distributors. Other end-users of our equipment include chemical producers, manufacturers of electrical components, health care organizations and companies in the oil and natural gas industries.

Demand for industrial gas applications is driven primarily by the significant installed base of users of cryogenic liquids, as well as new applications and distribution technologies for cryogenic liquids. Our competitors tend to be regionally focused while we supply a broad range of systems on a worldwide basis. We also compete with several suppliers owned by the global industrial gas producers. From a technology perspective, we compete with compressed gas alternatives or on-site generated gas supply.

LNG Applications

We supply cryogenic solutions for the storage, distribution, regasification, and use of LNG. LNG may be utilized as an alternative to other fossil fuels such as diesel, propane, or fuel oil in transportation or off pipeline applications. Examples include heavy duty truck and transit bus transportation, locomotive propulsion, marine, and power generation in remote areas. We refer to our LNG distribution products as a “Virtual Pipeline,” as the traditional natural gas pipeline is replaced with cryogenic distribution to deliver the gas to the end-user. We supply cryogenic trailers, ISO containers, bulk storage tanks, loading facilities, and regasification equipment specially configured for delivering LNG into Virtual Pipeline applications. We sell LNG applications around the world from various Eastern and Western Hemisphere facilities to numerous end-users, energy companies, and gas distributors. Additionally, we supply large vacuum insulated storage tanks as equipment for purchasers of standard liquefaction plants sold by our Heat Transfer Systems segment.

Demand for LNG applications is driven by diesel displacement initiatives, environmental and energy security considerations, and the associated cost of equipment. Our competitors tend to be regionally focused or product-specific, while we supply a broad range of solutions required by LNG applications.

Heat Transfer Systems

Heat Transfer Systems (20% of consolidated sales for the year ended December 31, 2021) facilitates major natural gas, petrochemical processing, petroleum refining, power generation and industrial gas companies in the production or processing of their products. With primary manufacturing capabilities in the U.S. and Europe, Heat Transfer Systems serves customers globally. This segment supplies mission critical engineered equipment and technology-driven process systems used in the separation, liquefaction, and purification of hydrocarbon and industrial gases that span most gas-to-liquid applications.

Natural Gas Processing (including Petrochemical) Applications

We provide natural gas processing solutions that facilitate the progressive cooling and liquefaction of hydrocarbon mixtures for the subsequent recovery or purification of component gases. Primary products used in these applications include brazed aluminum heat exchangers, cold boxes, pressure vessels, Core-in-Kettle® and air cooled heat exchangers. Our brazed aluminum heat exchangers allow producers to obtain purified hydrocarbon by-products, such as methane, ethane, propane, and ethylene, which are commercially marketable for various industrial or residential uses. Our cold boxes are highly engineered systems that incorporate brazed aluminum heat exchangers, pressure vessels, and interconnecting piping used to significantly reduce the temperature of gas mixtures to liquefy component gases so that they can be separated and purified for further use in multiple energy, industrial, scientific, and commercial applications. Chart’s air cooled heat exchangers are used to cool or condense fluids to allow for further processing and for cooling gas compression equipment. Our process technology includes standard and modular plant solutions and comprises detailed mechanical design, Chart manufactured proprietary equipment and all other plant items required to liquefy pipeline quality natural gas. Customers for our natural gas processing applications

include large companies in the hydrocarbon processing industry, as well as engineering, procurement and construction (“EPC”) contractors.

Demand for these applications is primarily driven by the growth in the natural gas liquids (or NGLs) separation and other natural gas segments of the hydrocarbon processing industries, including LNG. In the future, management believes that continuing efforts by petroleum producing countries to better utilize stranded natural gas and associated gases which historically had been flared, present a promising source of demand. We have several competitors for our heat exchangers and fans, including certain leading companies in the industrial gas and hydrocarbon processing industries as well as many smaller fabrication-only facilities around the world. Competition with respect to our more specialized brazed aluminum heat exchangers includes a small number of global (European and Asian) manufacturers.

LNG Applications

We provide process technology, liquefaction train, and independent mission critical equipment for the liquefaction of natural gas (LNG), including small to mid-scale facilities, floating LNG applications, and large base-load export facilities. We are a leading supplier to EPC firms where we provide equipment and process technology, providing an integrated and optimized approach to the project. These “Concept-to-Reality” process systems incorporate many of Chart’s core products, including brazed aluminum heat exchangers, Core-in-Kettle® heat exchangers, cold boxes, air cooled heat exchangers, pressure vessels, and pipe work. These systems are used in global LNG projects, for both local LNG production as well as LNG export terminals. Our proprietary IPSMR® (Integrated Pre-cooled Single Mixed Refrigerant) and IPSMR+® liquefaction process technology offers lower capital expenditure requirements than competing processes measured on a per ton of LNG produced basis, along with very competitive operating costs.

Demand for LNG applications is primarily driven by increased use and global trade in natural gas (transported as LNG) since natural gas offers significant cost and environmental advantages over other fossil fuels. Demand for LNG for fuel applications is also driven by diesel displacement and continuing efforts by petroleum producing countries to better utilize stranded natural gas and previously flared gases. We have several competitors for these applications, including leading industrial gas companies, other brazed aluminum heat exchanger manufacturers, and other equipment fabricators to whom we also act as a supplier of equipment, including heat exchangers and cold boxes.

HVAC, Power and Refining Applications

Our air cooled heat exchangers and axial cooling fans are used in HVAC, power and refining applications. Demand for HVAC is driven by growing construction activities and demand for energy efficient devices, and there is also positive impact from growing industrial production. Refining demand continues to be driven by United States shale production, benefiting from low cost shale oil and gas resulting in high utilization and increased investment. Our air cooled heat exchangers are used in each phase of the refining process to condense and cool fluids. Worldwide power use is projected to grow 50% through 2050. This growth is focused in regions where strong economic growth is driving demand, particularly in Asia.

Specialty Products

Specialty Products (33% of consolidated sales for the year ended December 31, 2021) supplies highly-engineered equipment used in specialty end-market applications for hydrogen, LNG, biofuels, CO2 Capture, food and beverage, aerospace, lasers, cannabis and water treatment, among others. Leveraging our global manufacturing presence Specialty Products serves customers globally. During 2021 and 2020, we made a number of acquisitions to capitalize on clean power, clean industrials, clean water and clean food, beverages and agriculture market opportunities within this segment. These include the acquisitions of BlueInGreen, LLC, Sustainable Energy Solutions, Inc., Cryogenic Gas Technologies, Inc., L.A. Turbine, AdEdge Holdings, LLC and Earthly Labs Inc.

We supply a wide range of solutions used in the production, storage, distribution and end-use of hydrogen while also providing highly-specialized mobility and transportation equipment for use with both hydrogen and LNG, including onboard vehicle tanks and fueling stations. More specifically, our horizontal LNG vehicle tanks are widely used onboard heavy-duty trucks and buses while our recently-released liquid hydrogen vehicle tank enjoys many of the same characteristics. Chart also manufactures specialized cryogenic railcars used to transport not only LNG, but a number of other gaseous and liquid molecules. Additionally, we design and manufacture nitrogen dosing products and other equipment used in packaging as well as the food and beverage industry. These applications include processing, preservation and beverage carbonation.

Our water treatment technology is also offered through the Specialty Products segment. Serving both municipal and industrial end markets globally, our water treatment process technology utilizes Chart’s cryogenic storage and vaporization equipment to efficiently deliver dissolved oxygen, CO2 and ozone into water. Our technology is used for oxygenation, pH adjustment, oxidation and odor control with modular and mobile solution options. Additional water treatment capabilities

include but are not limited to adsorption, filtration, ion exchange, reverse osmosis and flow reversal processes, to name a few. Our expanded solution set effectively addresses a wide range of organic and inorganic contaminants including arsenic and per- and polyfluorinated alkylated substances (PFAS), often referred to as “forever chemicals.” Other equipment and technology offered through Specialty Products have applications in CO2 Capture, space and cannabis industries. We also offer cryogenic components, including turboexpanders, vacuum insulated pipe (“VIP”), specialty liquid nitrogen, or LN2, end-use equipment and cryogenic flow meters.

We design and manufacture solutions for the liquefaction, storage, distribution, regasification and use of hydrogen. There are a number of commercial uses for hydrogen including traditional applications in the chemical, refining and space industries. More recently, hydrogen is increasingly being used as an alternative fuel for the power transportation sectors, with both onshore and marine applications. Given the global movement towards a lower carbon footprint, there are also a number of other potential uses for hydrogen on the horizon including power generation. To help enable this transition, we supply ISO containers and transport trailers for both gaseous and liquid hydrogen, in addition to fuel stations and other fueling solutions. We also manufacture various types of heat exchangers for hydrogen applications including brazed aluminum, air-cooled and shell & tube varieties.

Demand for many of our specialty applications including hydrogen is primarily driven by the global, public and private sector movement towards a lower-carbon footprint, reduced greenhouse gas emissions and overall sustainability trends. These efforts are being guided not only by government policies and related global climate goals, but also by social and environmental actions by various stakeholders. Management believes hydrogen in particular will play an ever-increasing role in the energy transition, given its zero emission characteristics and naturally abundant supply. Similarly, management believes other equipment offered by Chart’s Specialty Products segment will be required to achieve global greenhouse gas reduction targets and other environmental-related goals, including our carbon capture and biofuel technology, water treatment offerings and specialty packaging equipment. Demand for LNG is also likely to continue benefiting from the ongoing energy transition given its environmental advantages over other fossil fuels. While we have competitors in a portion of these applications, many of our specialty product markets have limited competition.

Repair, Service & Leasing

Our Repair, Service & Leasing segment (13% of consolidated sales for the year ended December 31, 2021) provides installation, service, repair, maintenance, and refurbishment of our products globally in addition to providing equipment leasing solutions. With operations in the United States, Latin America, Europe and Asia, our Repair, Service & Leasing segment serves customers globally.

To support the products and solutions we sell, our Repair, Service & Leasing segment offers services through the entire lifecycle of our products, which is unique and unparalleled in the markets we serve. Our focus is to build relationships with plant stakeholders, from process and mechanical engineers to operations and maintenance personnel, focusing on the optimized performance and lifespan of Chart proprietary equipment. Aftermarket services include extended warranties, plant start-up, parts, 24/7 support, monitoring and process optimization, as well as repair, maintenance, and upgrades. We perform plant services on equipment, including brazed aluminum heat exchangers, cold boxes, etc.

We also install, service, maintain and refurbish bulk and packaged gas cryogenic solutions for the storage, distribution, vaporization, and application of industrial gases. With multiple service locations in the Americas, Europe and Asia, we not only service Chart products, we also service numerous other manufacturers including many of our competitors. We provide services for storage vessels, VIP, reconfiguration, relocation, trailers, ISO containers, vaporizers, and other gas to liquid equipment.

Additionally, we offer a variety of leasing options on certain types of Chart equipment, providing our customers with the flexibility to quickly respond to seasonal or sudden increases in demand with similar flexibility when existing equipment is being repaired or refurbished. We offer short and long-term operating leases as well as lease to own options with up to a ten-year term. Typical equipment we offer with leasing options are standard trailers, including bulk and micro bulk storage systems, vaporizers and delivery tankers. Chart also offers Treatment-as-a-Service options for water treatment customers in addition to remote monitoring services.

Demand for services provided by this segment is being driven by our substantial existing and growing install base, exceptional reputation for high-quality service, breadth of services offered and expanded geographic footprint. Additionally, this segment is benefiting from new long-term agreements being executed that incorporate parts, repair and aftermarket service components not included in prior agreements. Our competitors tend to be regionally focused while we supply a broader array of services on a worldwide basis.

Engineering and Product Development

Our engineering and product development activities are focused primarily on developing new and improved solutions and equipment for the users of cryogenic liquids, hydrocarbons and industrial gases across all industries served. Our engineering, technical, and marketing employees actively assist customers in specifying their needs and in determining appropriate products to meet those needs. Portions of our engineering expenditures typically are charged to customers, either as separate items or as components of product cost.

Competition

We believe we can compete effectively around the world and that we are a leading competitor in the industries we serve. Competition is based primarily on performance and the ability to provide the design, engineering, and manufacturing capabilities required in a timely and cost-efficient manner. Contracts are usually awarded on a competitive bid basis. Quality, technical expertise, and timeliness of delivery are the principal competitive factors within the industries we serve. Price and terms of sale are also important competitive factors. Although we believe we rank among the leaders in each of the markets we serve and because our equipment is specialized and independent third-party prepared market share data is not available, it is difficult to know for certain our exact position in our markets. We base our statements about industry and market positions on our reviews of annual reports and published investor presentations of our competitors and augment this data with information received by marketing consultants conducting competition interviews and our sales force and field contacts. For information concerning competition within a specific segment of our business, see the descriptions provided under segment captions in this Annual Report on Form 10-K.

Marketing

We market our products and services in each of our segments throughout the world primarily through direct sales personnel and independent sales representatives as well as distributors. The technical and custom design nature of our products requires a professional, highly trained sales force. We use independent sales representatives and distributors to market our products and services in certain foreign countries and in certain North American regions. These independent sales representatives supplement our direct sales force in dealing with language and cultural matters. Our domestic and foreign independent sales representatives earn commissions on sales, which vary by product type.

Backlog

For information about our backlog, including backlog by business segment, see Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Customers

We sell our products primarily to gas producers, distributors, and end-users across energy, industrial, power, HVAC and refining applications in countries throughout the world. Sales to our top ten customers accounted for 39%, 42%, and 34% of consolidated sales in 2021, 2020 and 2019, respectively.

Our sales to particular customers fluctuate from period to period, but the global producers and distributors of hydrocarbon and industrial gases as well as their suppliers tend to be a consistently large source of revenue for us. Our supply contracts are generally contracts for “requirements” only. While our customers may be obligated to purchase a certain percentage of their supplies from us, there are generally no minimum requirements. Also, many of our contracts may be canceled at any time, subject to possible cancellation charges. To minimize credit risk from trade receivables, we review the financial condition of potential customers in relation to established credit requirements before sales credit is extended and we monitor the financial condition of customers to help ensure timely collections and to minimize losses. In addition, for certain domestic and foreign customers, we require advance payments, letters of credit, bankers’ acceptances, and other such guarantees of payment. Certain customers also require us to issue letters of credit or performance bonds, particularly in instances where advance payments are involved, as a condition to placing the order. We believe our relationships with our customers are generally good.

Intellectual Property

Although we have a number of patents, trademarks, and licenses related to our business, no one of them or related group of them is considered by us to be of such importance that its expiration or termination would have a material adverse effect on our business. In general, we depend upon technological capabilities, manufacturing quality control, and application of know-how, rather than patents or other proprietary rights, in the conduct of our business.

Raw Materials and Suppliers

We manufacture most of the products we sell. The raw materials used in manufacturing include aluminum products (including sheets, bars, plate, and piping), stainless steel products (including sheets, plates, heads, and piping), palladium oxide, carbon steel products (including sheets, plates, and heads), valves and gauges, and fabricated metal components. Most raw materials are available from multiple sources of supply, although shortages and delays to certain materials have been experienced during the past year, as a result of market disruptions caused by the Covid-19 pandemic. We have long-term relationships with our raw material suppliers and other vendors. Commodity components of our raw material (aluminum, stainless steel and carbon steel) could experience additional levels of volatility during 2022 and may have a relational impact on raw material pricing. Subject to certain short-term risks related to our suppliers as discussed under Item 1A. "Risk Factors," we foresee no acute shortages of any raw materials that would have a material adverse effect on our operations.

Human Capital Resources

As of January 31, 2022, we had 4,771 employees, including 2,388 domestic employees and 2,383 international employees.

We are party to one collective bargaining agreement with the International Association of Machinists and Aerospace Workers ("IAM") covering 219 employees at our La Crosse, Wisconsin heat exchanger facility. Effective February 8, 2021, we entered into a five-year agreement with the IAM which expires on February 8, 2026.

Chart is committed to attracting and retaining the best talent. Therefore, investing, developing, and maintaining human capital is critical to our success. As a global manufacturing company, a meaningful number of our employees are engineers or trained trade or technical workers focusing on advanced manufacturing. Chart prioritizes several measures and objectives in managing its human capital assets, including, among others, employee safety and wellness, talent acquisition and retention, employee engagement, development, and training, diversity and inclusion, and compensation and pay equity. In 2021, we did not experience any employee-generated work stoppages or disruptions, and we consider our employee relations to be satisfactory.

Our key human capital measures include employee safety, turnover, absenteeism and production. We frequently benchmark our compensation practices and benefits programs against those of comparable industries and in the geographic areas where our facilities are located. We believe that our compensation and employee benefits are competitive and allow us to attract and retain skilled and unskilled labor throughout our organization. Our notable health, welfare and retirement benefits include company-subsidized health insurance, 401(k) plan with company matching contributions, tuition assistance program and paid time off.

Covid-19 and Employee Safety and Wellness

During the coronavirus (Covid-19) pandemic, the safety and well-being of our employees and their families has been a top priority as we continue to serve our customers, many of which are directly involved in essential manufacturing and critical medical care. Our global pandemic efforts include leveraging the advice and recommendations of infectious disease experts and recognized organizations to establish appropriate safety standards and secure appropriate levels of personal protective equipment for our workforce. Based upon these recommendations, we have adopted and implemented a Covid-19 Response Plan to outline our company policies and procedures designed to mitigate the potential for transmission of Covid-19 and its variants and prevent exposure to illness from certain other infectious diseases. These protocols, which remain in place, meet or exceed the Centers for Disease Control guidelines and where applicable, state and local government mandates. Our employees were trained on these protocols and on an ongoing basis, receive regular updates as rules and guidelines evolve.

Among other things, Chart's Covid-19 Response Plan details employee, manager, and company responsibilities related to house-keeping and sanitization, hygiene and respiratory etiquette, use of personal protective equipment, employee and visitor screening procedures, leave policies and accommodations, travel guidelines, remote working opportunities and infrastructure, and protocols for not reporting to work and/or when to return to work upon potential and/or confirmed Covid-19 exposure or infection. In addition to procuring and maintaining personal protective equipment, screening stations and other preventative resources, we also leveraged our technology and human capital to accommodate the heightened level of demand for critical care equipment required by customers around the world to fight Covid-19.

Chart has ongoing communications about safety performance at all levels of the organization. Our Global Safety Council meets monthly to discuss accidents, injuries, near misses, trends and lessons learned. Council members present metrics and other safety information at every executive staff and Board of Directors meeting. The cross-functional Global Safety Council is dedicated to reaching our target of zero accidents. All Chart employees have Stop Work Authority and are expected to use it if there is concern that any task or procedure could be unsafe. Each site recognizes and rewards employees based on local

objectives such as achieving safety performance milestones and completing regular audits. All Chart sites implement our Occupational Health and Safety Program Requirements for training, reporting, accident investigation, auditing, implementation, and compliance. The policy encourages employee involvement, a crucial element of a successful safety program, by requiring each site to create a safety committee and safety suggestion program.

Employee Engagement, Development and Training

Chart strives to recruit, hire, develop and promote a diverse workforce. It is our goal to provide each employee a challenging and rewarding experience that allows for personal and professional development. We encourage and support the growth and development of our employees and, wherever possible, seek to fill positions by promotion and transfer from within the organization. We advance continual learning and career development through ongoing performance and development conversations or evaluations with employees, internally and externally developed training programs, and educational reimbursement programs. In connection with the latter, reimbursement is available to employees enrolled in pre-approved degree or certification programs at accredited institutions that teach skills or knowledge relative to our business or otherwise to the development of the employee's skill set or knowledge base. In addition, we routinely invest in seminar, conference and other training or continuing education events for our employees. We believe education empowers our people to identify and adopt best practices that will enhance our sustainability. Our university relations program includes recruitment, co-operative programs and internships. To train a local workforce, our manufacturing facilities forge relationships with community colleges and trade schools and pay their employees based on the job and level of skill.

Other examples of Chart employee development programs include our Emerging Leaders program, Emerging Welders program, an Engineering Rotational program, an Engineering Fellows and Key Experts program, in addition to the aforementioned Global Safety Council. Chart's Emerging Leaders accelerated development program assigns immersive, high-impact projects to high-potential employees across the organization to prepare them for advancement to executive roles. Engineering Fellows are long-tenured employees who are recognized externally and internally as having contributed to our success in unique ways while our Key Experts are widely recognized within Chart for their engineering expertise and contributions to the field. Together, Fellows and Key Experts manage the rotational engineering program to mentor and develop our early-career engineers.

We strive to maintain an inclusive environment free from discrimination of any kind, including sexual or other discriminatory harassment. All employees are expected to put into practice our Code of Ethics, related policies, laws, rules and regulations in all countries where we operate. In addition, employees have a duty to report violations and have multiple avenues available through which inappropriate behavior can be reported, such as supervisors, managers, ethics representatives or the confidential, anonymous Chart Ethics Hotline. Designated ethics representatives are always available for employees who have questions or need guidance on compliance. All reports of inappropriate behavior are promptly investigated with appropriate action taken to stop such behavior. Chart investigates alleged incidents and communicates the resolution to the person who reported it. We prohibit retaliation and threats of retaliation against anyone who reports a possible violation or misconduct in good faith and protect employees with our Whistleblower Policy. Chart has partnered with Historically Black Colleges and Universities (HBCUs) to drive a more diverse and inclusive workforce. Our Chief Executive Officer and President, Jillian Evanko, has also signed the CEO Action for Diversity & Inclusion™ pledge, and our Global Diversity & Inclusion Committee is working with our 4,771 team members to ensure all of our key themes and priorities work seamlessly together in our culture for the best employee experience.

Environmental Matters

Our operations have historically included and currently include the handling and use of hazardous and other regulated substances, such as various cleaning fluids used to remove grease from metal, that are subject to federal, state, local, and foreign environmental laws and regulations. These regulations impose limitations on the discharge of pollutants into the soil, air, and water and establish standards for their handling, management, use, storage, and disposal. We monitor and review our procedures and policies for compliance with environmental laws and regulations. Our management is familiar with these regulations and supports an ongoing program to maintain our adherence to required standards.

We are involved with environmental compliance, investigation, monitoring, and remediation activities at certain of our owned or formerly owned manufacturing facilities and at one owned facility that is leased to a third party. We believe that we are currently in substantial compliance with all known environmental regulations. We accrue for certain environmental remediation-related activities for which commitments or remediation plans have been developed or for which costs can be reasonably estimated. These estimates are determined based upon currently available facts regarding each facility. Actual costs incurred may vary from these estimates due to the inherent uncertainties involved. Future expenditures relating to these environmental remediation efforts are expected to be made over the coming years as ongoing costs of remediation programs. We do not believe that these regulatory requirements have had a material effect upon our capital expenditures, earnings, or

competitive position. We are not anticipating any material capital expenditures in 2022 that are directly related to regulatory compliance matters. Although we believe we have adequately provided for the cost of all known environmental conditions, additional contamination, the outcome of disputed matters, or changes in regulatory posture could result in more costly remediation measures than budgeted, or those we believe are adequate or required by existing law. We believe that any additional liability in excess of amounts accrued which may result from the resolution of such matters will not have a material adverse effect on our financial position, liquidity, cash flows, or results of operations.

Available Information

Additional information about the Company is available at www.chartindustries.com. On the Investor Relations page of the website, the public may obtain free copies of our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable following the time that they are filed with, or furnished to, the Securities and Exchange Commission (“SEC”). Additionally, we have posted our Code of Ethical Business Conduct and Officer Code of Ethics on our website, which are also available free of charge to any shareholder interested in obtaining a copy. References to our website do not constitute incorporation by reference of the information contained on such website, and such information is not part of this Form 10-K.

Item 1A. Risk Factors

Investing in our common stock involves risk. You should carefully consider the risks described below, as well as the other information contained in this Annual Report on Form 10-K in evaluating your investment in us. If any of the following risks actually occur, our business, financial condition, operating results, or cash flows could be harmed materially. Additional risks, uncertainties, and other factors that are not currently known to us or that we believe are not currently material may also adversely affect our business, financial condition, operating results or cash flows. In any of these cases, you may lose all or part of your investment in us.

Risks Related to Our Business

The markets we serve are subject to cyclical demand and vulnerable to economic downturn, which could harm our business and make it difficult to project long-term performance.

Demand for our products depends in large part upon the level of capital and maintenance expenditures by many of our customers and end-users, in particular those customers in the global hydrocarbon and industrial gas markets. These customers’ expenditures historically have been cyclical in nature and vulnerable to economic downturns. Decreased capital and maintenance spending by these customers could have a material adverse effect on the demand for our products and our business, financial condition, and results of operations. In addition, this historically cyclical demand limits our ability to make accurate long-term predictions about the performance of our company. Even if demand improves, it is difficult to predict whether any improvement represents a long-term improving trend or the extent or timing of improvement. There can be no assurance that historically improving cycles are representative of actual future demand.

The loss of, or significant reduction or delay in, purchases by our largest customers could reduce our sales and profitability.

While we sell to more than 2,000 customers, sales to our top ten customers accounted for 39%, 42%, and 34% of consolidated sales in 2021, 2020 and 2019, respectively. We expect that a similar number of customers will continue to represent a substantial portion of our sales for the foreseeable future. While our sales to particular customers fluctuate from period to period, the global producers and distributors of hydrocarbon and industrial gases and their suppliers tend to be a consistently large source of our sales.

The loss of any of our major customers, consolidation of our customers, or a decrease or delay in orders or anticipated spending by such customers could materially reduce our sales and profitability. Although order activity in 2021 increased year over year, we continued to experience energy price volatility and our customers’ adjusted project timing. Delays in the anticipated timing of LNG infrastructure build out could materially reduce the demand for our products. Our largest customers could also engage in business combinations, which could increase their size, reduce their demand for our products as they recognize synergies or rationalize assets and increase or decrease the portion of our total sales concentration to any single customer. For example, four of our largest customers have combined in recent years, with Airgas and Air Liquide combining in 2016 and Praxair and Linde combining in 2018. Further industry consolidation could further exacerbate our customer concentration risk.

We may fail to successfully integrate companies that provide complementary products or technologies.

An important component of our recent business strategy has been the acquisition of businesses that complement our existing products and services. Such a strategy involves the potential risks inherent in assessing the value, strengths, weaknesses, contingent or other liabilities, and potential profitability of acquisition candidates and in integrating the operations of acquired companies. In addition, any acquisitions of businesses with foreign operations or sales may increase our exposure to risks inherent in doing business outside the United States.

As part of this acquisition strategy, we have closed on several acquisitions in the past three years including acquisitions in new clean energy markets, such as hydrogen, water, carbon and direct air capture. These high growth markets represent new businesses that are complementary to our existing LNG and gas technologies. The failure to achieve the anticipated synergies of our recent significant acquisitions or recognize the anticipated market opportunities or integration from our new clean energy acquisitions, could have a material adverse effect on our business, financial condition and results of operations.

From time to time, we may have acquisition discussions with other potential target companies both domestically and internationally. If a large acquisition opportunity arises and we proceed, a substantial portion of our cash and surplus borrowing capacity could be used for the acquisition or we may seek additional debt or equity financing.

Potential acquisition opportunities become available to us from time to time, and we periodically engage in discussions or negotiations relating to potential acquisitions, including acquisitions that may be material in size or scope to our business. Any acquisition may or may not occur and, if an acquisition does occur, it may not be successful in enhancing our business for one or more of the following reasons:

- Any business acquired may not be integrated successfully and may not prove profitable;
- The price we pay for any business acquired may overstate the value of that business or otherwise be too high;
- Liabilities we take on through the acquisition may prove to be higher than we expected;
- We may fail to achieve acquisition synergies; and/or
- The focus on the integration of operations of acquired entities may divert management's attention from the day-to-day operation of our businesses.

Inherent in any future acquisition is the risk of transitioning company cultures and facilities. The failure to efficiently and effectively achieve such transitions could increase our costs and decrease our profitability.

If we are unable to successfully control our costs and efficiently manage our operations, it may place a significant strain on our management and administrative resources and lead to increased costs and reduced profitability.

We have implemented cost savings initiatives to align our business with current and expected economic conditions. Our ability to operate our business successfully and implement our strategies depends, in part, on our ability to allocate our resources optimally in each of our facilities in order to maintain efficient operations. Ineffective management could cause manufacturing inefficiencies, increase our operating costs, place significant strain on our management and administrative resources, and prevent us from being able to take advantage of opportunities as economic conditions improve. If we are unable to align our cost structure in response to prevailing economic conditions on a timely basis, or if implementation or failure to implement any cost structure adjustments has an adverse impact on our business or prospects, then our financial condition, results of operations, and cash flows may be negatively affected.

Similarly, it is critical that we appropriately manage our planned capital expenditures in this uncertain economic environment. For example, we have invested or plan to invest approximately \$50 to \$55 million in new capital expenditures in 2022. If we fail to manage the projects related to these capital expenditures in an effective manner, we may lose the opportunity to obtain some new customer orders or the ability to operate our businesses efficiently. Even if we effectively implement these projects, the orders needed to support the capital expenditure may not be obtained, may be delayed, or may be less than expected, which may result in sales or profitability at lower levels than anticipated.

Our results of operations could materially suffer if we are unable to obtain sufficient pricing for our products and services to meet our profitability expectations.

If we are unable to obtain favorable pricing for our products and services in a timely manner, our revenues and profitability could materially suffer. For example, current conditions in our supply chain have resulted in rapid increases in the prices for the raw materials we use. Furthermore, the prices we are able to charge for our products and services are affected by a number of other factors, including:

- general economic and political conditions;
- our customers' desire to reduce their costs;

- the competitive environment;
- our ability to accurately estimate our costs, including our ability to estimate the impact of inflation on our costs over long-term contracts; and
- the procurement practices of our customers.

Our inability to pass increased prices along to our customers in a timely manner could have a material adverse effect on our business, financial condition or results of operations.

We depend on the availability of certain key suppliers; if we experience difficulty with a supplier, we may have difficulty finding alternative sources of supply.

The cost, quality, and availability of raw materials, certain specialty metals and specialized components used to manufacture our products are critical to our success. The materials and components we use to manufacture our products are sometimes custom made and may be available only from a few suppliers, and the lead times required to obtain these materials and components can often be significant. We rely on sole suppliers or a limited number of suppliers for some of these materials, including special grades of aluminum used in our brazed aluminum heat exchangers and compressors included in some of our product offerings. While we have not historically encountered problems with availability, and our global sourcing team has mitigated these risks by increasing inventory for some of these materials, this does not mean that we will continue to have timely access to adequate supplies of essential materials and components in the future or that supplies of these materials and components will be available on satisfactory terms when needed. If our vendors for these materials and components are unable to meet our requirements, fail to make shipments in a timely manner, or ship defective materials or components, we could experience a shortage or delay in supply or fail to meet our contractual requirements, which would adversely affect our results of operations and negatively impact our cash flow and profitability.

We carry goodwill and indefinite-lived intangible assets on our balance sheet, which are subject to impairment testing and could subject us to significant non-cash charges to earnings in the future if impairment occurs.

As of December 31, 2021, we had goodwill and indefinite-lived intangible assets of \$1,149.2 million, which represented approximately 37.8% of our total assets. Goodwill and indefinite-lived intangible assets are not amortized but are tested for impairment annually in the fourth quarter or more often if events or changes in circumstances indicate a potential impairment may exist. Factors that could indicate that our goodwill or indefinite-lived intangible assets are impaired include a decline in our stock price and market capitalization, lower than projected operating results and cash flows, and slower growth rates in our industry. Our stock price historically has shown volatility and often fluctuates significantly in response to market and other factors. Declines in our stock price, lower operating results and any decline in industry conditions in the future could increase the risk of impairment. Impairment testing incorporates our estimates of future operating results and cash flows, estimates of allocations of certain assets and cash flows among reporting segments, estimates of future growth rates, and our judgment regarding the applicable discount rates used on estimated operating results and cash flows. As a result of the above analyses, we recorded an impairment charge related to indefinite-lived intangible assets of \$16.0 million during the fourth quarter of 2020. If we determine at a future time that further impairment exists, it may result in a significant non-cash charge to earnings and lower stockholders' equity.

The Covid-19 pandemic may disrupt our operations and could adversely affect our business in the future.

While the Covid-19 pandemic has not had a material impact on our business or operations to date, the pandemic could have a negative effect on our business, results of operations, cash flows and financial condition in the future. The Covid-19 pandemic may affect our business, including as a result of temporary facility closures, work-from-home orders and policies, absenteeism in our facilities, inability to efficiently transport our goods, social distancing and other health and safety protocols and reduced customer demand. We have experienced temporary facility closures in response to government mandates and for the safety of our employees due to positive diagnoses for Covid-19 in certain facilities. Any future temporary facility closures could impact our productivity and hamper the implementation of our ongoing operational improvement efforts. We have implemented work-from-home policies for many employees. The effects of these work-from-home policies could be negative and could impact productivity, research and development efforts, our ongoing operational improvement efforts, internal control over financial reporting, record keeping and access to books and records, and could lead to increased cyber security or data privacy risks. We do not yet know when these work-from-home policies will change or how they may develop. The Covid-19 pandemic could impact the timing of our operational improvement efforts by limiting our ability to implement planned improvements at several of our facilities. The Covid-19 pandemic could adversely impact our ability to secure materials for our products or supplies for our facilities or to provide personal protective equipment for our employees, any of which could adversely affect our operations. Even after the Covid-19 pandemic subsides, there may be long-term effects on our business practices and customers in economies in which we operate that could severely disrupt our operations and could have a material adverse effect on our business, results of operations, cash flows and financial condition. Any or all of these risks could be

increased or intensified if there is a resurgence of the Covid-19 virus and its variants after the initial outbreaks subside. As we cannot predict the duration, scope or severity of the Covid-19 pandemic, which continues to develop and change rapidly, the negative financial impact to our results cannot be reasonably estimated, but could be material.

Our backlog is subject to modification, termination or reduction of orders, which could negatively impact our sales.

Our backlog is comprised of the portion of firm signed purchase orders or other written contractual commitments received from customers that we have not recognized as sales. The dollar amount of backlog as of December 31, 2021 was \$1,190.1 million. Our backlog can be significantly affected by the timing of orders for large projects, and the amount of our backlog at December 31, 2021 is not necessarily indicative of future backlog levels or the rate at which backlog will be recognized as sales. Although modifications and terminations of our orders may be partially offset by cancellation fees, customers can, and sometimes do, terminate or modify these orders. We cannot predict whether cancellations will accelerate or diminish in the future. Cancellations of purchase orders, indications that the customers will not perform or reductions of product quantities in existing contracts could substantially and materially reduce our backlog and, consequently, our future sales. Our failure to replace canceled orders could negatively impact our sales and results of operations. We did not have any significant cancellations in 2021, 2020 and 2019.

Due to the nature of our business and products, we may be liable for damages based on product liability and warranty claims.

Due to the high pressures and low temperatures at which many of our products are used, the inherent risks associated with concentrated industrial and hydrocarbon gases, and the fact that some of our products are relied upon by our customers or end users in their facilities or operations or are manufactured for relatively broad industrial, transportation, or consumer use, we face an inherent risk of exposure to claims (which we have been subject to from time to time and some of which were substantial including the cryobiological storage tank lawsuits filed in 2018 as discussed in Item 3. “Legal Proceedings” relating to our since divested Cryobiological business, but for which we retained certain potential liabilities) in the event that the failure, use, or misuse of our products results, or is alleged to result, in death, bodily injury, property damage, or economic loss. We believe that we meet or exceed existing professional specification standards recognized or required in the industries in which we operate. Although we currently maintain product liability coverage, which we believe is adequate for existing product liability claims and for the continued operation of our business, it includes customary exclusions and conditions, it may not cover certain specialized applications such as aerospace-related applications, and it generally does not cover warranty claims. Additionally, such insurance may become difficult to obtain or be unobtainable in the future on terms acceptable to us. A successful product liability claim or series of claims against us, including one or more consumer claims purporting to constitute class actions or claims resulting from extraordinary loss events, in excess of or outside our insurance coverage, or a significant warranty claim or series of claims against us, could materially decrease our liquidity, impair our financial condition, and adversely affect our results of operations.

Governmental energy policies could change or expected changes could fail to materialize which could adversely affect our business or prospects.

Energy policy can develop rapidly in the markets we serve, including the United States, Asia, Australia, Europe, and Latin America. Within the last few years, significant developments have taken place, primarily in international markets that we serve with respect to energy policy and related regulations. We anticipate that energy policy will continue to be an important regulatory priority globally, as well as on a national, state, and local level. As energy policy continues to evolve, the existing rules and incentives that impact the energy-related segments of our business may change. It is difficult, if not impossible, to predict what changes in energy policy might occur in the future and the timing of potential changes and their impact on our business, including potential changes that could originate from the current U.S. Presidential administration. The elimination or reduction of favorable policies for our energy-related business, or the failure to adopt expected policies that would benefit our business, could negatively impact our sales and profitability.

Changes in the energy industry, including pricing fluctuations and reductions and capital expenditures could harm our business, financial condition, and results of operations.

A significant amount of our sales is to customers in the energy production and supply industry. Our concentration of sales to the energy industry has increased as a result of our recent acquisitions and the divestiture of our oxygen-related products business in December 2018 and our Cryobiological business in October 2020. A portion of our sales for the year ended December 31, 2021 were generated by end-users in the energy industry, with many of our products sold for natural gas-related applications. Accordingly, demand for a significant portion of our products depends upon the level of capital expenditures by companies in the oil and gas industry, which depends, in part, on energy prices, as well as the price of oil relative to natural gas for some applications. Some applications for our products could see greater demand when prices for natural gas are relatively

low compared to oil prices, but a sustained decline in energy prices generally and a resultant downturn in energy production activities could negatively affect the capital expenditures of our customers. Deterioration and significant decline in the capital expenditures of our customers, whether due to a decrease in the market price of energy or otherwise, may decrease demand for our products and cause downward pressure on the prices we charge. Accordingly, if there is a downturn in the energy production and supply industry, including a decline in the cost of oil relative to natural gas, our business, financial condition, and results of operations could be adversely affected.

Our exposure to fixed-price contracts, including exposure to fixed pricing on long-term customer contracts and performance guarantees, could negatively impact our financial results.

A substantial portion of our sales has historically been derived from fixed-price contracts for large system projects which may involve long-term fixed price commitments to customers or guarantees of equipment or process performance and which are sometimes difficult to execute. To the extent that any of our fixed-price contracts are delayed, we fail to satisfy a performance guarantee, our subcontractors fail to perform, contract counterparties successfully assert claims against us, the original cost estimates in these or other contracts prove to be inaccurate or the contracts do not permit us to pass increased costs on to our customers, profitability from a particular contract may decrease or project losses may be incurred, which, in turn, could decrease our sales and overall profitability. The uncertainties associated with our fixed-price contracts make it more difficult to predict our future results and exacerbate the risk that our results will not match expectations, which has happened in the past.

Fluctuations in currency exchange or interest rates may adversely affect our financial condition and operating results.

A significant portion of our revenue and expense is incurred outside of the United States. We must translate revenues, income and expenses, as well as assets and liabilities into U.S. dollars using exchange rates during or at the end of each period. Fluctuations in currency exchange rates have had, and will continue to have an impact on our financial condition, operating results, and cash flow. While we monitor and manage our foreign currency exposure with limited use of derivative financial instruments to mitigate these exposures, fluctuations in currency exchange rates may materially impact our financial and operational results.

In addition, we are exposed to changes in interest rates. While our convertible notes have a fixed cash coupon, other instruments, primarily borrowings under our senior secured revolving credit facility due October 2026 are exposed to a variable interest rate. The impact of a 100 basis point increase in interest rates to our senior secured revolving credit facility is discussed in the “Quantitative and Qualitative Disclosures About Market Risk” section of this Annual Report.

As an increasingly global business, we are exposed to economic, political, and other risks in different countries which could materially reduce our sales, profitability or cash flows, or materially increase our liabilities.

Since we manufacture and sell our products worldwide, our business is subject to risks associated with doing business internationally. In 2021, 2020 and 2019, 56%, 51%, and 48%, respectively, of our sales occurred in international markets. Our future results could be harmed by a variety of factors, including:

- changes in foreign currency exchange rates;
- exchange controls and currency restrictions;
- changes in a specific country’s or region’s political, social or economic conditions, particularly in emerging markets;
- civil unrest, the threat of or actual military conflict between nations, other turmoil or outbreak of disease or illness, such as Covid-19, in any of the countries in which we sell our products or in which we or our suppliers operate;
- tariffs, other trade protection measures, as discussed in more detail below, and import or export licensing requirements;
- potential adverse changes in trade agreements between the United States and foreign countries, including the recently enacted United States-Mexico-Canada Agreement (USMCA), among the United States, Canada and Mexico;
- uncertainty and potentially negative consequences relating to the implementation of the United Kingdom’s decision to leave the European Union (“Brexit”);
- potentially negative consequences from changes in U.S. and international tax laws;
- difficulty in staffing and managing geographically widespread operations;
- differing labor regulations;
- requirements relating to withholding taxes on remittances and other payments by subsidiaries;
- different regulatory regimes controlling the protection of our intellectual property;

- restrictions on our ability to own or operate subsidiaries, make investments or acquire new businesses in these jurisdictions;
- restrictions on our ability to repatriate dividends from our foreign subsidiaries;
- difficulty in collecting international accounts receivable;
- difficulty in enforcement of contractual obligations under non-U.S. law;
- transportation delays or interruptions;
- changes in regulatory requirements; and
- the burden of complying with multiple and potentially conflicting laws.

Our international operations and sales also expose us to different local political and business risks and challenges. For example, we are faced with potential difficulties in staffing and managing local operations and we have to design local solutions to manage credit and legal risks of local customers and distributors, which may not be effective. In addition, because some of our international sales are to suppliers that perform work for foreign governments, we are subject to the political risks associated with foreign government projects. For example, certain foreign governments may require suppliers for a project to obtain products solely from local manufacturers or may prohibit the use of products manufactured in certain countries.

Our operations in markets such as Asia, Australia, India, Europe, and South America, may cause us difficulty due to greater regulatory barriers than in the United States, the necessity of adapting to new regulatory systems, problems related to entering new markets with different economic, social and political systems and conditions, and significant competition from the primary participants in these markets, some of which may have substantially greater resources than us. In addition, unstable political conditions or civil unrest, including political instability or threatened military actions in Eastern Europe, the Middle East, Hong Kong or elsewhere, could negatively impact our order levels and sales in a region or our ability to collect receivables from customers or operate or execute projects in a region.

Changes in U.S. trade policy, tariff and import/export regulations may have a material adverse effect on our business, financial condition and results of operations.

Our international operations and transactions also depend upon favorable trade relations between the United States and the foreign countries in which our customers and suppliers have operations. Changes in U.S. or international social, political, regulatory and economic conditions or in laws and policies governing foreign trade, manufacturing, development and investment in the territories or countries where we currently sell our products or conduct our business, as well as any negative sentiment toward the U.S. as a result of such changes, could adversely affect our business. The Trump administration instituted or proposed changes in trade policies that include the negotiation or termination of trade agreements, the imposition of higher tariffs on imports into the U.S., economic sanctions on individuals, corporations or countries, and other government regulations affecting trade between the U.S. and other countries where we conduct our business. It may be time-consuming and expensive for us to alter our business operations in order to adapt to or comply with these and any additional changes that may be implemented by the Biden administration.

U.S. government policy changes and proposals may result in greater restrictions and economic disincentives on international trade. The implementation of new tariffs and other changes in U.S. trade policy could trigger retaliatory actions by affected countries, and certain foreign governments have instituted or have been considering imposing trade sanctions on certain U.S. goods. We do a significant amount of business that would be impacted by changes to the trade policies of the U.S. and foreign countries (including governmental action related to tariffs, international trade agreements, or economic sanctions). Such changes have the potential to adversely impact the U.S. economy or certain sectors thereof, our industry and the global demand for our products. We may not succeed in developing and implementing policies and strategies to counter the foregoing factors effectively in each location where we do business and the foregoing factors may cause a reduction in our sales, profitability or cash flows, or cause an increase in our liabilities.

Data privacy and data security considerations could impact our business.

The interpretation and application of data protection laws, including but not limited to the General Data Protection Regulation (the “GDPR”) in Europe, are uncertain and evolving. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with our data security practices. Complying with these various laws is difficult and could cause us to incur substantial costs or require us to change our business practices in a manner adverse to our business. Further, although we are implementing internal controls and procedures designed to ensure compliance with the GDPR and other privacy-related laws, rules and regulations (collectively, the “Data Protection Laws”), there can be no assurance that our controls and procedures will enable us to fully comply with all Data Protection Laws.

Despite our efforts to protect sensitive information and confidential and personal data, comply with applicable laws, rules and regulations and implement data security measures, our facilities and systems may be vulnerable to security breaches and other data loss, including cyber-attacks. In addition, it is not possible to predict the impact on our business of the future loss, alteration or misappropriation of information in our possession related to us, our employees, former employees, customers, suppliers or others. This could lead to negative publicity, legal claims, theft, modification or destruction of proprietary information or key information, damage to or inaccessibility of critical systems, manufacture of defective products, production downtimes, operational disruptions and other significant costs, which could adversely affect our reputation, financial condition and results of operations.

We are subject to potential insolvency or financial distress of third parties.

We are exposed to the risk that third parties to various arrangements who owe us money or goods and services, or who purchase goods and services from us, will not be able to perform their obligations or continue to place orders due to insolvency or financial distress. If third parties fail to perform their obligations under arrangements with us, we may be forced to replace the underlying commitment at current or above market prices or on other terms that are less favorable to us or we may have to write off receivables in the case of customer failures to pay. If this happens, whether as a result of the insolvency or financial distress of a third party or otherwise, we may incur losses, or our results of operations, financial position or liquidity could otherwise be adversely affected.

Failure to protect our intellectual property and know-how could reduce or eliminate any competitive advantage and reduce our sales and profitability, and the cost of protecting our intellectual property may be significant.

We rely on a combination of internal procedures, nondisclosure agreements and intellectual property rights assignment agreements, as well as licenses, patents, trademarks and copyright law to protect our intellectual property and know-how. Our intellectual property rights may not be successfully asserted in the future or may be invalidated, circumvented or challenged. For example, we frequently explore and evaluate potential relationships and projects with other parties, which often require that we provide the potential partner with confidential technical information. While confidentiality agreements are typically put in place, there is a risk the potential partner could violate the confidentiality agreement and use our technical information for its own benefit or the benefit of others or compromise the confidentiality. In addition, the laws of certain foreign countries in which our products may be sold or manufactured do not protect our intellectual property rights to the same extent as the laws of the United States. In addition, the United States has transitioned from a “first-to-invent” to a “first-to-file” patent system, which means that between two identical, pending patent applications, the first inventor no longer receives priority on the patent to the invention. As a result, the Leahy-Smith America Invents Act may require us to incur significant additional expense and effort to protect our intellectual property. Failure or inability to protect our proprietary information could result in a decrease in our sales or profitability.

We have obtained and applied for some U.S. and foreign trademark and patent registrations and will continue to evaluate the registration of additional trademarks and patents, as appropriate. We cannot guarantee that any of our pending applications will be approved. Moreover, even if the applications are approved, third parties may seek to oppose or otherwise challenge them. A failure to obtain registrations in the United States or elsewhere could limit our ability to protect our trademarks and technologies and could impede our business. Further, the protection of our intellectual property may require expensive investment in protracted litigation and the investment of substantial management time and there is no assurance we ultimately would prevail or that a successful outcome would lead to an economic benefit that is greater than the investment in the litigation. The patents in our patent portfolio are scheduled to expire from 2022 to 2039.

In addition, we may be unable to prevent third parties from using our intellectual property rights and know-how without our authorization or from independently developing intellectual property that is the same as or similar to ours, particularly in those countries where the laws do not protect our intellectual property rights as fully as in the United States. We compete in a number of industries (e.g., heat exchangers and cryogenic storage) that are small or specialized, which makes it easier for a competitor to monitor our activities and increases the risk that ideas will be stolen. The unauthorized use of our know-how by third parties could reduce or eliminate any competitive advantage we have developed, cause us to lose sales or otherwise harm our business or increase our expenses as we attempt to enforce our rights.

We may be required to make expenditures in order to comply with environmental, health and safety laws and climate change regulations, or incur additional liabilities under these laws and regulations.

We are subject to numerous environmental, health and safety laws and regulations that impose various environmental controls on us or otherwise relate to environmental protection and various health and safety matters, including the discharge of pollutants in the air and water, the handling, use, treatment, storage and clean-up of solid and hazardous materials and wastes, the investigation and remediation of soil and groundwater affected by hazardous substances and the requirement to obtain and

maintain permits and licenses. These laws and regulations often impose strict, retroactive and joint and several liability for the costs and damages resulting from cleaning up our or our predecessors' facilities and third-party disposal sites. Compliance with these laws generally increases the costs of transportation and storage of raw materials and finished products, as well as the costs of storing and disposing waste, and could decrease our liquidity and profitability and increase our liabilities. Health and safety and other laws in the jurisdictions in which we operate impose various requirements on us including state licensing requirements that may benefit our customers. If we are found to have violated any of these laws, we may become subject to corrective action orders and fines or penalties, and incur substantial costs, including substantial remediation costs and commercial liability to our customers. Further, we also could be subject to future liability resulting from conditions that are currently unknown to us that could be discovered in the future.

We are currently remediating or developing work plans for remediation of environmental conditions involving certain current or former facilities. For example, the discovery of contamination arising from historical industrial operations at our Clarksville, Arkansas property, which is currently being leased to a third party business, has exposed us, and in the future may continue to expose us, to remediation obligations. We have also been subject to environmental liabilities for other sites where we formerly operated or at locations where we or our predecessors did or are alleged to have operated. To date, our environmental remediation expenditures and costs for otherwise complying with environmental laws and regulations have not been material, but the uncertainties associated with the investigation and remediation of contamination and the fact that such laws or regulations change frequently makes predicting the cost or impact of such laws and regulations on our future operations uncertain. Stricter environmental, safety and health laws, regulations or enforcement policies could result in substantial costs and liabilities to us and could subject us to more rigorous scrutiny. Consequently, compliance with these laws could result in significant expenditures, as well as other costs and liabilities that could decrease our liquidity and profitability and increase our liabilities.

There is a growing political and scientific consensus that emissions of greenhouse gases alter the composition of the global atmosphere in ways that are affecting the global climate. Various stakeholders, including legislators and regulators, stockholders and non-governmental organizations, as well as companies in many business sectors, are considering ways to reduce greenhouse gas emissions. New regulations could result in product standard requirements for our global businesses but because any impact is dependent on the design of the mandate or standard, we are unable to predict its significance at this time. Furthermore, the potential physical impacts of theorized climate change on our customers, and therefore on our operations, are speculative and highly uncertain, and would be particular to the circumstances developing in various geographical regions. These may include changes in weather patterns (including drought and rainfall levels), water availability, storm patterns and intensities, and temperature levels. These potential physical effects may adversely impact the cost, production, sales and financial performance of our operations.

Our pension plan is currently underfunded and we contribute to a multi-employer plan for collective bargaining U.S. employees, which is also underfunded.

Certain U.S. hourly and salaried employees are covered by our defined benefit pension plan. The plan has been frozen since February 2006. As of December 31, 2021, the projected benefit obligation under our pension plan was approximately \$63.5 million, and the value of the assets of the plan was approximately \$61.9 million, resulting in our pension plan being underfunded by approximately \$1.6 million.

We are also a participant in a multi-employer plan, which is underfunded. Among other risks associated with multi-employer plans, contributions and unfunded obligations of the multi-employer plan are shared by the plan participants and we may inherit unfunded obligations if other plan participants withdraw from the plan or cease to participate. Additionally, if we elect to stop participating in the multi-employer plan, we may be required to pay amounts related to withdrawal liabilities associated with the underfunded status of the plan. If the performance of the assets in our pension plan or the multi-employer plan does not meet expectations or if other actuarial assumptions are modified, our required pension contributions for future years could be higher than we expect, which may negatively impact our results of operations, cash flows and financial condition.

We operate in many different jurisdictions and we could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar worldwide anti-corruption laws.

The U.S. Foreign Corrupt Practices Act ("FCPA") and similar worldwide anti-corruption laws generally prohibit companies and their intermediaries from making improper payments for the purpose of obtaining or retaining business. Our internal policies mandate compliance with these anti-corruption laws. We operate in many parts of the world that have experienced corruption to some degree, and in certain circumstances, strict compliance with anti-corruption laws may conflict with local customs and practices. Despite our training and compliance programs, we cannot assure you that our internal control policies and procedures always will protect us from reckless or criminal acts committed by our employees or agents. Our

continued expansion outside the U.S., including in developing countries, could increase the risk of such violations in the future. Violations of these laws, or allegations of such violations, could disrupt our business and result in a material adverse effect on our results of operations or financial condition.

Our operations could be impacted by the effects of severe weather.

Some of our operations, including our operations in New Iberia, Louisiana, Theodore, Alabama and Houston, Texas, are located in geographic regions and physical locations that are susceptible to physical damage and longer-term economic disruption from hurricanes or other severe weather. We also could make significant future capital expenditures in hurricane-susceptible or other severe weather locations from time to time. These weather events can disrupt our operations, result in damage to our properties and negatively affect the local economy in which these facilities operate. Hurricanes or other severe weather may cause production or delivery delays as a result of the physical damage to the facilities, the unavailability of employees and temporary workers, the shortage of or delay in receiving certain raw materials or manufacturing supplies and the diminished availability or delay of transportation for customer shipments, any of which may have an adverse effect on our sales and profitability. Additionally, the potential physical impact of theorized climate change could include more frequent and intense storms, which would heighten the risk to our operations in areas that are susceptible to hurricanes and other severe weather. Although we maintain insurance subject to certain deductibles, which may cover some of our losses, that insurance may become unavailable or prove to be inadequate.

We are subject to regulations governing the export of our products.

Due to our significant foreign sales, our export activities are subject to regulation, including the U.S. Treasury Department's Office of Foreign Assets Control's regulations. We believe we are in compliance with these regulations and maintain robust programs intended to maintain compliance. However, unintentional lapses in our compliance or uncertainties associated with changing regulatory requirements could result in future violations (or alleged violations) of these regulations. Any violations may subject us to government scrutiny, investigation and civil and criminal penalties and may limit our ability to export our products.

As a provider of products to the U.S. government, we are subject to certain federal rules, regulations, audits and investigations, the violation or failure of which could adversely affect our business.

We sell certain of our products to the U.S. government; and, therefore, we must comply with and are affected by laws and regulations governing purchases by the U.S. government. Although we are not subject to all contractor requirements, such as the Covid-19 vaccination requirements applicable to "covered contractors", the generally more extensive requirements governing "Government contract laws and regulations" affect how we do business with our government customers and, in some instances, impose added costs on our business. For example, a violation of specific laws and regulations could result in the imposition of fines and penalties or the termination of our contracts or debarment from bidding on contracts. In some instances, these laws and regulations impose terms or rights that are more favorable to the government than those typically available to commercial parties in negotiated transactions.

Current economic and political conditions make tax rules in jurisdictions subject to significant change, and unanticipated changes in our effective tax rate could adversely affect our future results.

Our future results of operations could be affected by changes in the effective tax rate as a result of changes in tax laws, regulations and judicial rulings. In December 2017, the Tax Cuts and Jobs Act of 2017 was signed into law in the United States, which among other things, lowered the federal corporate income tax rate from 35% to 21% and moved the country towards a territorial tax system with a one-time mandatory tax on previously deferred foreign earnings of foreign subsidiaries. Although our effective tax rate decreased during 2018, there can be no assurances that any expected benefit from the Tax Cuts and Jobs Act will be maintained long-term given political and other uncertainties.

Also, further changes in the tax laws of foreign jurisdictions could arise, including as a result of the base erosion and profit shifting (BEPS) project undertaken by the Organisation for Economic Co-operation and Development (OECD). The OECD, which represents a coalition of member countries, has issued recommendations that, in some cases, would make substantial changes to numerous long-standing tax positions and principles. These contemplated changes, to the extent adopted by OECD members and/or other countries, could increase tax uncertainty and may adversely affect our provision for income taxes.

Our effective tax rate could also be adversely affected by changes in the mix of earnings and losses in countries with differing statutory tax rates, certain non-deductible expenses arising from share-based compensation, the valuation of deferred tax assets and liabilities and changes in accounting principles. In addition, we are subject to income tax audits by many tax jurisdictions throughout the world. Although we believe our income tax liabilities are reasonably estimated and accounted for

in accordance with applicable laws and principles, an adverse resolution of one or more uncertain tax positions in any period could have a material impact on the results of operations for that period.

Risks Related to Our Leverage

Our leverage and future debt service obligations could adversely affect our financial condition, limit our ability to raise additional capital to fund our operations, limit our ability to react to changes in the economy or our industry, impact the way we operate our business, expose us to interest rate risk to the extent of our variable rate debt and prevent us from fulfilling our debt service obligations.

We are leveraged and have future debt service obligations. Our financial performance could be affected by our leverage. As of December 31, 2021, our total indebtedness was \$859.6 million. In addition, at that date, under our senior secured revolving credit facility, we had \$30.0 million of letters of credit and bank guarantees outstanding and borrowing capacity of approximately \$369.2 million. Through separate facilities, our subsidiaries had \$31.2 million of letters of credit bank guarantees outstanding at December 31, 2021.

Our level of indebtedness could have important negative consequences, including:

- difficulty in generating sufficient cash flow and reduced availability of cash for our operations and other business activities;
- difficulty in obtaining financing in the future;
- exposure to risk of increased interest rates due to variable rates of interest under our senior secured revolving credit facility;
- vulnerability to general economic downturns and adverse industry conditions;
- increased competitive disadvantage due to our debt service obligations;
- adverse customer reaction to our debt levels;
- inability to comply with covenants in, and potential for default under, our debt instruments; and
- failure to refinance any of our debt. See Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources.”

If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to sell assets, seek additional capital or seek to restructure or refinance our indebtedness. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. We may be unable to consummate those asset sales to raise capital or sell assets at prices that we believe are fair and proceeds that we do receive may be inadequate to meet any debt service obligations then due.

We may still be able to incur substantially more debt. This could further exacerbate the risks that we face.

We may be able to incur substantial additional indebtedness in the future. The terms of our debt instruments do not fully prohibit us from doing so. Our senior secured revolving credit facility provides commitments of up to \$1,000.0 million, approximately \$369.2 million of which would have been available for future borrowings (after giving effect to letters of credit and bank guarantees outstanding) as of December 31, 2021. See Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Debt Instruments and Related Covenants.” If new debt is added to our current debt levels, the related risks that we now face could intensify.

The senior secured revolving credit facility contains a number of restrictive covenants which limit our ability to finance future operations or capital needs or engage in other business activities that may be in our interest.

The senior secured revolving credit facility due October 2026 imposes, and the terms of any future indebtedness may impose, operating and other restrictions on us and our subsidiaries. Such restrictions affect or will affect, and in various circumstances limit or prohibit, among other things, our ability and the ability of our subsidiaries to:

- incur or guarantee additional indebtedness;
- create liens;
- pay dividends based on our leverage ratio and make other distributions in respect of our capital stock;
- redeem or buy back our capital stock based on our leverage ratio;
- make certain investments or certain other restricted payments;
- enter into a new line of business;

- sell or transfer certain kinds of assets;
- enter into certain types of transactions with affiliates; and
- effect mergers or consolidations.

The senior secured revolving credit facility due October 2026 also requires us to achieve certain financial and operating results and maintain compliance with specified financial ratios. Our ability to comply with these ratios may be affected by events beyond our control.

The restrictions contained in the senior secured revolving credit facility could:

- limit our ability to plan for or react to market or economic conditions or meet capital needs or otherwise restrict our activities or business plans; and
- adversely affect our ability to finance our operations, acquisitions, investments or strategic alliances or other capital needs or to engage in other business activities that would be in our interest.

A breach of any of these covenants or our inability to comply with the required financial ratios could result in a default under our senior secured revolving credit facility due October 2026. If an event of default occurs under our senior secured revolving credit facility, which includes an event of default under the indenture governing our 1.00% Convertible Senior Subordinated Notes due November 2024, the lenders could elect to:

- declare all borrowings outstanding, together with accrued and unpaid interest, to be immediately due and payable; or
- require us to apply all of our available cash to repay the borrowings,

either of which could result in an event of default under our convertible notes or prevent us from making payments on the convertible notes when due in 2024, as the case may be. The lenders will also have the right in these circumstances to terminate any commitments they have to provide further financing.

If we were unable to repay or otherwise refinance these borrowings when due, our lenders could sell the collateral securing the senior secured revolving credit facility due October 2026, which constitutes substantially all of our and our domestic wholly-owned subsidiaries' assets.

Our 1.00% Convertible Senior Subordinated Notes due November 2024 have certain fundamental change and conditional conversion features which, if triggered, may adversely affect our financial condition.

If a fundamental change occurs under our 1.00% Convertible Senior Subordinated Notes due November 2024, the holders of the convertible notes may require us to purchase for cash any or all of the convertible notes. However, there can be no assurance that we will have sufficient funds at the time of the fundamental change to purchase all of the convertible notes delivered for purchase, and we may not be able to arrange necessary financing on acceptable terms, if at all. Likewise, if one of the conversion contingencies of our convertible notes is triggered, holders of convertible notes will be entitled to convert the convertible notes at any time during specified periods.

We are subject to counterparty risk with respect to the convertible note hedge and capped call transactions associated with our 1.00% Convertible Senior Subordinated Notes due November 2024.

The option counterparties for our convertible note hedging arrangements are financial institutions, and we will be subject to the risk that any or all of them might default under the convertible note hedge and capped call transactions. Our exposure to the credit risk of the option counterparties is not secured by any collateral. Global economic conditions during the 2008-2009 economic downturn resulted in the actual or perceived failure or financial difficulties of many financial institutions. If an option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under the convertible note hedge and capped call transactions with that option counterparty. Our exposure will depend on many factors but, generally, the increase in our exposure will be correlated to the increase in the market price and in the volatility of our common stock. In addition, upon a default by an option counterparty, we may suffer adverse tax consequences and more dilution than we currently anticipate with respect to our common stock. We can provide no assurances as to the financial stability or viability of the option counterparties.

Risks Related to the Trading Market for Our Common Stock

Our common stock has experienced, and may continue to experience, price volatility.

Our common stock has at times experienced substantial price volatility as a result of many factors, including the general volatility of stock market prices and volumes, changes in securities analysts' estimates of our financial performance, variations

between our actual and anticipated financial results, fluctuations in order or backlog levels, fluctuations in energy prices, or uncertainty about current global economic conditions. For these reasons, among others, the price of our stock may continue to fluctuate.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws and other agreements and in Delaware law may discourage a takeover attempt.

Provisions contained in our amended and restated certificate of incorporation and amended and restated bylaws and Delaware law could make it more difficult for a third party to acquire us. Provisions of our amended and restated certificate of incorporation and amended and restated bylaws and Delaware law impose various procedural and other requirements, which could make it more difficult for stockholders to effect certain corporate actions. For example, our amended and restated certificate of incorporation authorizes our board of directors to determine the rights, preferences, privileges and restrictions of unissued series of preferred stock, without any vote or action by our stockholders. Therefore, our board of directors can authorize and issue shares of preferred stock with voting or conversion rights that could adversely affect the voting or other rights of holders of our common stock. These rights may have the effect of delaying or deterring a change of control of our company. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our common stock.

In addition, the terms of our 1.00% Convertible Senior Subordinated Notes due November 2024 may require us to purchase these convertible notes for cash in the event of a takeover of our Company. The indentures governing the convertible notes also prohibit us from engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes our obligations under the convertible notes. These and other provisions applicable to the convertible notes may have the effect of increasing the cost of acquiring us or otherwise discourage a third party from acquiring us.

The issuance of common stock upon conversion of our 1.00% Convertible Senior Subordinated Notes due November 2024 could cause dilution to the interests of our existing stockholders.

As of December 31, 2021, we had \$258.8 million aggregate principal amount of our 1.00% Convertible Senior Subordinated Notes due November 2024. Prior to the close of business on the business day immediately preceding August 15, 2024, the convertible notes will be convertible only upon satisfaction of certain conditions. Holders may convert their 1.00% convertible notes at their option at any time after August 15, 2024 until the close of business on the second scheduled trading day immediately preceding November 15, 2024. As a result of attaining these specified market price conditions, the notes were convertible in the first quarter of 2022, although no notes have been converted to date. On December 31, 2020, we amended the Indenture governing our 1.00% Convertible Senior Subordinated Notes due November 2024 to eliminate share settlement thus leaving us with two settlement options: (1) cash settlement or (2) cash for par and any combination of cash and shares for the excess settlement amount above the \$258.8 million aggregate principal amount of our 1.00% Convertible Senior Subordinated Notes due November 2024. We currently intend to settle conversions of 1.00% convertible notes through a combination of the payment of cash and issuance of shares, with payments of cash up to the aggregate principal amount of the convertible notes to be converted and delivering shares of our common stock in respect of the remainder, if any, of our conversion obligation in excess of the aggregate principal amount of the notes being converted. The number of shares issued could be significant and such an issuance could cause significant dilution to the interests of the existing stockholders.

Item 1B. *Unresolved Staff Comments*

Not applicable.

Item 2. *Properties*

We occupy 62 facilities totaling approximately 6.1 million square feet, including the locations listed below, with the majority devoted to manufacturing, assembly, and storage. We also own several plots of land in the Czech Republic totaling approximately 0.5 million square feet, with the majority devoted to outdoor storage. Of these facilities, approximately 4.1 million square feet are owned and 2.0 million square feet are occupied under operating leases. One of our owned facilities, a 0.1 million square foot facility in Clarksville, Arkansas, is leased to a third party. We currently lease approximately 20.8 thousand square feet for our corporate office in Ball Ground, Georgia. Our major owned facilities in the United States are subject to mortgages securing our 2026 Credit Facilities.

The following table summarizes information about our principal plants and other materially important physical properties as of January 31, 2022:

Segment	Location	Ownership	Use
Corporate	Ball Ground, Georgia, U.S.	Leased	Office
Corporate	Hyderabad, India	Leased	Office
Corporate	Luxembourg, Luxembourg	Leased	Office
Cryo Tank Solutions/Specialty Products	Canton, Georgia, U.S.	Owned	Manufacturing/Office
Cryo Tank Solutions/Heat Transfer Systems/Repair, Service & Leasing	Milan, Italy	Owned	Manufacturing/Office
Cryo Tank Solutions/Specialty Products	Theodore, Alabama, U.S.	Owned	Manufacturing/Office
Cryo Tank Solutions/Specialty Products/Repair, Service & Leasing	Andhra Pradesh, India	Owned	Manufacturing/Office
Cryo Tank Solutions/Specialty Products/Repair, Service & Leasing	Changzhou, China	Leased/Owned	Manufacturing/Office
Cryo Tank Solutions/Specialty Products/Repair, Service & Leasing	Decin, Czech Republic	Leased/Owned	Manufacturing/Office
Cryo Tank Solutions/Specialty Products/Repair, Service & Leasing	Goch, Germany	Owned	Manufacturing/Office
Cryo Tank Solutions/Specialty Products/Repair, Service & Leasing	Kuala Lumpur, Malaysia	Leased	Office
Cryo Tank Solutions/Specialty Products/Repair, Service & Leasing	Lery, France	Owned	Manufacturing/Office
Cryo Tank Solutions/Specialty Products/Repair, Service & Leasing	New Prague, Minnesota, U.S.	Leased/Owned	Manufacturing/Office
Heat Transfer Systems	Pombia, Italy	Leased	Manufacturing/Office
Heat Transfer Systems/Repair, Service & Leasing	Beasley, Texas, U.S.	Owned	Manufacturing/Warehouse
Heat Transfer Systems/Repair, Service & Leasing	Tulsa, Oklahoma, U.S.	Leased/Owned	Manufacturing/Office
Heat Transfer Systems/Specialty Products/Repair, Service & Leasing	La Crosse, Wisconsin, U.S.	Leased/Owned	Manufacturing/Office/Warehouse
Heat Transfer Systems/Specialty Products/Repair, Service & Leasing	New Iberia, Louisiana, U.S.	Leased	Manufacturing
Heat Transfer Systems/Specialty Products/Repair, Service & Leasing	Valencia, California, U.S.	Leased	Manufacturing/Office
Heat Transfer Systems/Specialty Products/Repair, Service & Leasing	The Woodlands, Texas, U.S.	Leased	Office
Specialty Products	Allentown, Pennsylvania, U.S.	Leased	Office
Specialty Products	Austin, Texas, U.S.	Leased	Manufacturing/Warehouse
Specialty Products	Duluth, Georgia, U.S.	Leased	Office
Specialty Products	Fayetteville, Arkansas, U.S.	Leased	Office/Warehouse
Specialty Products	Orem, Utah, U.S.	Leased	Manufacturing/Office
Repair, Service & Leasing	Franklin, Indiana, U.S.	Leased	Manufacturing/Office/Service
Repair, Service & Leasing	Houston, Texas, U.S.	Owned	Service
Repair, Service & Leasing	Richburg, South Carolina, U.S.	Owned	Service

Regulatory Environment

We are subject to federal, state, and local regulations relating to the discharge of materials into the environment, production and handling of hazardous and regulated materials, and the conduct and condition of our production facilities. We do not believe that these regulatory requirements have had a material effect upon our capital expenditures, earnings, or competitive position. We are not anticipating any material capital expenditures in 2022 that are directly related to regulatory compliance matters. We are also not aware of any pending or potential regulatory changes that would have a material adverse impact on our business.

Item 3. *Legal Proceedings*

In connection with our divestiture of our Cryobiological business, Chart retained certain potential liabilities, including claims in connection with our following litigation. During the second quarter of 2018, Chart was named in lawsuits (including lawsuits filed in the U.S. District Court for the Northern District of California) filed against Chart and other defendants with respect to the alleged failure of a stainless steel cryobiological storage tank (model MVE 808AF-GB) at the Pacific Fertility Center in San Francisco, California. In May and June of 2021, the first five of the federal lawsuits went to trial, and on June 10, 2021, the jury reached a verdict against Chart in favor of the plaintiffs in those lawsuits in the amount of \$14.9 million, of which 90% (\$13.5 million) is attributable to Chart. On August 13, 2021, judgment was entered, and on September 10, 2021, we

filed two post-trial motions: a motion for a new trial and a renewed motion for judgment as a matter of law. The motion for new trial or, in the alternative, request for remittitur, sought, among other relief, to have the court grant a new trial because of erroneous evidentiary rulings, a factually unsupported negligence claim, plaintiffs' attorney misconduct, allocation of fault that was not supported by the record, and excessive noneconomic damages. The renewed motion for judgment as a matter of law sought to have the court direct judgment for Chart on the negligent failure to recall claim because of our contention that plaintiffs failed to present sufficient evidence to prove each element of that claim. On November 5, 2021, the court denied these post-trial motions. Chart filed its notice of appeal on December 1, 2021. On December 7, 2021, the court stayed the remaining federal lawsuits pending resolution of Chart's appeal.

In the second quarter 2021, we recorded a loss contingency accrual and corresponding charge to net income for \$13.5 million in the amount of the jury verdict attributable to Chart. The loss contingency accrual is included in other current liabilities in our consolidated balance sheet at December 31, 2021. Chart expects that any potential loss associated with the verdict will be covered by existing product liability insurance, subject to previously issued reservations of rights by the insurance carriers. Accordingly, we have recorded an offsetting \$13.5 million loss recovery receivable with a corresponding credit to net income. The loss recovery receivable is included in other current assets in our consolidated balance sheet at December 31, 2021. Although we continue to vigorously contest the result in this case, we continue to recognize the loss contingency accrual and related loss recovery receivable in our consolidated balance sheet at December 31, 2021.

Currently there are 164 individual cases (excluding the first five cases from the May/June 2021 trial) with respect to the Pacific Fertility Center incident on the docket in the U.S. District Court for the Northern District of California. In addition to the cases filed in the U.S. District Court for the Northern District of California, Chart is currently a defendant in 53 individual cases in the San Francisco Superior Court.

We have asserted various defenses against the claims in the lawsuits, which remain in various stages of development, including a defense that since manufacture, we were not in any way involved with the installation, ongoing maintenance or monitoring of the tank or related fertility center cryogenic systems at any time since the initial delivery of the tank. We continue to evaluate the merits of such claims for each specific case in light of the information available to date regarding use, maintenance and operation of the tank that was sold to the Pacific Fertility Center through an independent distributor, and which had been out of our control for six years prior to the alleged failure. We previously disclosed that a loss associated with the claims in the lawsuits was reasonably possible but not estimable. Although we have not reached a conclusion that losses in these cases are currently probable, based on further developments including the status of the various lawsuits, preliminary discussions in an attempt to resolve the entirety of these cases and the consideration of insurance coverage, we now estimate that losses of up to \$50 million are reasonably possible. The reasonably possible losses are an estimate and are net of amounts we expect to be directly covered by insurance, and actual costs arising from this matter could be materially lower or higher depending on the actual costs incurred to resolve the claims in the lawsuits.

We are occasionally subject to various legal claims related to performance under contracts, product liability, taxes, employment matters, environmental matters, intellectual property, and other matters incidental to the normal course of our business. Based on our historical experience in litigating these claims, as well as our current assessment of the underlying merits of the claims and applicable insurance, if any, management believes that the final resolution of these matters, including the Pacific Fertility Center cases described above, will not have a material adverse effect on our financial position, liquidity, cash flows, or results of operations, except that our results of operations for any particular reporting period may be adversely affected by any potential or actual loss that is accrued in such period. Future developments may, however, result in resolution of these legal claims in a way that could have a material adverse effect.

Item 4. *Mine Safety Disclosures*

Not applicable.

Item 4A. Executive Officers of the Registrant*

The name, age and positions of each Executive Officer of the Company as of February 15, 2022 are as follows:

Name	Age	Position
Jillian C. (Jill) Evanko	44	Chief Executive Officer and President (Principal Executive Officer)
Joseph R. (Joe) Brinkman	52	Vice President and Chief Financial Officer (Principal Financial Officer)
Gerald F. (Gerry) Vinci	56	Vice President, Chief Human Resources Officer
Herbert G. (Herb) Hotchkiss	51	Vice President, General Counsel and Secretary
Joseph A. (Joe) Belling	52	Chief Commercial Officer
Douglas A. (Doug) Ducote Jr.	71	Chief Technology Officer

* Included pursuant to Instruction 3 to Item 401(b) of Regulation S-K.

Jillian C. (Jill) Evanko was appointed Chief Executive Officer and President on June 12, 2018 and served as Chief Financial Officer from March 1, 2017 until January 14, 2019 and from August 29, 2019 until March 16, 2021. Ms. Evanko joined Chart on February 13, 2017 as Vice President of Finance. Prior to joining Chart, Ms. Evanko served as the Vice President and Chief Financial Officer of Truck-Lite Co., LLC, a manufacturer of lighting and specialty products for the truck and commercial vehicle industries, since October 2016. Prior to that, she held multiple executive positions at Dover Corporation, a diversified global manufacturer, and its subsidiaries, including the role of Vice President and Chief Financial Officer of Dover Fluids since January 2014. Prior to joining Dover in 2004, Ms. Evanko worked in valuation services at Arthur Andersen, LLP and also held audit and accounting roles for Honeywell and Sony Corporation of America. Ms. Evanko also serves as a director of Parker-Hannifin Corporation (NYSE: PH).

Joseph R. (Joe) Brinkman was appointed our Vice President and Chief Financial Officer on October 1, 2021. Prior to his appointment, Mr. Brinkman was Vice President and General Manager of Industrial Gas Products, the Company's largest business. In his 23 years with the Company Mr. Brinkman has held various roles including Materials Manager, Director of Global Sourcing and most recently Vice President & General Manager of Bulk Gas Products.

Gerald F. (Gerry) Vinci was appointed our Vice President and Chief Human Resources Officer and has served in that capacity since December 5, 2016, when he joined Chart. Mr. Vinci was designated an executive officer of Chart on August 23, 2017. Prior to joining Chart, Mr. Vinci held various executive Human Resources roles at Dover Corporation, a diversified global manufacturer, from February 2013 to November 2016, including Vice President, Human Resources for Dover Engineered Systems and Dover Refrigeration and Food Equipment Segments. From 1997 to 2013, Mr. Vinci served in numerous Human Resources executive roles and as Senior Counsel for Harsco Corporation. Prior to that, Mr. Vinci was an attorney for Sunoco, Inc.

Herbert G. (Herb) Hotchkiss was appointed Vice President, General Counsel and Secretary on March 3, 2019. Prior to joining Chart, Mr. Hotchkiss spent over 11 years at Truck-Lite Co., LLC, a manufacturer of lighting and specialty products for the truck and commercial vehicle industries, as Vice President and Corporate Counsel. Prior to joining Truck-Lite, Mr. Hotchkiss worked for Blair Corporation as its Vice President and General Counsel. Prior to joining Blair Corporation, Mr. Hotchkiss was employed as a Cleveland attorney, working as corporate associate at Calfee, Halter & Griswold LLP and Hahn, Loeser & Parks LLP.

Joseph A. (Joe) Belling was appointed Chief Commercial Officer on August 11, 2020. Prior to his appointment, Mr. Belling held various roles at Chart, most recently as President of the Chart Energy and Chemicals (E&C) segment and prior to that as President of E&C Cryogenics and VP/GM of Chart's Brazed Aluminum Heat Exchangers (BAHX) business. Prior to joining Chart, Mr. Belling served in various roles of increasing responsibility at Trane, a multi-national corporation specializing in the HVAC industry. Mr. Belling was also employed by ALTEC International, which transitioned into Chart Energy and Chemicals.

Douglas A. (Doug) Ducote Jr. was appointed Chief Technology Officer on February 14, 2020. Mr. Ducote joined Chart in 1978. Prior to his appointment, Mr. Ducote was Vice President, Process Plant Technology for Chart E&C and previously held multiple engineering and leadership roles including General Manager of operations in New Iberia, Louisiana and General Manager of the Process Systems business in The Woodlands, Texas. Mr. Ducote holds nine patents and is the co-inventor of the IPSMR® LNG liquefaction process and heavy hydrocarbon removal process for LNG.

PART II

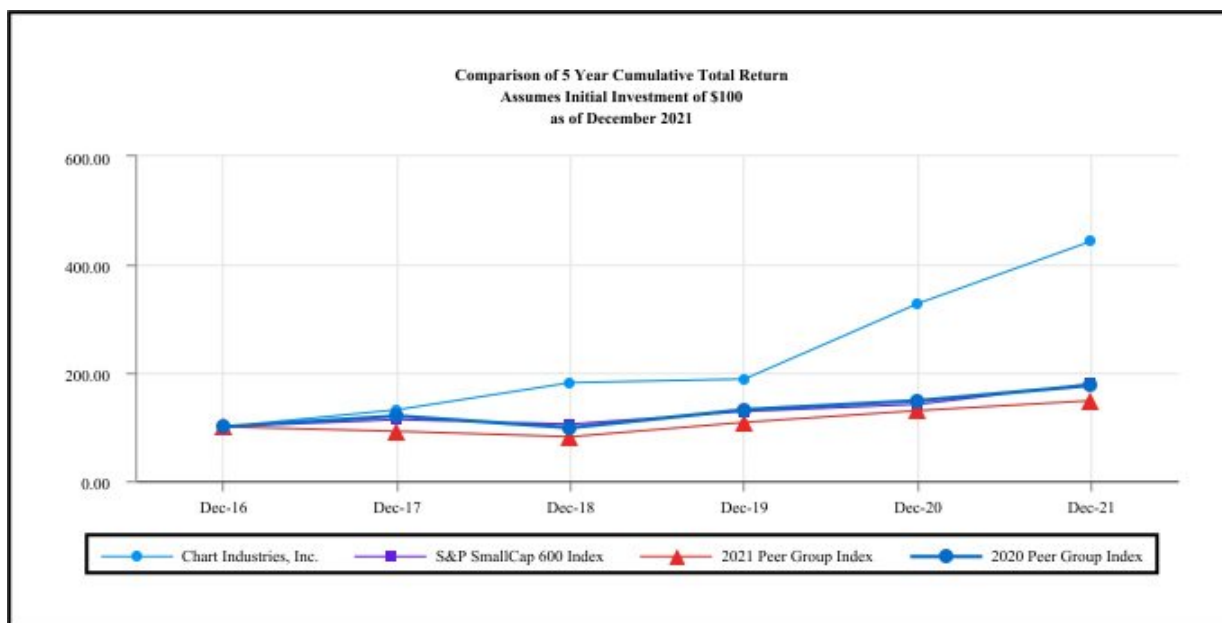
Item 5. *Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities*

Chart’s common stock is traded on the New York Stock Exchange under the symbol “GTLS.” As of February 1, 2022, there were 177 holders of record of our common stock. Since many holders hold shares in “street name,” we believe that there are a significantly larger number of beneficial owners of our common stock than the number of record holders.

We do not currently intend to pay any cash dividends on our common stock, and instead intend to retain earnings, if any, for debt reduction, organic capital expenditures for productivity and capacity and potential acquisitions. The amounts available to us to pay future cash dividends may be restricted by our 2026 Credit Facilities to the extent our pro forma leverage ratio exceeds certain targets. Any decision to declare and pay dividends in the future will be made at the discretion of our board of directors and will depend on, among other things, our results of operations, financial condition, cash requirements, contractual restrictions, and other factors that our board of directors may deem relevant.

Cumulative Total Return Comparison

Set forth below is a line graph comparing the cumulative total return of a hypothetical investment in the shares of common stock of Chart with the cumulative return of a hypothetical investment in each of the S&P SmallCap 600 Index and our Peer Group Index based on the respective market prices of each such investment on the dates shown below, assuming an initial investment of \$100 on December 31, 2016, including reinvestment of dividends, if any.



	December 31,					
	2016	2017	2018	2019	2020	2021
Chart Industries, Inc.	\$ 100.00	\$ 130.09	\$ 180.54	\$ 187.37	\$ 327.01	\$ 442.78
S&P SmallCap 600 Index	100.00	113.15	103.51	127.05	141.33	179.12
2021 Peer Group Index	100.00	91.18	81.65	108.10	128.54	148.19
2020 Peer Group Index	100.00	119.84	97.15	130.66	147.94	175.93

We select the peer companies that comprise the Peer Group Index solely on the basis of objective criteria. These criteria result in an index composed of oil field equipment/service and other comparable industrial companies. The 2021 Peer Group Index is comprised of Air Products and Chemicals, Inc., Baker Hughes Company, Barnes Group Inc., ChampionX Corporation, Cheniere Energy, Inc., CIMC Enric Holdings Limited, CNH Industrial N.V., EnPro Industries, Inc., ESCO Technologies Inc., Exterran Corporation, Franklin Electric Co., Inc., Harsco Corporation, IDEX Corporation, ITT Inc., New Fortress Energy LLC, NIKKISO CO., LTD., Plug Power Inc., SPX Corporation and Worthington Industries, Inc., which have similar industrial manufacturing profiles and serve industries closer in similarity than our 2020 Peer Group Index.

The 2020 Peer Group Index was comprised of Acuity Brands, Inc., Barnes Group Inc., Circor International, Inc., Colfax Corp., Enpro Industries Inc., Esco Technologies Inc., Graco Inc., Harsco Corporation, IDEX Corp., Nordson Corporation, SPX Corporation and Worthington Industries, Inc. In accordance with SEC rules, both the 2020 Peer Group and 2021 Peer Group are represented in the graph above.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

Period	Issuer Purchases of Equity Securities			
	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid Per Share ⁽¹⁾	Total Number of Shares Purchased As Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs
October 1 — 31, 2021	—	\$ —	—	\$ —
November 1 — 30, 2021	34	182.00	—	—
December 1 — 31, 2021	21,444	156.90	—	—
Total	21,478	\$ 156.94	—	\$ —

⁽¹⁾ Includes shares of common stock surrendered to us during the fourth quarter of 2021 by participants under our share-based compensation plans to satisfy tax withholding obligations relating to the vesting or payment of equity awards for an aggregate purchase price of approximately \$3,370,800. The total number of shares repurchased represents the net shares issued to satisfy tax withholding. All such repurchased shares were subsequently retired during the three months ended December 31, 2021.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion of our results of operations and financial condition should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements. Actual results may differ materially from those discussed below. See "Forward-Looking Statements" at the end of this discussion and Item 1A. "Risk Factors" for a discussion of the uncertainties, risks and assumptions associated with this discussion.

Overview

We are a leading independent global manufacturer of highly engineered cryogenic equipment servicing multiple applications in the industrial gas and clean energy markets. Our unique product portfolio is used in every phase of the liquid gas supply chain, including upfront engineering, service and repair. Being at the forefront of the clean energy transition, Chart is a leading provider of technology, equipment and services related to liquefied natural gas, hydrogen, biogas, CO₂ Capture and water treatment, among other applications. We are committed to excellence in environmental, social and corporate governance (ESG) issues both for our company as well as our customers. With over 25 global manufacturing locations including in the United States, Europe, China, India, Australia and South America, we maintain accountability and transparency to our team members, suppliers, customers and communities.

Macroeconomic Impacts

Despite strong order and backlog growth, supply chain, labor and logistics issues weighed on business in the third and fourth quarters of 2021, in particular on the gross margin line as our series of price increases were not able to completely keep pace with rapidly accelerating material costs, freight, logistics and backlog timing. Furthermore, the uncertainty associated with the coronavirus (Covid-19) pandemic remains, which we continue to actively monitor in terms of its impact on our results of operations beyond 2021. The extent to which our operations will be impacted by the Covid-19 pandemic will largely depend on future developments, which are highly uncertain and cannot be accurately predicted, including new information which may emerge concerning the severity or resurgence of the Covid-19 virus and its variants and actions by government authorities to contain the pandemic or treat its impact, among other things.

Environmental, Social, Governance

Chart is proud to be at the forefront of the clean energy transition as a leading provider of technology, equipment and services related to liquefied natural gas, hydrogen, biogas, carbon capture and water treatment, among other applications. We also captured as our unique offering for the "Nexus of Clean" clean power, clean water, clean food and clean industrials. This leadership position is possible not only because we have the broadest offering of clean innovative solutions for the various end markets we serve, but also because we are committed to global responsibility. Reporting our Environmental, Social, Governance ("ESG") performance is one of the ways we demonstrate accountability and transparency to our team members, suppliers, customers, shareholders and communities. Below are some highlights of our ESG efforts, and further information can be found in our second Annual Sustainability report with scorecard which was released in April 2021. We intend to release our third annual sustainability report in April 2022.

- We reported a 0.80 Total Recordable Incident Rate (TRIR) for the year ended December 31, 2021, with emphasis on safety as our #1 priority and focus on all team members being empowered and authorized to stop work if they see an unsafe or potentially unsafe situation.
- We reported no recordable incidents at any Chart location in December 2021.
- We measure progress through Sustainability Accounting Standards Board (SASB) and Task Force on Climate-Related Financial Disclosures (TCFD) indices, as well as contributing to the Global Reporting Initiative (GRI) and United Nations Sustainable Development Goals (SDGs).
- We utilize Riskmethods analytics to proactively monitor our supply chain for proper governance in our supplier network including their climate targets and other ESG activities.
- We have a Global ESG Committee, Global Safety Council, and Global Diversity & Inclusion Committee, all comprised of team member volunteers and engagement from every one of our global locations.
- Our Global ESG Committee has five sub-committees focused on energy management, zero waste, electrification, renewable energy and water management.
- We have recently entered into a cutting-edge sustainability-linked banking agreement with covenants tied to our Green House Gas ("GHG") emission reductions' actual performance.

- We have set a target to reduce our carbon intensity 30% by 2030 and have specific initiatives in place to help us meet this goal. In 2020, we made progress towards achieving our target by reducing GHG Intensity by almost 6.0% year-over-year.
- In terms of lowering our own emissions, we made plant improvements including energy efficient upgrades for various equipment, replacing diesel powered equipment with electric and installing LED lighting in office spaces. In 2020, Chart reduced Scope 1 and Scope 2 emissions by 8.5% and 8.9%, respectively, while reducing total energy consumption by almost 16.0%.
- We are our helping customers to achieve their own sustainability targets in a number of different ways whether that's through reducing the amount of plastic used in packaging to lowering greenhouse gas emissions by enabling the transition towards cleaner fuels.
- We have an independent Board of Directors that is comprised of nine directors (four of our nine directors are female and five of our nine are diverse) and governed with a separate Chairman and CEO.
- We hold regular meetings on the topic and reviews with our Board of Directors.
- We link our executives and their direct reports short-term incentive payout (25% of the strategic and operational goals) to a metric driven, percentage-reduction ESG metric, and have done this for two years.
- Our team volunteers in their communities with a focus on supporting children and families, ending hunger and improving health. In 2020, we donated over 4,000 masks in addition to medical oxygen equipment to respond to the Covid-19 pandemic. We offer every team member worldwide one paid day off each year to volunteer in our communities, and we donated over \$120,000 to charities in the communities we work in during the 2021 year.
- We have an employee relief fund for our own team members that need assistance.
- Our team members raised over \$30,000 to support women adversely affected by the COVID-19 pandemic through Dress For Success.
- In 2021, we received the following ESG-oriented recognition:
 - World LNG Award for Energy Transition 2021 Finalist
 - Gastech 2021 Emission Reduction Champion – Organization of the Year Award Winner
 - Gastech 2021 Organisation Championing Diversity & Inclusion Finalist
 - Gastech 2021 Engineering Partnership of the Year Finalist
 - S&P Global Platts Energy Awards Excellence in LNG Finalist (2021)
 - S&P Global Platts Energy Awards Corporate Social Responsibility (Diversified) Award Finalist (2021)

2021 Highlights

Being at the forefront of the clean energy transition, Chart is a leading provider of technology, equipment and services related to liquefied natural gas, hydrogen, biogas, carbon capture and water treatment, among other applications. During 2021, we continued to invest organically and inorganically for capacity, automation and manufacturing optimization as well as in the “Nexus of Clean.” We executed on a number of investments and acquisitions in 2021 to capitalize on clean energy market opportunities. In the first quarter of 2021, we acquired Cryogenic Gas Technologies, Inc. (“Cryo Technologies”), to grow our presence in liquefaction technology for the clean power market. During the third quarter of 2021, we closed on L.A. Turbine, a global leader in turboexpanders. We also acquired AdEdge Holdings, LLC (“AdEdge”) during the third quarter in order to grow our presence in the clean water market. Our ChartWater™ platform, consisting of AdEdge and BlueInGreen process technologies with Chart equipment, posted record orders, backlog and sales in both the fourth quarter 2021 as well as the full year of 2021 and has been a leading acquisition for synergy achievement in the first year of ownership. During the fourth quarter of 2021, we completed the immediately accretive acquisition of Earthly Labs Inc. (“Earthly Labs”), a leading provider of small-scale carbon capture systems for use in municipal, agriculture and food & beverage applications.

Strong order activity contributed to record ending total backlog of \$1,190.1 million as of December 31, 2021 compared to \$810.0 million as of December 31, 2020 representing an increase of \$380.1 million or 46.9%, which reflects the broad-based demand we continue to see year-over-year across our product categories. The increase in backlog was largely driven by record orders as of December 31, 2021 of \$1,676.1 million compared to \$1,210.1 million as of December 31, 2020 representing an increase of \$466.0 million or 38.5%. Strong orders in our Specialty Products and Cryo Tank Solutions segments were mainly driven by the combination of larger liquefaction orders for LNG, hydrogen and helium as well as orders in distribution and storage, HLNG vehicle tanks, LNG regasification, laser applications, food & beverage applications, storage equipment and mobile equipment.

Consolidated sales increased to a record \$1,317.7 million in 2021 from \$1,177.1 million in 2020, representing an increase of \$140.6 million or 11.9% (6.0% organically), which was mainly driven by our Specialty Products, Cryo Tank Solutions and

Repair, Service & Leasing segments. This increase was partially offset by lower sales in our Heat Transfer Systems segment mainly due to higher sales driven in 2020 relative to Venture Global's Calcasieu Pass LNG export terminal project ("Calcasieu Pass"). However, we continue to see signs of a slight recovery in market conditions within this segment as indicated by an increase in customer order activity and inquiry. Specialty Products segment record sales of \$432.9 million in 2021 compared to \$242.6 million in 2020 represents an increase of \$190.3 million or 78.4% (52.8% organically), driven by favorable sales in hydrogen and helium applications, HLNG vehicle tanks, water treatment equipment sales and food & beverage applications. This increase was bolstered by sales from the acquisitions mentioned above. Consolidated gross profit decreased during 2021 compared to 2020 by \$7.9 million or 2.4%, and 2021 gross profit margin of 24.6% decreased from 28.2% in 2020. The decrease in gross profit margin compared to 2020 was primarily driven by higher material prices due to market conditions for all segments overall as discussed in the macroeconomic impacts section above, the related strategic move to carry a higher level of raw materials in inventory in order to alleviate potential supply shortages, and Calcasieu Pass volume mix which drove higher margins in 2020 in our Heat Transfer Systems segment.

Outlook

Considering our record order year in 2021, record order quarter in the fourth quarter 2021 and record backlog as of December 31, 2021, as well as visibility to our strongest ever commercial pipeline of potential work, we expect significant year-over-year sales growth. This positive outlook does not include any additional or new Big LNG projects (although orders are expected in the first half of 2022), yet it does include the impact of engineering work which began for two Big LNG projects as well as our onsite process engineering work at Venture Global Calcasieu Pass. We anticipate the first half of 2022 will include a margin drag from historical levels from the macro challenges but increasingly offset in each of the first two quarters of 2022 by the positive impact from actions we have taken to date.

Capacity and productivity organic investments are being made, which is reflected in our higher than maintenance capital expenditure outlook for 2022. We anticipate spending approximately \$50 million to \$55 million in capital expenditures in 2022, driven by investments in replicating production lines in strategic locations as well as implementing additional automation across our factories, which has been underway but we are investing to accelerate.

Operating Results

The following table sets forth the percentage relationship that each line item in our consolidated statements of income represents to sales for the years ended December 31, 2021, 2020 and 2019 (dollars in millions):

	2021	2020	2019
Sales	100.0 %	100.0 %	100.0 %
Cost of sales ⁽¹⁾	75.4	71.8	75.5
Gross profit	24.6	28.2	24.5
Selling, general and administrative expenses ^{(2) - (5)}	14.9	15.1	16.9
Amortization expense	3.0	3.9	3.3
Asset impairments ⁽⁶⁾	—	1.4	—
Operating income	6.7	7.8	4.3
Interest expense, net ⁽⁷⁾	0.8	1.5	1.2
Financing costs amortization ⁽⁸⁾	0.6	0.4	0.2
Unrealized gain on investment in equity securities	(0.2)	(1.1)	—
Realized gain on investment in equity securities	(0.2)	—	—
Foreign currency loss	0.1	0.1	—
Gain on bargain purchase	—	(0.4)	—
Other expense	—	0.2	—
Income tax expense, net	1.0	1.3	0.2
Net income from continuing operations	4.6	6.0	2.6
Income from discontinued operations, net of tax	—	20.3	1.2
Net income	4.6	26.3	3.9
Income attributable to noncontrolling interests, net of taxes	0.1	0.1	—
Net income attributable to Chart Industries, Inc.	4.5	26.2	3.8

⁽¹⁾ Cost of sales includes restructuring costs of \$2.6, \$5.7 and \$12.2 for the years ended December 31, 2021, 2020 and 2019, respectively.

⁽²⁾ Selling, general and administrative expenses includes restructuring costs of \$0.9, \$7.9 and \$3.4 for the years ended December 31, 2021, 2020 and 2019, respectively.

⁽³⁾ Includes transaction-related costs of \$2.5, \$2.6 and \$5.4 for the years ended December 31, 2021, 2020 and 2019, respectively.

⁽⁴⁾ Includes transaction-related costs of \$2.8 and \$4.3 related to integration activities for previous acquisitions for the years ended December 31, 2021 and 2019, respectively.

⁽⁵⁾ Includes share-based compensation expense of \$11.2, \$8.6 and \$8.8, representing 0.8%, 0.7% and 0.7% of sales, for the years ended December 31, 2021, 2020 and 2019, respectively.

⁽⁶⁾ Includes \$16.0 impairment of our trademarks and trade names indefinite-lived intangible assets related to the AXC business in our Heat Transfer Systems segment for the year ended December 31, 2020.

⁽⁷⁾ Includes \$8.0 and \$7.6 of non-cash interest accretion expense related to the carrying amount of the 1.00% Convertible Senior Subordinated Notes due November 2024 (the "2024 Notes"), representing 0.7% and 0.6% of sales for the years ended December 31, 2020 and 2019, respectively.

⁽⁸⁾ In conjunction with the amendment of our credit facilities, we recognized charges of \$4.1 in unamortized debt issuance cost write offs associated with previous credit facilities and new debt issuance costs, which are classified as financing costs amortization in our consolidated income statement for the year ended December 31, 2021.

Consolidated Results for the Years Ended December 31, 2021, 2020 and 2019

The following table includes key metrics used to evaluate our business and measure our performance and represents selected financial data for our operating segments for the years ended December 31, 2021, 2020 and 2019 (dollars in millions). Further detailed information regarding our operating segments is presented in Note 4, "Segment and Geographic Information," of the consolidated financial statements included under Item 15 "Exhibits and Financial Statement Schedules" of this Annual Report on Form 10-K.

Selected Segment Financial Information

	Year Ended December 31,		
	2021	2020	2019
Sales			
Cryo Tank Solutions	\$ 447.4	\$ 415.8	\$ 409.9
Heat Transfer Systems	262.7	369.8	441.7
Specialty Products	432.9	242.6	207.9
Repair, Service & Leasing	187.0	158.3	162.6
Intersegment eliminations	(12.3)	(9.4)	(6.6)
Consolidated	\$ 1,317.7	\$ 1,177.1	\$ 1,215.5
Gross Profit			
Cryo Tank Solutions	\$ 93.5	\$ 99.5	\$ 77.2
Heat Transfer Systems	35.6	93.7	94.1
Specialty Products	145.5	84.3	72.2
Repair, Service & Leasing	49.6	54.6	54.0
Consolidated	\$ 324.2	\$ 332.1	\$ 297.5
Gross Profit Margin			
Cryo Tank Solutions	20.9 %	23.9 %	18.8 %
Heat Transfer Systems	13.6 %	25.3 %	21.3 %
Specialty Products	33.6 %	34.7 %	34.7 %
Repair, Service & Leasing	26.5 %	34.5 %	33.2 %
Consolidated	24.6 %	28.2 %	24.5 %
SG&A Expenses			
Cryo Tank Solutions	\$ 38.1	\$ 41.7	\$ 45.9
Heat Transfer Systems	28.1	36.6	51.4
Specialty Products	43.3	22.2	22.4
Repair, Service & Leasing	17.8	15.3	18.6
Corporate	69.5	62.4	67.4
Consolidated	\$ 196.8	\$ 178.2	\$ 205.7
SG&A Expenses (% of Sales)			
Cryo Tank Solutions	8.5 %	10.0 %	11.2 %
Heat Transfer Systems	10.7 %	9.9 %	11.6 %
Specialty Products	10.0 %	9.2 %	10.8 %
Repair, Service & Leasing	9.5 %	9.7 %	11.4 %
Consolidated	14.9 %	15.1 %	16.9 %
Operating Income (Loss) ⁽¹⁾			
Cryo Tank Solutions	\$ 52.9	\$ 52.5	\$ 25.7
Heat Transfer Systems ⁽²⁾	(12.3)	11.2	17.7
Specialty Products	94.1	60.7	48.1
Repair, Service & Leasing	23.3	30.3	27.9
Corporate ⁽³⁾⁽⁴⁾	(69.5)	(62.5)	(67.4)
Consolidated	\$ 88.5	\$ 92.2	\$ 52.0

Operating Margin			
Cryo Tank Solutions	11.8 %	12.6 %	6.3 %
Heat Transfer Systems	(4.7)%	3.0 %	4.0 %
Specialty Products	21.7 %	25.0 %	23.1 %
Repair, Service & Leasing	12.5 %	19.1 %	17.2 %
Consolidated	6.7 %	7.8 %	4.3 %

(1) Restructuring costs for the years ended:

- December 31, 2021 were \$3.5 (\$0.3 – Cryo Tank Solutions, \$1.7 – Heat Transfer Systems and \$1.5 – Repair, Service & Leasing);
- December 31, 2020 were \$13.6 (\$2.7 – Cryo Tank Solutions, \$7.4 – Heat Transfer Systems, \$0.7 – Specialty Products, \$0.2 – Repair, Service & Leasing and \$2.6 – Corporate); and
- December 31, 2019 were \$15.6 (\$9.1 – Cryo Tank Solutions, \$4.5 – Heat Transfer Systems, \$0.3 – Specialty Products, \$1.5 – Repair, Service & Leasing and \$0.2 – Corporate).

(2) Includes \$16.0 impairment of our trademarks and trade names indefinite-lived intangible assets related to the AXC business in our Heat Transfer Systems segment for the year ended December 31, 2020.

(3) Includes transaction-related costs of \$2.5, \$2.6 and \$5.4 for the years ended December 31, 2021, 2020 and 2019 respectively.

(4) Includes transaction-related costs of \$2.8 and \$4.3 related to integration activities for previous acquisitions for the years ended December 31, 2021 and 2019, respectively.

Results of Operations for the Years Ended December 31, 2021 and 2020

Sales in 2021 increased by \$140.6 million (\$70.9 million organically), from \$1,177.1 million to a record \$1,317.7 million, or 11.9%. This increase was primarily driven by growth in our Specialty Products segment on favorable sales in hydrogen and helium applications, HLNG vehicle tanks, water treatment equipment sales and food & beverage applications, within our Cryo Tank Solutions segment on favorable sales in mobile equipment, engineered tanks and storage systems, and within our Repair, Service & Leasing segment on favorable sales in our leasing business. This increase was partially offset by the continued softness in demand for midstream and upstream compression equipment and timing of sales recognized relative to Calcasieu Pass within our Heat Transfer Systems segment.

Gross profit in 2021 decreased by \$7.9 million (\$32.6 million decrease organically) from \$332.1 million to \$324.2 million or 2.4% compared to 2020. Gross profit margin of 24.6% in 2021 decreased from 28.2% in 2020. The decrease in gross profit margin for 2021 compared to 2020 was primarily driven by macroeconomic conditions as our price increases lagged more than the anticipated rapidly accelerating material prices and freight costs for all segments overall and Calcasieu Pass volume mix which drove higher margins in 2020 in our Heat Transfer Systems segment, partially offset by higher gross profit margins within certain recently acquired businesses. Restructuring costs recorded to cost of sales were \$2.6 million and \$5.7 million for the years ended December 31, 2021 and 2020, respectively.

Consolidated SG&A expenses increased by \$18.6 million or 10.4% during 2021 compared to the same period in 2020 primarily driven by a ramp up in our Specialty Products business which drove higher SG&A expenses in the segment, SG&A expenses related to recent acquisitions and higher share-based compensation expense in Corporate, partially offset by lower SG&A expenses in our Heat Transfer Systems segment due to lower employee-related costs and in our Cryo Tank Solutions segment due to a \$2.6 million gain on sale of a facility in China included in SG&A expenses for the year ended December 31, 2020. Furthermore, lower restructuring costs were recorded to consolidated SG&A expenses, which were \$0.1 million and \$2.4 million for the years ended December 31, 2021 and 2020, respectively.

Asset Impairments

We recorded an impairment loss of \$16.0 million during 2020 relative to our \$55.0 million trademarks and trade names indefinite-lived intangible asset of our AXC business (“AXC Intangible Asset”) in our Heat Transfer Systems segment. Industry-wide softness in demand for midstream and upstream compression equipment represented impairment indicators requiring us to re-evaluate the fair value of the AXC Intangible Asset. We determined the fair value of the AXC Intangible Asset under the relief-from-royalty method and conducted an impairment test as defined in the Critical Accounting Estimates

section. We determined that the fair value of the AXC Intangible Asset was \$39.0 million and impaired the AXC Intangible Asset by a value equal to the difference in the carrying amount and calculated fair value.

Interest Expense, Net and Financing Costs Amortization

Interest expense, net for the year ended December 31, 2021 and 2020 was \$10.7 million and \$17.7 million, respectively. The decrease in interest expense, net, is primarily due to lower borrowings outstanding on our term loan due June 2024 during 2021 as compared to 2020. Furthermore, we no longer recognize interest accretion of convertible notes discount due to a change in accounting principle adopted at the beginning of fiscal year 2021 whereas we recognized \$8.0 million in interest accretion expense in 2020. For further information regarding the change in accounting principle, refer to Note 2, “Significant Accounting Policies” in this report. Interest expense, net for both the years ended December 31, 2021 and 2020 included \$2.6 million of 1.0% cash interest and \$9.0 million and \$7.0 million in interest related to borrowings on our previous and current senior secured revolving credit facility, respectively.

For 2021 and 2020, financing costs amortization was \$8.3 million and \$4.3 million, respectively. The increase of \$4.0 million was primarily due to the amendment of our credit facilities during the fourth quarter of 2021 and the related write off of the unamortized deferred debt issuance costs associated with the senior secured revolving credit facility due June 2024 and the term loan due June 2024, respectively. In conjunction with the amendment of our credit facilities, we recorded charges to net income of \$3.8 million of the unamortized deferred debt issuance costs associated with the senior secured revolving credit facility due 2024 and the term loan due June 2024 as well as \$0.3 million in new debt issuance costs associated with the Amended Credit Agreement resulting in a total one-time charge to net income of \$4.1 million.

Unrealized (Gain) Loss On Investments In Equity Securities

During 2021, we recognized an unrealized gain on investments in equity securities of \$3.2 million, which was driven by an unrealized gain of \$20.7 million upon remeasurement of the initial HTEC investment due to an observable price change in an orderly transaction for similar instruments of the same issuer and a \$2.2 million unrealized gain on the mark-to-market adjustment of our investment in Stabilis, partially offset by a \$19.7 million unrealized loss on the mark-to-market adjustment of our investment in McPhy (Euronext Paris: MCPHY - ISIN: FR0011742329). During 2020, we recognized an unrealized gain of \$17.0 million on the mark-to-market adjustment of our investment in McPhy, partially offset by a \$2.9 million unrealized loss on the mark-to-market adjustment of our investment in Stabilis.

Realized Gain on Investments In Equity Securities

On December 14, 2021 we completed the acquisition of the remaining 85% of the shares of Earthly Labs. On the acquisition date, we recognized a gain of \$2.6 million on the remeasurement of our initial 15% investment, which is recorded as realized gain on investment in equity securities in the consolidated statement of income for the year ended December 31, 2021.

Foreign Currency Loss (Gain)

Foreign currency losses were \$0.9 million in both of the years ended December 31, 2021 and 2020. Foreign currency fluctuates due to exchange rate volatility, especially with respect to the euro and Chinese yuan.

Gain Bargain Purchase

As a result of the October 13, 2020 Alabama Trailers acquisition, we recorded a bargain purchase gain of \$5.0 million for the year ended December 31, 2020.

Income Tax Expense

Income tax expense of \$13.5 million and \$14.9 million for the years ended December 31, 2021 and 2020, respectively, represents taxes on both U.S. and foreign earnings at a combined effective income tax rate of 18.2% and 17.5%, respectively. The effective income tax rate of 18.2% for the year ended December 31, 2021 differed from the U.S. federal statutory rate of 21% due primarily to tax benefits associated with share-based compensation and the release of previously booked valuation allowances offset by the effect of income earned by certain of our foreign entities being taxed at higher rates than the federal statutory rate as well as increases in our state taxes due to expansion into new jurisdictions.

The effective income tax rate of 17.5% for the year ended December 31, 2020 differed from the U.S. federal statutory rate of 21% primarily due to tax benefits associated with share-based compensation and the Alabama Trailers bargain purchase gain offset by the effect of income earned by certain of our foreign entities being taxed at higher rates than the federal statutory rate as well as losses incurred by certain of our Chinese operations for which no benefit was recorded.

Net Income Attributable to Chart Industries, Inc. From Continuing Operations

As a result of the foregoing, net income attributable to Chart Industries, Inc. from continuing operations was \$59.1 million and \$68.9 million for 2021 and 2020, respectively.

Discontinued Operations

The financial results of our cryobiological products business formerly reported in our D&S West segment are reflected in our consolidated financial statements as discontinued operations for periods prior to 2021. For further information, refer to Note 3, "Discontinued Operations."

Results of Operations for the Years Ended December 31, 2020 and 2019

Sales in 2020 decreased by \$38.4 million from \$1,215.5 million to \$1,177.1 million, or 3.2%. Heat Transfer Systems segment sales decreased by \$71.9 million during 2020 as compared to 2019 primarily due to an industry-wide softness in demand for midstream and upstream compression equipment. This decrease within the Heat Transfer Systems segment was partially offset by revenue contributions from the continued execution of our backlog on big LNG, including Venture Global's Calcasieu Pass LNG export terminal project and other petrochemical applications and our Specialty Products segment where sales increased by \$34.7 million as compared to 2019 primarily driven by favorable sales in hydrogen equipment and H LNG vehicle tanks.

Gross profit in 2020 increased by \$34.6 million from \$297.5 million to \$332.1 million or 11.6% compared to 2019. Gross profit as a percentage of sales increased within each of our four segments in 2020 as compared to 2019 primarily as a result of ongoing cost structure improvement across the global organization, the impact of higher restructuring costs in 2019 within our Cryo Tank Solutions segment and product mix, especially where Venture Global's Calcasieu Pass LNG export terminal project drove higher margins in our Heat Transfer Systems segment.

SG&A expenses decreased by \$27.5 million, or 13.4% in 2020 compared to 2019 across multiple SG&A categories primarily as a result of cost reduction initiatives. During 2020, we implemented certain cost reduction actions across all segments and corporate to appropriately size our workforce with demand as well as eliminate redundant work. Costs were primarily related to headcount reductions. These actions resulted in total restructuring costs of \$13.6 million for the year ended December 31, 2020, consisting of mainly employee severance costs. During 2020, costs to transfer operations of our heat exchanger leased facility in Tulsa, Oklahoma to our Beasley, Texas location at which we own 260 acres of land were \$2.7 million. These costs were associated with severance, relocation and moving expenses. This was a cost reduction measure within our Heat Transfer Systems segment to structure the business for profitable growth in equipment for midstream and upstream energy applications.

During 2019, we implemented certain cost reduction or avoidance actions, including facility consolidations at certain of our U.S. properties, and a streamlining of the commercial activities surrounding our Lifecycle business in our Repair, Service & Leasing segment, geographic realignment of our manufacturing capacity and a facility closure in Asia, as well as departmental restructuring, including headcount reductions in each of our four segments. These actions resulted in total restructuring costs of \$15.6 million, consisting of employee severance costs, disposals of property, plant and equipment and other costs. Restructuring costs for 2019 reflect a \$1.6 million credit to Repair, Service & Leasing segment restructuring costs recorded in the second quarter of 2019 due to the successful negotiation of a lease termination for a facility for our previous Lifecycle business. These restructuring activities were substantially completed by the end of 2019.

Asset Impairments

As discussed in the Results of Operations for the Years Ended December 31, 2021 and 2020 section above, we recorded an impairment loss of \$16.0 million during 2020 relative to our AXC Intangible Asset.

Interest Expense, Net and Financing Costs Amortization

Interest expense, net for the year ended December 31, 2020 and 2019 was \$17.7 million and \$14.7 million, respectively. Interest expense, net for the year ended December 31, 2020 included \$2.6 million of 1.0% cash interest and \$8.0 million of non-cash interest accretion expense related to the carrying value of the convertible notes due 2024, and \$7.0 million in interest related to borrowings on our previous senior secured revolving credit facility and term loan. For 2020 and 2019, financing costs amortization was \$4.3 million and \$3.0 million, respectively. The increase of \$1.3 million was primarily due to recognition of a full year of financing costs amortization related to the term loan in 2020 as compared to six months of financing costs amortization recognized in 2019.

Foreign Currency Loss (Gain)

For 2020, foreign currency losses were \$0.9 million as compared to foreign currency gains of \$0.4 million for 2019. Losses increased by \$1.3 million during 2020 due to exchange rate volatility, especially with respect to the euro and Chinese yuan.

Gain on Bargain Purchase

As discussed in the Results of Operations for the Years Ended December 31, 2021 and 2020 section above, we recorded a bargain purchase gain of \$5.0 million for the year ended December 31, 2020 as a result of the Alabama Trailers acquisition.

Unrealized (Gain) Loss on Investment in Equity Securities

The unrealized gain on investment in equity securities was \$13.1 million in 2020 as compared to the unrealized loss on investment in equity securities of \$0.1 million in 2019. Gains increased by \$13.2 million primarily due to a \$17.0 million unrealized gain on the mark-to-market adjustment of our investment in McPhy (Euronext Paris: MCPHY – ISIN: FR0011742329), partially offset by a \$2.9 million unrealized loss on the mark-to-market adjustment of our investment in Stabilis.

Income Tax Expense

Income tax expense of \$14.9 million and \$2.8 million for the years ended December 31, 2020 and 2019, respectively, represents taxes on both U.S. and foreign earnings at a combined effective income tax rate of 17.5% and 8.1%, respectively. As discussed in the Results of Operations for the Years Ended December 31, 2021 and 2020 section above, the effective income tax rate of 17.5% for the year ended December 31, 2020 differed from the U.S. federal statutory rate of 21% primarily due to tax benefits associated with share-based compensation and the Alabama Trailers bargain purchase gain offset by the effect of income earned by certain of our foreign entities being taxed at higher rates than the federal statutory rate as well as losses incurred by certain of our Chinese operations for which no benefit was recorded.

The effective income tax rate of 8.1% for the year ended December 31, 2019 differed from the U.S. federal statutory rate of 21% primarily due to tax benefits related to certain share-based compensation, partially offset by the effect of income earned by certain of our foreign entities being taxed at higher rates than the federal statutory rate as well as losses incurred by certain of our Chinese operations for which no benefit was recorded.

Net Income Attributable to Chart Industries, Inc. From Continuing Operations

As a result of the foregoing, net income from continuing operations attributable to Chart was \$68.9 million and \$31.4 million for 2020 and 2019, respectively.

Segment Results for the Years Ended December 31, 2021, 2020 and 2019

Our reportable and operating segments include: Cryo Tank Solutions, Heat Transfer Systems, Specialty Products and Repair, Service & Leasing. Corporate includes operating expenses for executive management, accounting, tax, treasury, corporate development, human resources, information technology, investor relations, legal, internal audit, and risk management. Corporate support functions are not currently allocated to the segments. For further information, refer to Note 4, “Segment and Geographic Information” of our consolidated financial statements included under Item 15, “Exhibits and Financial Statement Schedules” of this Annual Report on Form 10-K. The following tables include key metrics used to evaluate our business and measure our performance and represents selected financial data for our operating segments for the years ended December 31, 2021, 2020 and 2019 (dollars in millions):

Cryo Tank Solutions—Results of Operations for the Years Ended December 31, 2021 and 2020

	Year Ended December 31,		2021 vs. 2020	
	2021	2020	Variance (\$)	Variance (%)
Sales	\$ 447.4	\$ 415.8	\$ 31.6	7.6 %
Gross Profit	93.5	99.5	(6.0)	(6.0) %
Gross Profit Margin	20.9 %	23.9 %		
SG&A Expenses	\$ 38.1	\$ 41.7	\$ (3.6)	(8.6) %
SG&A Expenses (% of Sales)	8.5 %	10.0 %		
Operating Income	\$ 52.9	\$ 52.5	\$ 0.4	0.8 %
Operating Margin	11.8 %	12.6 %		

Cryo Tank Solutions segment sales increased by \$31.6 million during 2021 as compared to 2020. As mentioned in the results of operations above, this increase was mainly driven by higher sales in mobile equipment, engineered tanks and storage systems with strong performance in China, India and Germany.

Cryo Tank Solutions segment gross profit decreased by \$6.0 million during 2021 as compared to 2020, and gross profit margin decreased by 300 basis points. The decrease in gross profit and gross profit margin was mainly driven by higher material prices and higher labor costs due to macroeconomic conditions.

Cryo Tank Solutions SG&A expenses decreased during 2021 as compared to 2020. Furthermore, Cryo Tank Solutions segment SG&A expenses as a percentage of Cryo Tank Solutions segment sales improved by 150 basis points in 2021 as compared to 2020. Cryo Tank Solutions SG&A expenses for the year ended December 31, 2020 include a \$2.6 million gain on sale of a facility in China. Additionally, restructuring expenses were \$0.3 million in 2021 as compared to \$2.3 million in 2020.

Cryo Tank Solutions—Results of Operations for the Years Ended December 31, 2020 and 2019

	Year Ended December 31,		2020 vs. 2019	
	2020	2019	Variance (\$)	Variance (%)
Sales	\$ 415.8	\$ 409.9	\$ 5.9	1.4 %
Gross Profit	99.5	77.2	22.3	28.9 %
Gross Profit Margin	23.9 %	18.8 %		
SG&A Expenses	\$ 41.7	\$ 45.9	\$ (4.2)	(9.2) %
SG&A Expenses (% of Sales)	10.0 %	11.2 %		
Operating Income	\$ 52.5	\$ 25.7	\$ 26.8	104.3 %
Operating Margin	12.6 %	6.3 %		

Cryo Tank Solutions segment sales increased by \$5.9 million during 2020 as compared to 2019 primarily due to higher volume in engineered tanks in the U.S. and higher mobile equipment sales in China, partially offset by lower sales in storage equipment in the U.S. mainly driven by business disruptions where certain of our large customers shut down production temporarily due to the Covid-19 pandemic earlier in the year.

Cryo Tank Solutions segment gross profit increased by \$22.3 million during 2020 as compared to 2019. This increase in gross profit was mainly attributable to increased volume efficiencies related to our mobile equipment product lines in China and in our VRV business and one-time restructuring costs in China during 2019. The increase in gross profit margin was primarily

driven by restructuring costs in 2019 and favorable product mix as our Cryo Tank Solutions segment operations in Europe and China gained better leverage on increased volume. This increase was partially offset by unfavorable product mix relative to engineered systems related to our U.S. Cryo Tank Solutions segment operations.

Cryo Tank Solutions segment SG&A expenses decreased during 2020 as compared to 2019 primarily driven by lower employee-related costs as a result of cost reduction actions. Restructuring expenses were \$2.3 million in 2020 as compared to \$1.1 million in 2019. As previously noted, Cryo Tank Solutions SG&A expenses for the year ended December 31, 2020 include a \$2.6 million gain on sale of a facility in China.

Heat Transfer Systems—Results of Operations for the Years Ended December 31, 2021 and 2020

	Year Ended December 31,		2021 vs. 2020	
	2021	2020	Variance (\$)	Variance (%)
Sales	\$ 262.7	\$ 369.8	\$ (107.1)	(29.0)%
Gross Profit	35.6	93.7	(58.1)	(62.0)%
Gross Profit Margin	13.6 %	25.3 %		
SG&A Expenses	\$ 28.1	\$ 36.6	\$ (8.5)	(23.2)%
SG&A Expenses (% of Sales)	10.7 %	9.9 %		
Operating (Loss) Income	\$ (12.3)	\$ 11.2	\$ (23.5)	(209.8)%
Operating Margin	(4.7)%	3.0 %		

Heat Transfer Systems segment sales decreased by \$107.1 million during 2021 as compared to 2020. During 2021, we recognized \$20.1 million in sales relative to Calcasieu Pass as compared to \$97.7 million in 2020. As mentioned in the results of operations above, we are experiencing industry-wide softness in demand for midstream and upstream compression equipment. However, we continue to see a slight recovery in market conditions as indicated by an increase in customer order activity and inquiry.

Heat Transfer Systems segment gross profit decreased by \$58.1 million during 2021 compared to 2020, and gross profit margin decreased by 1,170 basis points driven by lower volume, partially offset by lower restructuring costs. The decrease in Heat Transfer Systems segment gross profit was primarily due to overall product and project volume mix, including Calcasieu Pass, which drove higher gross profit margin in 2020.

Heat Transfer Systems segment SG&A expenses decreased by \$8.5 million during 2021 as compared to 2020 mainly due to lower restructuring costs and lower employee-related costs.

Heat Transfer Systems operating income decreased by \$23.5 million during 2021 as compared to 2020 due to industry-wide softness in demand for midstream and upstream compression equipment and overall product and project volume mix, including Calcasieu Pass. During 2020, we recorded an impairment loss of \$16.0 million to our AXC Intangible Asset.

Heat Transfer Systems—Results of Operations for the Years Ended December 31, 2020 and 2019

	Year Ended December 31,		2020 vs. 2019	
	2020	2019	Variance (\$)	Variance (%)
Sales	\$ 369.8	\$ 441.7	\$ (71.9)	(16.3)%
Gross Profit	93.7	94.1	(0.4)	(0.4)%
Gross Profit Margin	25.3 %	21.3 %		
SG&A Expenses	\$ 36.6	\$ 51.4	\$ (14.8)	(28.8)%
SG&A Expenses (% of Sales)	9.9 %	11.6 %		
Operating Income	\$ 11.2	\$ 17.7	\$ (6.5)	(36.7)%
Operating Margin	3.0 %	4.0 %		

Heat Transfer Systems segment sales decreased by \$71.9 million during 2020 as compared to 2019 primarily due to an industry-wide softness in demand for midstream and upstream compression equipment. This decrease was partially offset by revenue contributions from the continued execution of our backlog on big LNG, including Venture Global's Calcasieu Pass LNG export terminal project and other petrochemical applications. As of the beginning of 2020, our previous Cooler Service air cooled heat exchanger facility in Tulsa was closed, and its operations were combined with our AXC operations.

Heat Transfer Systems segment gross profit decreased by \$0.4 million during 2020 as compared to 2019 while gross profit margin increased by 400 basis points. Gross profit as a percentage of sales increased mainly due to mix where Venture Global's Calcasieu Pass LNG export terminal project drove higher margins.

Heat Transfer Systems segment SG&A expenses decreased by \$14.8 million during 2020 as compared to 2019 primarily driven by general reductions across most SG&A categories, especially employee-related costs in light of restructuring actions taken during the period.

Heat Transfer Systems operating income decreased by \$6.5 million during 2020 as compared to 2019. As previously mentioned, we recorded an impairment loss of \$16.0 million during 2020 relative to our AXC Intangible Asset. Excluding the impact of the impairment loss, operating income increased by \$9.5 million.

Specialty Products—Results of Operations for the Years Ended December 31, 2021 and 2020

	Year Ended December 31,		2021 vs. 2020	
	2021	2020	Variance (\$)	Variance (%)
Sales	\$ 432.9	\$ 242.6	\$ 190.3	78.4 %
Gross Profit	145.5	84.3	61.2	72.6 %
Gross Profit Margin	33.6 %	34.7 %		
SG&A Expenses	\$ 43.3	\$ 22.2	\$ 21.1	95.0 %
SG&A Expenses (% of Sales)	10.0 %	9.2 %		
Operating Income	\$ 94.1	\$ 60.7	\$ 33.4	55.0 %
Operating Margin	21.7 %	25.0 %		

Specialty Products segment sales increased by \$190.3 million (\$126.6 million organically) during 2021 as compared to 2020 to a record \$432.9 million. Similar to the comments previously mentioned in the results of operations section, the increase in Specialty Products sales was primarily driven by favorable sales in hydrogen and helium applications, HLNG vehicle tanks, water treatment and food & beverage applications, each of which had double digit growth during 2021 as compared to 2020. This increase was bolstered by inorganic additions over the past year. The increase in sales for water treatment equipment sales primarily related to our recent acquisitions of BlueInGreen, LLC and AdEdge.

Specialty Products segment gross profit increased by \$61.2 million (\$38.9 million organically) during 2021 as compared to 2020 primarily due to higher volume while gross profit margin decreased by 110 basis points. As previously discussed in the results of operations section, the decrease in gross profit margin was mainly driven by higher material prices and higher labor costs due to macroeconomic conditions.

Specialty Products segment SG&A expenses increased by \$21.1 million (\$13.0 million organically) during 2021 as compared to 2020 primarily driven by ramp up in the business. Furthermore, Specialty Products segment SG&A expenses included \$1.1 million relative to acquisition-related contingent consideration adjustments recognized year-to-date during 2021.

Specialty Products—Results of Operations for the Years Ended December 31, 2020 and 2019

	Year Ended December 31,		2020 vs. 2019	
	2020	2019	Variance (\$)	Variance (%)
Sales	\$ 242.6	\$ 207.9	\$ 34.7	16.7 %
Gross Profit	84.3	72.2	12.1	16.8 %
Gross Profit Margin	34.7 %	34.7 %		
SG&A Expenses	\$ 22.2	\$ 22.4	\$ (0.2)	(0.9) %
SG&A Expenses (% of Sales)	9.2 %	10.8 %		
Operating Income	\$ 60.7	\$ 48.1	\$ 12.6	26.2 %
Operating Margin	25.0 %	23.1 %		

Specialty Products segment sales increased by \$34.7 million during 2020 as compared to 2019. This increase was primarily driven by favorable sales in hydrogen equipment and HLNG vehicle tanks.

Specialty Products segment gross profit increased by \$12.1 million during 2020 as compared to 2019. This increase in gross profit was mainly attributable to higher HLNG vehicle tanks volume, partially offset by new production line ramp up in Ornago, Italy during 2020. The increase in gross profit margin was primarily driven by favorable product mix and volume as the Specialty Products segment gained better leverage on increased volume, primarily related to hydrogen equipment and HLNG vehicle tanks.

Specialty Products segment SG&A expenses decreased by \$0.2 million during 2020 as compared to 2019. As a percentage of sales, Specialty Products segment SG&A expenses was more favorable in 2020 compared to 2019 primarily due to general reductions across most SG&A categories.

Repair, Service & Leasing—Results of Operations for the Years Ended December 31, 2021 and 2020

	Year Ended December 31,		2021 vs. 2020	
	2021	2020	Variance (\$)	Variance (%)
Sales	\$ 187.0	\$ 158.3	\$ 28.7	18.1 %
Gross Profit	49.6	54.6	(5.0)	(9.2)%
Gross Profit Margin	26.5 %	34.5 %		
SG&A Expenses	\$ 17.8	\$ 15.3	\$ 2.5	16.3 %
SG&A Expenses (% of Sales)	9.5 %	9.7 %		
Operating Income	\$ 23.3	\$ 30.3	\$ (7.0)	(23.1)%
Operating Margin	12.5 %	19.1 %		

Repair, Service & Leasing segment sales increased by \$28.7 million during 2021 as compared to 2020. Similar to the comments previously mentioned in the results of operations section, the increase was mainly driven by favorable sales in our leasing business, partially offset by a decrease in sales within our full lifecycle services business.

Repair, Service & Leasing segment gross profit decreased by \$5.0 million during 2021 as compared to 2020, and gross profit margin decreased by 800 basis points. The decrease in gross profit margin was mainly driven by unfavorable material costs relative to our leasing business and fewer high margin, short-lead time replacement equipment sales in 2021 as compared to 2020.

Repair, Service & Leasing segment SG&A expenses increased by \$2.5 million during the year 2021 as compared to 2020. L.A. Turbine SG&A expenses of \$2.4 million are included in Repair, Service & Leasing segment results since the July 1, 2021 acquisition date. Excluding L.A. Turbine, SG&A expenses remained relatively flat between years.

Repair, Service & Leasing—Results of Operations for the Years Ended December 31, 2020 and 2019

	Year Ended December 31,		2020 vs. 2019	
	2020	2019	Variance (\$)	Variance (%)
Sales	\$ 158.3	\$ 162.6	\$ (4.3)	(2.6)%
Gross Profit	54.6	54.0	0.6	1.1 %
Gross Profit Margin	34.5 %	33.2 %		
SG&A Expenses	\$ 15.3	\$ 18.6	\$ (3.3)	(17.7)%
SG&A Expenses (% of Sales)	9.7 %	11.4 %		
Operating Income	\$ 30.3	\$ 27.9	\$ 2.4	8.6 %
Operating Margin	19.1 %	17.2 %		

Repair, Service & Leasing segment sales decreased by \$4.3 million during 2020 as compared to 2019, which was primarily driven by lower volume in aftermarket air cooled heat exchangers, partially offset by an increase in high margin, short-lead time replacement equipment and full lifecycle services.

Repair, Service & Leasing segment gross profit increased by \$0.6 million during 2020 as compared to 2019, and gross profit margin increased by 130 basis points primarily on lower restructuring costs in 2020 as compared to 2019.

Repair, Service & Leasing segment SG&A expenses decreased by \$3.3 million during 2020 as compared to 2019. As a percentage of sales, Repair, Service & Leasing segment SG&A expenses were more favorable in 2020 compared to 2019.

primarily due to general reductions across most SG&A categories, mainly employee-related costs in light of restructuring actions taken during 2019.

Corporate

Corporate SG&A expenses increased by \$7.1 million during 2021 as compared to 2020 mainly due to higher share-based compensation expense, information technology costs and legal fees partially offset by lower employee-related costs. Corporate SG&A expenses decreased by \$5.0 million during 2020 as compared to 2019 primarily due to lower transaction-related costs.

Orders and Backlog

We consider orders to be those for which we have received a firm signed purchase order or other written contractual commitment from the customer. Backlog is comprised of the portion of firm signed purchase orders or other written contractual commitments from customers for which work has not been performed, or is partially completed, that we have not recognized as revenue and excludes unexercised contract options and potential orders. Our backlog as of December 31, 2021, 2020 and 2019 was \$1,190.1 million, \$810.0 million and \$751.2 million, respectively.

The tables below represent orders received and backlog by segment for the periods indicated (dollar amounts in millions):

	Year Ended December 31,		
	2021	2020	2019
Orders			
Cryo Tank Solutions	\$ 555.4	\$ 417.5	\$ 409.5
Heat Transfer Systems	312.0	331.1	477.5
Specialty Products	648.6	279.2	274.9
Repair, Service & Leasing	180.6	196.8	166.5
Intersegment eliminations	(20.5)	(14.5)	(2.5)
Consolidated	\$ 1,676.1	\$ 1,210.1	\$ 1,325.9

	As of December 31,		
	2021	2020	2019
Backlog			
Cryo Tank Solutions	\$ 346.8	\$ 222.6	\$ 210.2
Heat Transfer Systems ⁽¹⁾	370.4	329.2	357.1
Specialty Products	438.2	199.7	150.1
Repair, Service & Leasing	56.5	63.1	33.8
Intersegment eliminations	(21.8)	(4.6)	—
Consolidated	\$ 1,190.1	\$ 810.0	\$ 751.2

⁽¹⁾ Heat Transfer Systems segment backlog as of December 31, 2020 was inclusive of \$21.0 million of backlog remaining on Calcasieu Pass compared to \$117.6 million of Calcasieu Pass remaining as of December 31, 2019. Also included in Heat Transfer Systems segment backlog for all periods presented is approximately \$40 million related to the previously announced Magnolia LNG order where production release is delayed. As we previously reported, in general, similar projects previously put on hold in the market are beginning to move ahead as the clean energy infrastructure build out ramps up.

Orders and Backlog for the Year Ended and As of December 31, 2021 Compared to the Year Ended and As of December 31, 2020

Cryo Tank Solutions segment orders for 2021 were \$555.4 million, a record, as compared to \$417.5 million for 2020, an increase of \$137.9 million. This increase was driven by record order intake for standard tanks and mobile equipment as a result of higher pre-order activity, especially in the second quarter of 2021, as customers anticipated higher prices in future periods. Cryo Tank Solutions segment backlog totaled \$346.8 million as of December 31, 2021, a record high, compared to \$222.6 million as of December 31, 2020, an increase of \$124.2 million.

Heat Transfer Systems segment orders for 2021 were \$312.0 million (net of a \$14.4 million change order) compared to \$331.1 million for 2020, a decrease of \$19.1 million mainly driven by softness in demand for natural gas compression

equipment. Included in 2020 Heat Transfer Systems segment orders was a \$70 million order for a downstream project (100% air cooled heat exchangers). Heat Transfer Systems segment backlog totaled \$370.4 million as of December 31, 2021 compared to \$329.2 million as of December 31, 2020, an increase of \$41.2 million.

Specialty Products segment orders for 2021 were a record \$648.6 million (\$494.0 million organically) compared to \$279.2 million (\$277.0 million organically) for 2020, an increase of \$369.4 million (\$217.0 million organically). This increase was mainly driven by strong orders in hydrogen and helium (liquefaction, distribution and storage), HLNG vehicle tanks, LNG regasification, laser applications and food & beverage applications. During 2021, we recorded four hydrogen/helium liquefaction orders totaling approximately \$150 million, covering three different geographies and three different customers. The increase in orders was also attributed to an increase in food & beverage applications and favorable water treatment equipment solutions primarily related to our recent acquisitions of BlueInGreen, LLC and AdEdge. Specialty Products segment backlog totaled a record \$438.2 million (\$320.4 million organically) as of December 31, 2021, compared to \$199.7 million (\$191.5 million organically) as of December 31, 2020, an increase of \$238.5 million (\$128.9 million organically).

Repair, Service & Leasing segment orders for 2021 were \$180.6 million compared to \$196.8 million for 2020, a decrease of \$16.2 million. This decrease was primarily driven by fewer high margin, short-lead time replacement equipment orders in 2021 as compared to 2020 and significant orders for ISO containers for LNG applications received in 2020, partially offset by higher aftermarket fans and air cooled heat exchangers. Furthermore, orders in our leasing and spare parts businesses were fairly consistent between periods. Repair, Service & Leasing segment backlog totaled \$56.5 million as of December 31, 2021, compared to \$63.1 million as of December 31, 2020, a decrease of \$6.6 million.

Orders and Backlog for the Year Ended and As of December 31, 2020 Compared to the Year Ended and As of December 31, 2019

Cryo Tank Solutions segment orders for 2020 were \$417.5 million compared to \$409.5 million for 2019, an increase of \$8.0 million. This increase was primarily driven by solid order intake for mobile equipment in China and India and favorable engineered systems orders in Europe and the U.S. partially offset by unfavorable orders for mobile equipment in Europe and the U.S. During 2020, Covid-19 shut downs softened order intake during the second quarter of 2020, but increased the last half of 2020 as restrictions eased and demand for medical oxygen equipment increased. Cryo Tank Solutions segment backlog totaled \$222.6 million as of December 31, 2020, compared to \$210.2 million as of December 31, 2019, an increase of \$12.4 million.

Heat Transfer Systems segment orders for 2020 were \$331.1 million compared to \$477.5 million for 2019, a decrease of \$146.4 million mainly driven by softness in demand for natural gas compression equipment. Included in 2020 Heat Transfer Systems segment orders was a \$70 million order for a downstream project (100% air cooled heat exchangers) as previously discussed. Heat Transfer Systems segment backlog totaled \$329.2 million as of December 31, 2020 compared to \$357.1 million as of December 31, 2019, a decrease of \$27.9 million. Excluding Calcasieu Pass, Heat Transfer Systems backlog increased by \$68.7 million or 28.7% in 2020 compared to 2019. Included in Heat Transfer Systems segment backlog for all periods presented is approximately \$40.0 million related to the previously announced Magnolia LNG order where production release is delayed.

Specialty Products segment orders for 2020 were \$279.2 million compared to \$274.9 million for 2019, an increase of \$4.3 million. This increase was mainly driven by an increase in HLNG vehicle tank and hydrogen equipment orders. Specialty Products segment backlog totaled \$199.7 million as of December 31, 2020, compared to \$150.1 million as of December 31, 2019, an increase of \$49.6 million.

Repair, Service & Leasing segment orders for 2020 were \$196.8 million compared to \$166.5 million for 2019, an increase of \$30.3 million, which was primarily driven by increases in aftermarket fans, full lifecycle services and our expanded leasing fleet partially offset by a decrease in aftermarket air cooled heat exchangers. Repair, Service & Leasing segment backlog totaled \$63.1 million as of December 31, 2020, compared to \$33.8 million as of December 31, 2019, an increase of \$29.3 million.

Liquidity and Capital Resources

Our debt instruments and related covenants are described in Note 10, "Debt and Credit Arrangements," of our consolidated financial statements included under Item 15, "Exhibits and Financial Statement Schedules" of this Annual Report on Form 10-K.

Sources and Uses of Cash

Our cash and cash equivalents totaled \$122.2 million as of December 31, 2021, a decrease of \$2.9 million from the balance at December 31, 2020. Our foreign subsidiaries held cash of approximately \$91.2 million and \$102.7 million at

December 31, 2021 and 2020, respectively, to meet their liquidity needs. No material restrictions exist to accessing cash held by our foreign subsidiaries. We expect to meet our U.S. funding needs without repatriating non-U.S. cash and incurring incremental U.S. taxes. Cash equivalents are primarily invested in money market funds that invest in high quality, short-term instruments, such as U.S. government obligations, certificates of deposit, repurchase obligations, and commercial paper issued by corporations that have been highly rated by at least one nationally recognized rating organization, and in the case of cash equivalents in China, obligations of local banks. We believe that our existing cash and cash equivalents, funds available under our senior secured revolving credit facility due October 2026 or other financing alternatives, and cash provided by operations will be sufficient to meet our normal working capital needs, capital expenditures and investments for the foreseeable future.

Years Ended December 31, 2021 and 2020

Cash used in operating activities during 2021 was \$21.3 million, a decrease of \$194.0 million from 2020, primarily due to a decrease in operating cash provided by working capital, particularly within inventory, accounts receivable and unbilled contract revenue during 2021. In light of widespread supply chain and cost challenges as discussed in the macroeconomic impacts section above, cash used for inventory was primarily driven by cost and availability of raw materials to ensure that we have sufficient stock to meet demand. We continually evaluate our supply chain and make strategic inventory purchases as appropriate.

Cash used in investing activities during 2021 was \$361.2 million, as compared to cash provided by investing activities of \$185.0 million during 2020, which includes \$316.7 million in cash provided by investing activities of discontinued operations primarily related to net cash proceeds of \$317.5 million from the sale of our cryobiological products business in 2020. During 2021, we used \$205.1 million of cash for the acquisitions of Cryogenic Gas Technologies, Inc., L.A. Turbine, AdEdge and Earthly Labs, net of cash acquired. We used \$103.9 million for investments in Svante Inc., Transform Materials LLC, Cryomotive GmbH, Earthly Labs and an additional investment in HTEC Hydrogen Technology & Energy Corporation (“HTEC”). We also paid \$52.7 million for capital expenditures. See below for discussion regarding the composition of cash provided by investing activities during 2020.

Cash provided by financing activities during 2021 was \$381.9 million compared to cash used in financing activities of \$363.4 million during 2020. During 2021, we borrowed \$1,361.1 million on credit facilities and repaid \$873.6 million in borrowings on credit facilities primarily to fund the acquisitions and investments described in the paragraph above. Furthermore, during the fourth quarter of 2021, we refinanced our senior secured revolving credit facility which resulted in additional sources of cash of \$482.0 million in U.S. dollar borrowings and 78 million euros (equivalent to \$90.5 million) in euro borrowings. These sources of cash repaid principal and interest outstanding under our senior secured revolving credit facility prior to the amendment (\$478.7 million in U.S. dollar borrowings and 78 million euros (equivalent to \$90.5 million) in euro borrowings) plus upfront debt issuance costs. Total debt issuance costs paid during 2021 were \$3.0 million. For further discussion regarding the amendment of our credit facilities, refer to Note 10, “Debt and Credit Arrangements” of our consolidated financial statements included under Item 15, “Exhibits and Financial Statement Schedules” of this Annual Report on Form 10-K. Also during 2021, we received \$6.9 million in proceeds from stock option exercises and paid \$6.4 million for common stock repurchases from share-based compensation plans to satisfy tax withholding obligations relating to the vesting or payment of equity awards. See below for discussion regarding the composition of cash provided by financing activities during 2020.

Years Ended December 31, 2020 and 2019

Cash provided by operating activities during 2020 was \$172.7 million and includes \$18.3 million in cash provided by operating activities of discontinued operations, an increase of \$38.8 million from 2019, mainly due to favorable operating results, partially offset by an increase in cash used for working capital, primarily due to higher inventory levels.

Cash provided by investing activities during 2020 was \$185.0 million and includes \$316.7 million in cash provided by investing activities of discontinued operations, as compared to cash used in investing activities of \$642.7 million during 2019, which includes \$0.9 million in cash used in investing activities of discontinued operations. During 2020, we received net cash proceeds of \$317.5 million from the sale of our cryobiological products business. We used \$51.9 million of cash primarily for the acquisitions of Sustainable Energy Solutions, Inc. (\$20.0 million) BlueInGreen, LLC (\$20.0 million) and Alabama Trailers (\$10.0 million), \$50.8 million in investments in HTEC Hydrogen Technology & Energy Corporation (“HTEC”) and McPhy (Euronext Paris: MCPHY – ISIN; FR0011742329) and paid \$37.9 million for capital expenditures. During 2019, we used \$603.9 million of cash primarily for the acquisition of AXC and paid \$36.2 million for capital expenditures.

Cash used in financing activities during 2020 was \$363.4 million compared to cash provided by financing activities of \$511.6 million during 2019. During 2020, we borrowed \$215.0 million on credit facilities and repaid \$223.1 million in borrowings on credit facilities. We repaid \$344.1 million in borrowings on our term loan due June 2024 mainly with proceeds

from the divestiture of our cryobiological products business. We used \$19.3 million to repurchase shares of Chart common stock related to our share purchase program during 2020 (On March 11, 2021, the share repurchase program expired with no further repurchases). We received \$11.0 million in proceeds from stock option exercises during 2020. During 2019, we borrowed \$450.0 million under the term loan and received proceeds of \$295.8 million from the 2019 Equity Offering to fund the AXC acquisition. During 2019, we borrowed \$235.8 million on our senior secured revolving credit facility to fund working capital needs and to fund a portion of the AXC acquisition and repaid \$451.1 million in senior secured revolving credit facility borrowings. Also during 2019, we received \$9.4 million in proceeds from stock option exercises and used \$2.0 million for common stock repurchases from share-based compensation plans to satisfy tax withholding obligations relating to the vesting or payment of equity awards.

Cash Requirements

We do not currently anticipate any unusual cash requirements for working capital needs for the year ending December 31, 2022. Management anticipates we will be able to satisfy cash requirements for our ongoing business for the foreseeable future with cash generated by operations, existing cash balances and available borrowings under our credit facilities. We expect capital expenditures for 2022 to be in the range of \$50.0 million to \$55.0 million.

Contractual Obligations

Our known contractual obligations as of December 31, 2021 and cash requirements resulting from those obligations are as follows (all dollar amounts in millions):

	Payments Due by Period				
	Total	Less Than 1 Year	1 – 3 Years	3 – 5 Years	More Than 5 Years
Gross debt ⁽¹⁾	\$ 859.6	\$ —	\$ 258.8	\$ 600.8	\$ —
Contractual convertible notes interest	7.8	2.6	5.2	—	—
Operating leases	30.1	7.4	12.8	8.0	1.9
Total contractual cash obligations	\$ 897.5	\$ 10.0	\$ 276.8	\$ 608.8	\$ 1.9

⁽¹⁾ The \$258.8 principal balance of the 2024 Notes will mature on November 15, 2024, yet the carrying amount of the 2024 Notes is treated as current for financial statement reporting purposes.

Not included in the table above is a 50.0 million euros investment commitment for the Clean H2 Infra Fund as mentioned in Note 6, “Investments.” Funding is required when the fund manager issues a capital call, which shall not exceed 30% of our capital commitment in any rolling 12-month period. Also not included in the table above are contingent consideration arrangements from prior acquisitions with a potential payout range of \$0.0 million to \$31.0 million.

Our commercial commitments as of December 31, 2021, which include standby letters of credit and bank guarantees, represent potential cash requirements resulting from contingent events that require performance by us or our subsidiaries pursuant to funding commitments, and are as follows (all dollar amounts in millions):

	Total	Expiring in 2022	Expiring in 2023 and beyond
Standby letters of credit	\$ 25.6	\$ 11.4	\$ 14.2
Bank guarantees	35.6	2.9	32.7
Total commercial commitments	\$ 61.2	\$ 14.3	\$ 46.9

Inventories, net

Our inventories, net, balance was \$321.5 million at December 31, 2021 compared to \$248.4 million at December 31, 2020, representing an increase of \$73.1 million (29.4%). This increase was primarily driven by cost and availability of raw materials to ensure that we have sufficient stock to meet demand. As discussed in the sources and uses of cash section above, we continually evaluate our supply chain and make strategic inventory purchases as appropriate.

Accrued Income Taxes

Our accrued income taxes balance was \$16.1 million at December 31, 2021 compared to \$46.5 million at December 31, 2020, representing a decrease of \$30.4 million (65.4%). This decrease was primarily driven by \$24.9 million in payments for income taxes related to the gain recognized on the cryobiological products divestiture.

Contingencies

We are subject to federal, state, local, and foreign environmental laws and regulations concerning, among other matters, waste water effluents, air emissions, and handling and disposal of hazardous materials, such as cleaning fluids. We are involved with environmental compliance, investigation, monitoring, and remediation activities at certain of our owned and formerly owned manufacturing facilities and at one owned facility that is leased to a third party, and, except for these continuing remediation efforts, believe we are currently in substantial compliance with all known environmental regulations. Management believes that any additional liability in excess of amounts accrued, which may result from the resolution of such matters, should not have a material adverse effect on our financial position, liquidity, cash flows or results of operations.

We are occasionally subject to various legal claims related to performance under contracts, product liability, taxes, employment matters, environmental matters, intellectual property, and other matters, several of which claims assert substantial damages, in the ordinary course of our business. Based on our historical experience in litigating these claims, as well as our current assessment of the underlying merits of the claims and applicable insurance, if any, we believe the resolution of these legal claims will not have a material adverse effect on our financial position, liquidity, cash flows or results of operations. Future developments may, however, result in resolution of these legal claims in a way that could have a material adverse effect. See Item 1A. "Risk Factors" and Item 3, "Legal Proceedings" for further information.

Foreign Operations

During 2021, we had operations in Asia, Australia, India, Europe, and South America, which accounted for approximately 56% of consolidated sales and 24% of total assets at December 31, 2021. Functional currencies used by these operations include the U.S. dollar, Chinese yuan, the euro, the British pound, the Japanese yen and the Indian rupee. We are exposed to foreign currency exchange risk as a result of transactions by these subsidiaries in currencies other than their functional currencies, and from transactions by our domestic operations in currencies other than the U.S. dollar. The majority of these functional currencies and the other currencies in which we record transactions are fairly stable, although we experienced variability in the current year as more fully discussed in Item 7A. The use of these currencies, combined with the use of foreign currency forward purchase and sale contracts, has enabled us to be sheltered from significant gains or losses resulting from foreign currency transactions. This situation could change if these currencies experience significant fluctuations or the volume of forward contracts changes.

Critical Accounting Estimates

Our consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles and are based on the selection and application of significant accounting policies, which require management to make estimates and assumptions about future events that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ materially from those estimates. Management believes the following are the more critical judgmental areas in the application of its accounting policies that affect its financial position and results of operations.

Goodwill and Indefinite-Lived Intangible Assets: We evaluate goodwill and indefinite-lived intangible assets for impairment on an annual basis, as of October 1 or whenever events or changes in circumstances indicate that an evaluation should be completed. A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include deterioration in general economic conditions, negative developments in equity and credit markets, a decline in stock price and market capitalization, adverse changes in the markets in which we operate, and a trend of negative or declining cash flows over multiple periods. The fair value that could be realized in an actual transaction may differ from that used to evaluate the impairment of goodwill.

Goodwill is analyzed on a reporting unit basis. The reporting units are the same as our operating and reportable segments, which are as follows: Cryo Tank Solutions, Heat Transfer Systems, Specialty Products and Repair Service & Leasing. To test goodwill for impairment, we first evaluate qualitative factors, such as macroeconomic conditions and our overall financial performance to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill (the "Step 0 Test"). If we determine that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, the first step of the goodwill impairment test is not necessary. Otherwise, we would proceed to the first step of the goodwill impairment test.

Alternatively, we may also bypass the Step 0 Test and proceed directly to the first step of the goodwill impairment test. Under the first step (“Step 1”), we estimate the fair value of our reporting units by considering income and market approaches to develop fair value estimates, which are weighted to arrive at a fair value estimate for each reporting unit. With respect to the income approach, a model has been developed to estimate the fair value of each reporting unit. This fair value model incorporates estimates of future cash flows, estimates of allocations of certain assets and cash flows among reporting units, estimates of future growth rates, and management’s judgment regarding the applicable discount rates to use to discount such estimates of cash flows. With respect to the market approach, a guideline company method is employed whereby pricing multiples are derived from companies with similar assets or businesses to estimate fair value of each reporting unit. If the fair value of the reporting unit exceeds the carrying amount of the net assets assigned to that reporting unit, then goodwill is not impaired, and no further testing is required. However, if the fair value of the reporting unit is less than its carrying amount, the impairment charge is based on the excess of a reporting unit’s carrying amount over its fair value (i.e., we would measure the charge based on the result from Step 1). The assumptions and judgment used by management to estimate future cash flows, allocation of assets and cash flows among reporting units, estimates of future growth rates and selection of discount rates are subject to change due to the economic environment, including such factors as interest rates, expected market returns and volatility of markets served. Changes to the assumptions and estimates used throughout the steps described above may result in a significantly different estimate of the fair value of the reporting units, which could result in a different assessment of the recoverability of goodwill and result in future impairment charges.

In order to assess the reasonableness of the calculated fair values of our reporting units, we also compare the sum of the reporting units’ fair values to our market capitalization and calculate an implied control premium (the excess of the sum of the reporting units’ fair values over the market capitalization). We evaluate the control premium by comparing it to control premiums of recent comparable transactions. If the implied control premium is not reasonable in light of this assessment, we reevaluate our fair value estimates of the reporting units by adjusting the discount rates and other assumptions as necessary.

With respect to indefinite-lived intangible assets, we first evaluate relevant events and circumstances to determine whether it is more likely than not that the fair value of an indefinite-lived intangible asset is less than its carrying amount. If, in weighing all relevant events and circumstances in totality, we determine that it is not more likely than not that an indefinite-lived intangible asset is impaired, no further action is necessary. Otherwise, we would determine the fair value of indefinite-lived intangible assets and perform a quantitative impairment assessment by comparing the indefinite-lived intangible asset’s fair value to its carrying amount. We may bypass such a qualitative assessment and proceed directly to the quantitative assessment. We estimate the fair value of our indefinite-lived assets using the income approach. This may include the relief from royalty method or use of a model similar to the one described above related to goodwill which estimates the future cash flows attributed to the indefinite-lived intangible asset and then discounting these cash flows back to a present value. Under the relief from royalty method, fair value is estimated by discounting the royalty savings, as well as any tax benefits related to ownership to a present value. The fair value from either approach is compared to the carrying value and an impairment is recorded if the fair value is determined to be less than the carrying value. Management’s estimates regarding future cash flows, selection of discount rates and estimated tax benefits are subject to change due to various economic factors and changes to the assumptions and estimates used throughout the steps described above and may result in a significantly different estimate of the fair value of indefinite-lived intangible assets which could result in a different assessment of the recoverability of these assets and result in future impairment charges.

As of October 1, 2021 and 2020 (“annual assessment dates”) we elected to bypass the Step 0 test and based on our Step 1 test, we determined that the fair value of each of our reporting units was greater than its respective carrying value at each annual assessment date and, therefore, no further action was necessary. Furthermore, as of the annual assessment dates, we also elected to bypass the qualitative assessment for indefinite-lived intangible assets with the exception of our recently acquired trade names as of October 1, 2021 which includes Cryo Technologies, L.A. Turbine and AdEdge (together, the “recently acquired trade names”). Based on our qualitative assessment of the recently acquired trade names, we determined that it is not “more likely than not” that the fair value of each of the recently acquired trade names is less than its respective carrying amount. With one exception as discussed in the next paragraph, based on our quantitative assessments of all other trade names, we determined that the fair value of each of the indefinite-lived intangible assets was greater than its respective carrying value at each annual assessment date and, therefore, no further action was necessary.

During 2020, in connection with the annual impairment process described above, Chart, with the assistance of an outside professional accounting firm, performed an impairment analysis with respect to our AXC Intangible Asset. Our preliminary analysis determined that no impairment was required for the AXC Intangible Asset, partially as a result of the inclusion of carbon capture future revenue streams in our forecast. After further analysis, we determined that these carbon capture opportunities should not have been included in our forecast as they resulted from investments and activities that occurred in the business after October 1, 2020, the appropriate measurement date. As a result of removing this revenue from the forecast, we recorded an impairment loss of \$16.0 million during 2020 relative to our \$55.0 million AXC Intangible Asset in our Heat Transfer Systems segment. Industry-wide softness in demand for midstream and upstream compression equipment represented

impairment indicators requiring us to re-evaluate the fair value of the AXC Intangible Asset. We determined the fair value of the AXC Intangible Asset under the relief-from-royalty method and conducted an impairment test as defined above. We determined that the fair value of the AXC Intangible Asset was \$39.0 million and impaired the AXC Intangible Asset by a value equal to the difference in the carrying amount and calculated fair value.

Long-Lived Assets: We monitor our property, plant and equipment, and finite-lived intangible assets for impairment indicators on an ongoing basis. If impairment indicators exist, assets are grouped and tested at the lowest level for which identifiable cash flows are available, and we perform the required analysis and record impairment charges if applicable. In conducting this analysis, we compare the undiscounted cash flows expected to be generated from the long-lived assets to the related net book values. If the undiscounted cash flows exceed the net book value, the long-lived assets are considered not to be impaired. If the net book value exceeds the undiscounted cash flows, an impairment loss is measured and recognized. An impairment loss is measured as the difference between the net book value and the fair value of the long-lived assets. Fair value is estimated from discounted future net cash flows (for assets held for use) or net realizable value (for assets held for sale). In assessing the recoverability of our long-lived assets, a significant amount of judgment is involved in estimating the future cash flows, discount rates and other factors necessary to determine the fair value of the respective assets. Key assumptions used in these estimates include industry and market conditions, costs to produce and projected revenue growth. If these estimates or the related assumptions change in the future, we may be required to record impairment charges for these assets in the period such determination was made. We amortize intangible assets that have finite lives over their estimated useful lives. We had no long-lived asset impairments in the last three years.

Business Combinations: We account for business combinations in accordance with Accounting Standards Codification (“ASC”) 805, “Business Combinations.” We recognize and measure identifiable assets acquired and liabilities assumed based on their estimated fair values. The excess of the consideration transferred over the fair value of the net assets acquired, including identifiable intangible assets, is assigned to goodwill. We estimate the fair value of identifiable intangible assets under income approaches where the fair value models incorporate estimates of future cash flows, estimates of allocations of certain assets and cash flows, estimates of future growth rates, and management’s judgment regarding the applicable discount rates to use to discount such estimates of cash flows. Assigning estimated fair values to the identifiable assets acquired and liabilities assumed requires the use of significant estimates, judgments, inputs and assumptions. Such assumptions are based in part on historical experience, industry and market conditions and information obtained from management of the acquired companies and are thus inherently uncertain. As additional information becomes available, we may further revise the preliminary acquisition consideration allocation during the remainder of the measurement period, which shall not exceed twelve months from the closing of the acquisition.

Investments in Equity Securities Without a Readily Determinable Fair Value: Our investments in equity securities for which there is no readily determinable fair value are measured at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. As part of our assessment for impairment indicators, judgement is involved in considering significant deterioration in the earnings performance, credit rating, asset quality or overall business prospects of the investee as well as significant adverse changes in the external environment in which an investee operates, a significant adverse change in the general market condition of either the geographical area or the industry in which the investee operates or factors that raise significant concerns about the investee’s ability to continue as a going concern, such as negative cash flows from operations, working capital deficiencies, or noncompliance with statutory capital requirements or debt covenants. Furthermore, management must use reasonable efforts to identify an observable price change on a timely basis. Despite these efforts, we may not be able to obtain this information. If we determine that an investment is impaired, we shall measure the investment at fair value, which may involve a significant degree of judgement and subjectivity.

Contingencies: On an ongoing basis, we assess the potential liabilities related to any lawsuits or claims brought against us. While it is typically very difficult to determine the timing and ultimate outcome of such actions, management uses its best judgment to determine if it is probable that we will incur an expense related to the settlement or final adjudication of such matters and whether a reasonable estimation of such probable loss, if any, can be made. In assessing probable losses, we take into consideration estimates of the amount of insurance recoveries, if any, which are recorded in other current assets when recoverability is probable. We accrue a liability when we believe a loss is probable and the amount of loss can be reasonably estimated. Due to the inherent uncertainties related to the eventual outcome of litigation and potential insurance recoveries, it is possible that certain matters may be resolved for amounts materially different from any provisions or disclosures that we have previously made.

Revenue Recognition: Revenue is recognized when (or as) we satisfy performance obligations by transferring a promised good or service, an asset, to a customer. An asset is transferred to a customer when, or as, the customer obtains control over that asset. In most contracts, the transaction price includes both fixed and variable consideration. The variable consideration contained within our contracts with customers includes discounts, rebates, refunds, credits, price concessions, incentives,

performance bonuses, penalties and other similar items. When a contract includes variable consideration, we evaluate the estimate of the variable consideration to determine whether the estimate needs to be constrained; therefore, we include the variable consideration in the transaction price only to the extent that it is probable that a significant reversal of the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. Variable consideration estimates are updated at each reporting date.

For brazed aluminum heat exchangers, air cooled heat exchangers, cold boxes, liquefied natural gas fueling stations, engineered tanks, and repair services, contracts contain language that transfers control to the customer over time. For these contracts, revenue is recognized as we satisfy the performance obligations by an allocation of the transaction price to the accounting period computed using input methods such as costs incurred. Selecting the method used to measure progress towards completion for our contracts requires judgment and is based on the nature of the products to be provided. Accounting for contracts using the costs incurred input method requires management judgment relative to assessing risks and their impact on the estimates of revenue and costs. Certain factors can impact these estimates including, but not limited to, the potential for incentives or penalties on performance, schedule delays, labor productivity, the complexity of work performed and the cost and availability of materials. Revisions to estimated cost to complete a project that result from inefficiencies in our performance that were not expected in the pricing of the contract are expensed in the period in which these inefficiencies become known. Contract modifications can change a contract's scope, price, or both. Approved contract modifications are accounted for as either a separate contract or as part of the existing contract depending on the nature of the modification which is subject to management's judgment.

Income Taxes: The Company and its U.S. subsidiaries file a consolidated federal income tax return. Deferred income taxes are provided for temporary differences between financial reporting and the consolidated tax return in accordance with the liability method. A valuation allowance is provided against net deferred tax assets when conditions indicate that it is more likely than not that the benefit related to such assets will not be realized. In the event that we change our determination as to the amount of deferred tax assets that can be realized, the valuation allowance will be adjusted with a corresponding impact to the provision for income taxes in the period in which such determination is made. Management must make assumptions, judgments and estimates to determine our deferred tax assets and liabilities, current provision for income taxes and valuation allowances. In making such assumptions we consider all available evidence including past operating results, estimates of future taxable income and the feasibility of tax planning strategies.

We utilize a two-step approach for the recognition and measurement of uncertain tax positions. The first step is to evaluate the tax position and determine whether it is more likely than not that the position will be sustained upon examination by tax authorities. The second step is to measure the tax benefit as the largest amount that is more likely than not of being realized upon settlement. Our income tax positions are based on research and interpretations of the income tax laws and rulings in each of the jurisdictions in which we do business. Due to the subjectivity of interpretations of laws and rulings in each jurisdiction, the differences and interplay in tax laws between those jurisdictions, as well as the inherent uncertainty in estimating the final resolution of complex tax audit matters, management's estimates of income tax liabilities may differ from actual payments or assessments. Resolution of uncertain tax positions could have a material adverse effect or materially benefit our results of operations in future periods depending on their ultimate resolution.

We use an estimate of our annual effective tax rate at each interim reporting period based on the facts and circumstances available at that time, while the actual effective tax rate is calculated at year-end. In calculating these rates, significant judgment is involved regarding the application of global income tax laws and regulations and when projecting the jurisdictional mix of income. Additionally, interpretation of tax laws, court decisions or other guidance provided by taxing authorities influences our estimate of the effective income tax rates. As a result, our actual effective income tax rates and related income tax liabilities may differ materially from our estimated effective tax rates and related income tax liabilities. Any resulting differences are recorded in the period they become known.

Recent Accounting Standards

For disclosures regarding recent accounting standards, refer to Note 2, "Significant Accounting Policies," of our consolidated financial statements included under Item 15, "Exhibits and Financial Statement Schedules" of this Annual Report on Form 10-K.

Forward-Looking Statements

We are making this statement in order to satisfy the "safe harbor" provisions contained in the Private Securities Litigation Reform Act of 1995. This Annual Report includes "forward-looking statements." These forward-looking statements include statements relating to our business, including statements regarding completed acquisitions and investments and related accretion or statements with respect to the use of proceeds or redeployment of capital from recent divestitures, as well statements

regarding revenues, cost synergies and efficiency savings, objectives, future orders, margins, segment sales mix, earnings or performance, liquidity and cash flow, inventory levels, capital expenditures, materials costs and pricing increases, business trends, clean energy market opportunities, governmental initiatives, including executive orders and other information that is not historical in nature. In some cases, forward-looking statements may be identified by terminology such as “may,” “will,” “should,” “expects,” “anticipates,” “believes,” “projects,” “forecasts,” “outlook,” “guidance,” “target,” “continue” or the negative of such terms or comparable terminology. Forward-looking statements contained herein (including future cash contractual obligations, liquidity, cash flow, orders, results of operations, projected revenues, margins, capital expenditures, industry and business, trends, clean energy and other new market or expansion opportunities, cost synergies and savings objectives, and government initiatives among other matters) or in other statements made by us are made based on management’s expectations and beliefs concerning future events impacting us and are subject to uncertainties and factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control, that could cause our actual results to differ materially from those matters expressed or implied by forward-looking statements.

The risk factors discussed in Item 1A. “Risk Factors” and the factors discussed in Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” among others, could affect our future performance and liquidity and value of our securities and could cause our actual results to differ materially from those expressed or implied by forward-looking statements made by us or on our behalf. These factors should not be construed as exhaustive and there may also be other risks that we are unable to predict at this time. All forward-looking statements included in this Annual Report are expressly qualified in their entirety by these cautionary statements.

All forward-looking statements attributable to us or persons acting on our behalf apply only as of the date of this Annual Report and are expressly qualified in their entirety by the cautionary statements included in this Annual Report. We undertake no obligation to update or revise forward-looking statements which may be made to reflect events or circumstances that arise after the filing date of this document or to reflect the occurrence of unanticipated events, except as otherwise required by law.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

In the normal course of business, our operations are exposed to fluctuations in interest rates and foreign currency values that can affect the cost of operating and financing. Accordingly, we address a portion of these risks through a program of risk management.

Interest Rate Risk: Our primary interest rate risk exposure results from various floating rate pricing mechanisms contained in our senior secured revolving credit facility due October 2026. If interest rates were to increase 100 basis points (1 percent) from the weighted-average interest rate of 2.1% at December 31, 2021, and assuming no changes in the \$600.8 million of borrowings outstanding under the senior secured revolving credit facility due October 2026 at December 31, 2021, our additional annual expense would be approximately \$6.0 million on a pre-tax basis.

Foreign Currency Exchange Rate Risk: We operate in the United States and other foreign countries, which creates exposure to foreign currency exchange fluctuations in the normal course of business, which can impact our financial position, results of operations, cash flow, and competitive position. The financial statements of foreign subsidiaries are translated into their U.S. dollar equivalents at end-of-period exchange rates for assets and liabilities, while income and expenses are translated at average monthly exchange rates. Translation gains and losses are components of other comprehensive income (loss) as reported in the consolidated statements of comprehensive income. Translation exposure is primarily with the euro, the Czech koruna, the Chinese yuan and the Indian rupee. During 2021, the Czech koruna, euro and the Indian rupee increased in relation to the U.S. dollar by less than 10% while the Chinese yuan decreased in relation to the U.S. Dollar by less than 2%. At December 31, 2021, a hypothetical further 10% strengthening of the U.S. dollar would not materially affect our financial statements.

Chart's primary transaction exchange rate exposures are with the euro, the Chinese yuan, the Czech koruna, the Indian rupee, the Australian dollar, the British pound, the Canadian dollar and the Japanese yen. Transaction gains and losses arising from fluctuations in currency exchange rates on transactions denominated in currencies other than the functional currency are recognized in the consolidated statements of income as a component of foreign currency loss (gain). We enter into foreign exchange forward contracts to hedge anticipated and firmly committed foreign currency transactions. We do not use derivative financial instruments for speculative or trading purposes. The terms of the contracts are generally one year or less. At December 31, 2021, a hypothetical 10% weakening of the U.S. dollar would not materially affect our outstanding foreign exchange forward contracts. Additionally, assuming no changes in the 78.0 million euros in EUR Revolver Borrowings outstanding under the senior secured revolving credit facility due October 2026 and an additional 100 basis points (1 percent) strengthening in the U.S dollar in relation to the euro as of the beginning of 2021, during the year ended December 31, 2021, our additional unrealized foreign currency gain would be approximately \$0.9 million on a pre-tax basis.

Market Price Sensitive Instruments

In connection with the pricing of the 2024 Notes, we entered into privately negotiated convertible note hedge transactions (the "Note Hedge Transactions") with certain parties, including affiliates of the initial purchasers of the 2024 Notes (the "Option Counterparties"). These Note Hedge Transactions are expected to reduce the potential dilution upon any future conversion of the 2024 Notes.

We also entered into separate, privately negotiated warrant transactions with the Option Counterparties to acquire up to 4.41 million shares of our common stock. The warrant transactions will have a dilutive effect with respect to our common stock to the extent that the price per share of our common stock exceeds the strike price of the warrants unless we elect, subject to certain conditions, to settle the warrants in cash. The strike price of the warrant transactions related to the 2024 Notes was initially \$71.775 per share. Further information is located in Note 10, "Debt and Credit Arrangements," of our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Item 8. *Financial Statements and Supplementary Data*

Our Financial Statements and the accompanying Notes that are filed as part of this Annual Report are listed under Item 15. “Exhibits and Financial Statement Schedules” and are set forth beginning on page [F-1](#) immediately following the signature page of this Form 10-K and are incorporated into this Item 8 by reference.

Item 9. *Changes in and Disagreements With Accountants on Accounting and Financial Disclosure*

None.

Item 9A. *Controls and Procedures*

Evaluation of Disclosure Controls and Procedures

As of December 31, 2021, an evaluation was performed under the supervision and with the participation of our management including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures pursuant to Rule 13a-15 under the Securities and Exchange Act of 1934, as amended (the “Exchange Act”). The term “disclosure controls” means disclosure controls and procedures that are designed to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act (1) is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission’s rules and forms and (2) is accumulated and communicated to our management including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow for timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Based on the evaluation of our disclosure controls and procedures as of December 31, 2021, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at a reasonable level of assurance.

Management’s Report on Internal Control Over Financial Reporting

Management of Chart Industries, Inc. and its subsidiaries (the “Company,” “Chart,” “we,” “us,” or “our”) is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed under the supervision of our principal executive and financial officers to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles.

The Company’s internal control over financial reporting includes policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets of the Company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and the directors of the Company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company’s assets that could have a material effect on the Company’s financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies and procedures may deteriorate. Management has assessed the effectiveness of its internal control over financial reporting as of December 31, 2021 based on the framework established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the “COSO criteria”).

We did not include an evaluation of the internal control over financial reporting of Cryo Technologies, LAT, AdEdge and Earthly Labs, which were acquired during 2021 and which, combined, constituted \$285.6 million and \$249.2 million of total and net assets, respectively, as of December 31, 2021, and \$34.3 million and \$7.2 million of sales and operating income, respectively, for the year then ended.

Based on our assessment of internal control over financial reporting, management has concluded that, as of December 31, 2021, our internal control over financial reporting was effective.

The effectiveness of our internal control over financial reporting as of December 31, 2021 has been audited by Deloitte & Touche, LLP, an independent registered public accounting firm, and is included in this Annual Report on Form 10-K on page F-4 under the caption “Report of Independent Registered Public Accounting Firm.”

Previously Disclosed Material Weaknesses

We disclosed in Item 9A. Controls and Procedures in our Annual Report on Form 10-K for the year ended December 31, 2020 that we had identified material weaknesses in our internal control over financial reporting that were identified in connection with our annual goodwill and trademark impairment testing, consisting of the following:

- Control Activities – The Company did not maintain effective control activities based on criteria established by the COSO framework as the control activities that involve more complex judgments did not adequately consider the competency of personnel assigned to perform the review.
- Goodwill and Identifiable Intangible Assets, Net – As a result of the material weaknesses identified above, the Company failed to adequately design and implement internal controls over the review of its goodwill and indefinite-lived intangible assets for impairment.

Remediation of Material Weaknesses

To address the previously reported material weaknesses in our internal control over financial reporting discussed in Part II, Item 9A. Controls and Procedures to our Form 10-K for the fiscal year ended December 31, 2020, we took the following steps:

- With respect to our annual impairment analysis, we completed the formal review of the annual forecast by September 30, 2021;
- We evaluated and re-assessed the design of our goodwill and intangible asset impairment process, including control activities associated with the review of data provided to third-party valuation specialists and evaluated the appropriateness of the assumptions and methodology used to measure the fair value of reporting units and the reasonableness of the conclusions in the third-party valuation specialists’ reports;
- We evaluated the assignment of responsibilities associated with the accounting for goodwill and intangible asset impairment. We hired additional resources and provided additional training to existing resources; and
- In order to ensure the quality and consistency of accounting treatments and interpretation across the impairment analysis process and maintain effective control activities, we designated one of our senior accounting personnel to provide enhanced oversight to monitor the process, provide guidance on accounting treatment and assumptions and ensure quality-control for the process.

Based on the actions taken, we determined that the previously reported material weaknesses have been remediated as of December 31, 2021.

Changes in Internal Control over Financial Reporting

Except for the Company’s remediation of the material weaknesses described above, there were no changes in our internal control over financial reporting that occurred during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. *Other Information*

Not applicable.

PART III

Item 10. *Directors, Executive Officers and Corporate Governance*

Information required by this item as to the Directors of the Company appearing under the caption “Election of Directors” in our 2022 Proxy Statement is incorporated herein by reference. Information required by this item as to the Executive Officers of the Company is included as Item 4A of this Annual Report on Form 10-K as permitted by Instruction 3 to Item 401(b) of Regulation S-K. Information required by Item 405 is set forth in the 2022 Proxy Statement under the heading “Delinquent section 16(a) Reports,” which information is incorporated herein by reference. Information required by Items 406 and 407(c)(3), (d)(4) and (d)(5) of Regulation S-K is set forth in the 2022 Proxy Statement under the headings “Information Regarding Meetings and Committees of the Board of Directors,” “Code of Ethical Business Conduct and Officer Code of Ethics” and “Stockholder Communications with the Board,” which information is incorporated herein by reference.

The Charters of the Audit Committee, Compensation Committee and Nominations and Corporate Governance Committee and the Corporate Governance Guidelines, Officer Code of Ethics and Code of Ethical Business Conduct are available free of charge on our website at www.chartindustries.com and in print to any stockholder who requests a copy. Requests for copies should be directed to Secretary, Chart Industries, Inc., 2200 Airport Industrial Drive, Ball Ground, Georgia 30107. We intend to disclose any amendments to the Code of Ethical Business Conduct or Officer Code of Ethics and any waiver of the Code of Ethical Business Conduct or Officer Code of Ethics granted to any Director or Executive Officer of the Company on our website.

Set forth below is a list of the members of our Board of Directors as of February 24, 2022:

Directors

STEVEN W. KRABLIN ⁽²⁾⁽³⁾

Chairman of the Board

Retired President, Chief Executive Officer and Chairman of the Board

T-3 Energy Services, Inc.

Oilfield services company that manufactures products used in the drilling, production and transportation of oil and gas

JILLIAN C. EVANKO

President, Chief Executive Officer and Director

Chart Industries, Inc.

CAREY CHEN ⁽¹⁾⁽³⁾

Chief Executive Officer

CGI Manufacturing Holdings LLC

Custom sheet metal fabricator of light to medium gauge material

PAULA M. HARRIS ⁽³⁾

Senior Vice President of Community Affairs and Foundation Executive Director

Houston Astros

Major league baseball club

LINDA A. HARTY ⁽¹⁾

Former Vice President Treasurer

Medtronic

Global company specializing in medical technology, services and solutions

SINGLETON B. MCALLISTER ^{(1) (2)}

Of Counsel and Senior Advisor

Husch Blackwell LLP

Law firm and affiliated lobbying and governmental affairs counseling firm

MICHAEL L. MOLININI ^{(1) (2)}

Retired Chief Executive Officer and President

Airgas, Inc.

Supplier of gases, welding equipment and supplies, and safety products

DAVID M. SAGEHORN ^{(1) (3)}

Retired Executive Vice President and Chief Financial Officer

Oshkosh Corporation

Global producer of specialty trucks, truck bodies, and access equipment used in defense, construction and service markets

ROGER A. STRAUCH ⁽²⁾

Chairman

The Roda Group

Early-stage venture capital group focused on investment opportunities that address the consequences of climate change and increased demand for low carbon energy

(1) Compensation Committee

(2) Nominations and Corporate Governance Committee

(3) Audit Committee

Item 11. Executive Compensation

The information required by Item 402 of Regulation S-K is set forth in the 2022 Proxy Statement under the heading “Executive and Director Compensation,” which information is incorporated herein by reference. The information required by Items 407(e)(4) and 407(e)(5) of Regulation S-K is set forth in the 2022 Proxy Statement under the headings “Compensation Committee Interlocks and Insider Participation” and “Compensation Committee Report,” respectively, which information is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is set forth in the 2022 Proxy Statement under the headings “Security Ownership of Certain Beneficial Owners” and “Equity Compensation Plan Information,” which information is incorporated herein by reference.

Item 13. Certain Relationships, Related Transactions, and Director Independence

The information required by this item is set forth in the 2022 Proxy Statement under the headings “Related Party Transactions” and “Director Independence,” which information is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

The information required by this item is set forth in the 2022 Proxy Statement under the heading “Principal Accounting Fees and Services,” which information is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this 2021 Annual Report on Form 10-K:

1. *Financial Statements.* The following consolidated financial statements of the Company and its subsidiaries and the reports of the Company's independent registered public accounting firm are incorporated by reference in Item 8:

Reports of Independent Registered Public Accounting Firm (PCAOB ID No. 34)

Consolidated Balance Sheets

Consolidated Statements of Income

Consolidated Statements of Comprehensive Income

Consolidated Statements of Cash Flows

Consolidated Statements of Equity

Notes to Consolidated Financial Statements

2. *Financial Statement Schedules.* The following additional information should be read in conjunction with the consolidated financial statements:

Schedule II Valuation and Qualifying Accounts for the Years Ended December 31, 2021, 2020 and 2019

All other financial statement schedules have been omitted since they are either not required, not applicable, or the information is otherwise included.

3. *Exhibits.* See the Index to Exhibits at page E-1 of this Annual Report on Form 10-K.

Item 16. Form 10-K Summary

None.

INDEX TO FINANCIAL STATEMENTS

Audited Consolidated Financial Statements:

Reports of Independent Registered Public Accounting Firm	F-1
Consolidated Balance Sheets	F-5
Consolidated Statements of Income	F-7
Consolidated Statements of Comprehensive Income	F-9
Consolidated Statements of Cash Flows	F-10
Consolidated Statements of Equity	F-12
Notes to Consolidated Financial Statements	F-13

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of Chart Industries, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Chart Industries, Inc. and subsidiaries (the “Company”) as of December 31, 2021 and 2020, the related consolidated statements of income, comprehensive income, equity, and cash flows, for each of the three years in the period ended December 31, 2021, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company’s internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 24, 2022, expressed an unqualified opinion on the Company’s internal control over financial reporting.

Adoption of New Accounting Standard

As discussed in Note 2 to the financial statements, the Company has changed its method for accounting for convertible instruments as a result of the adoption of Accounting Standards Update (ASU) No. 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entities Own Equity (Subtopic 815-40)* effective January 1, 2021 using the modified retrospective transition method.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Revenue—Contracts Recognized Over Time—Refer to Notes 2 and 5 to the financial statements

Critical Audit Matter Description

As of December 31, 2021, net sales were \$1,317.7 million, of which \$482.0 million was recognized over time. For contracts that contain language that transfers control to the customer over time, revenue is recognized as the Company satisfies the performance obligations by an allocation of the transaction price to the accounting period computed using input methods such as costs incurred.

The input method measures progress toward the satisfaction of the performance obligation by multiplying the transaction price allocated to the performance obligation by the percentage of incurred inputs as of the balance sheet date to the total estimated inputs at completion after giving effect to the most current estimates.

We identified revenue associated with in-process contracts recognized over time as a critical audit matter because of the judgments necessary for management to estimate total inputs used to recognize revenue for these contracts. Management's estimates of total inputs are subjective in nature resulting in a higher degree of audit effort and judgment. Changes in estimated inputs could have a significant impact on the timing of revenue recognition.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to estimates of total inputs used to recognize revenue for contracts over time included the following, among others:

- We tested the effectiveness of controls over certain revenue contracts recognized over time, including management's controls over the estimates of total inputs.
- We selected a sample of in process revenue contracts recognized over time and performed the following:
 - Tested the accuracy and completeness of the inputs incurred to date.
 - Evaluated the estimates of total inputs by:
 - Comparing estimates of total inputs to the original project budget and understanding changes in estimates.
 - Testing the accuracy of the remaining estimated costs by selecting costs, vouching the costs to supplier contracts or other supporting documents, and evaluating whether the estimated costs are appropriate.
 - Evaluating management's ability to achieve the estimates of total inputs by performing corroborating inquiries with the Company's project managers, engineers, and other relevant site personnel to understand the progress to date and the estimate of total inputs.
 - Comparing management's estimates for the selected contracts to inputs of similar contracts, when applicable.
- We evaluated management's ability to estimate total inputs accurately by comparing actual inputs to management's historical estimates for contracts that have been fulfilled.

Goodwill — Refer to Notes 2 and 9 to the financial statements

Critical Audit Matter Description

The Company's evaluation of goodwill for impairment involves the comparison of the fair value of each reporting unit to its carrying value annually in the fourth quarter or whenever events or changes in circumstances indicate that an evaluation should be completed. The Company determines the fair value of its reporting units using the income and market approaches. The determination of the fair value using the income approach requires management to make significant estimates and assumptions related to forecasts of future cash flows and discount rates. The determination of the fair value using the market approach requires management to make significant assumptions related to pricing multiples derived from similar companies. Changes to the assumptions and estimates may result in a significantly different estimate of the fair value of the reporting units, which could result in a different assessment of the recoverability of goodwill. The goodwill balance was \$952.7 million as of October 1, 2021 (the annual impairment testing date), of which \$87.1 million, \$434.8 million, \$255.6 million, and \$175.2 million was allocated to the Cryo Tank Solutions, Heat Transfer Systems, Specialty Products, and Repair, Service & Leasing reporting units, respectively. The fair values of Cryo Tank Solutions, Heat Transfer Systems, Specialty Products, and Repair, Service & Leasing reporting units exceeded their carrying values as of the measurement date and, therefore, no impairment was recognized.

We identified goodwill for Heat Transfer Systems and Repair, Service & Leasing as a critical audit matter because of the significant estimates and assumptions management makes to estimate the fair value of each reporting unit, the sensitivity of the valuations to changes in the assumptions, specifically related to forecasts of future revenue and operating margins and selection of the discount rate used in the income approach, and the selection of pricing multiples for similar companies used in the market approach. This required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists, when performing audit procedures to evaluate the reasonableness of these assumptions.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the forecasts of future revenues and operating margins ("forecasts"), and the selection of pricing multiples and discount rate included the following, among others:

- We evaluated management's ability to accurately forecast by comparing actual results to management's historical forecasts.

- We evaluated the reasonableness of management’s forecasts by comparing the forecasts to (1) historical results, (2) internal communications to management and the Board of Directors, and (3) forecasted information included in the Company press releases as well as in analyst and industry reports of the Company and companies in its peer group.
- We considered the impact of changes in the industry on management’s forecasts.
- With the assistance of our fair value specialists, we evaluated the reasonableness of the (1) valuation methodology and (2) valuation assumptions, including discount rate and pricing multiples by:
 - Testing the source information underlying the determination of the discount rate and pricing multiples and testing the mathematical accuracy of the calculation.
 - Developing a range of independent estimates and comparing those to the discount rate and pricing multiples selected by management.

Indefinite-Lived Intangible Assets — Refer to Notes 2 and 9 to the financial statements

Critical Audit Matter Description

The Company has trademarks and trade names that are indefinite-lived intangible assets. As of October 1, 2021 (the annual impairment testing date), the carrying value of the trademarks and trade names was \$154.9 million. Management estimates the fair value of the trademarks and trade names annually in the fourth quarter or whenever events or changes in circumstances indicate that an evaluation should be completed, using a relief from royalty method, which is a specific discounted cash flow method. The determination of the fair value requires management to make significant estimates and assumptions related to forecasts of future revenues and discount rates to estimate the royalty savings. Changes in these assumptions could have a significant impact on the fair value of trademarks and trade names and a significant change in fair value could cause a significant impairment.

We identified trademarks and trade names related to Air-X-Changers as a critical audit matter because of the significant estimates and assumptions management makes to estimate the fair value of the trademark and trade name, and the sensitivity of the valuation to changes in the assumptions related to forecasts of future revenues and selection of the discount rates used in the relief from royalty method. This required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists, when performing audit procedures to evaluate the reasonableness of these assumptions.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the forecasts of future revenues and the selection of the discount rate included the following, among others:

- We evaluated management’s ability to accurately forecast future revenues by comparing actual results to management’s historical forecasts.
- We evaluated the reasonableness of management’s forecast of future revenue by comparing the forecasts of future revenue to (1) historical results, (2) internal communications to management and the Board of Directors, and (3) forecasted information included in the Company press releases as well as in analyst and industry reports of the Company and companies in its peer group.
- We considered the impact of changes in the industry on management’s forecasts of future revenues.
- With the assistance of our fair value specialists, we evaluated the reasonableness of the (1) valuation methodology and (2) valuation assumptions, including discount rate by:
 - Testing the source information underlying the determination of the discount rate testing the mathematical accuracy of the calculation.
 - Developing a range of independent estimates and comparing those to the discount rate selected by management.

/s/ Deloitte & Touche LLP

Atlanta, Georgia

February 24, 2022

We have served as the Company's auditor since 2019.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of Chart Industries, Inc.:

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Chart Industries, Inc. and subsidiaries (the “Company”) as of December 31, 2021, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2021, of the Company and our report dated February 24, 2022, expressed an unqualified opinion on those financial statements and included an explanatory paragraph regarding the Company’s adoption of a new accounting standard.

As described in Management’s Report on Internal Control Over Financial Reporting, management excluded from its assessment the internal control over financial reporting at Cryogenic Gas Technologies, Inc., which was acquired on February 16, 2021, L.A. Turbine, which was acquired on July 1, 2021, AdEdge Holdings, LLC, which was acquired on August 27, 2021, and Earthly Labs Inc., which was acquired on December 14, 2021, and whose combined financial statements constitute \$285.6 million and \$249.2 million of total and net assets, respectively, as of December 31, 2021, and \$34.3 million and \$7.2 million of sales and operating income, respectively, for the year then ended. Accordingly, our audit did not include the internal control over financial reporting at Cryogenic Gas Technologies, Inc., L.A. Turbine, AdEdge Holdings, LLC, and Earthly Labs Inc.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP

Atlanta, Georgia

February 24, 2022

CHART INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(Dollars in millions, except per share amounts)

	December 31,	
	2021	2020
ASSETS		
Current Assets		
Cash and cash equivalents	\$ 122.2	\$ 125.1
Accounts receivable, less allowances of \$6.0 and \$8.4, respectively	236.3	200.8
Inventories, net	321.5	248.4
Unbilled contract revenue	93.5	79.4
Prepaid expenses	20.9	20.0
Other current assets	59.1	29.3
Total Current Assets	853.5	703.0
Property, plant and equipment, net	416.0	414.5
Goodwill	994.6	865.9
Identifiable intangible assets, net	556.1	493.1
Equity method investments	99.6	5.3
Investments in equity securities	77.8	73.6
Other assets	46.2	15.1
TOTAL ASSETS	\$ 3,043.8	\$ 2,570.5
LIABILITIES AND EQUITY		
Current Liabilities		
Accounts payable	\$ 175.9	\$ 140.1
Customer advances and billings in excess of contract revenue	148.5	118.9
Accrued salaries, wages and benefits	27.1	39.7
Accrued income taxes	16.1	46.5
Current portion of warranty reserve	9.7	11.0
Current convertible notes	255.9	220.9
Operating lease liabilities, current	5.8	5.1
Other current liabilities	54.9	52.6
Total Current Liabilities	693.9	634.8
Long-term debt	600.8	221.6
Long-term deferred tax liabilities	59.8	60.2
Accrued pension liabilities	1.6	9.6
Operating lease liabilities, non-current	21.4	23.6
Other long-term liabilities	41.1	41.4
Total Liabilities	1,418.6	991.2

CHART INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(Dollars in millions, except per share amounts)

	December 31,	
	2021	2020
Equity		
Common stock, par value \$0.01 per share — 150,000,000 shares authorized, 36,548,330 and 36,185,829 shares issued and outstanding at December 31, 2021 and 2020, respectively	0.4	0.4
Additional paid-in capital	779.0	780.8
Treasury Stock; 760,782 shares at both December 31, 2021 and 2020	(19.3)	(19.3)
Retained earnings	878.2	808.4
Accumulated other comprehensive (loss) income	(21.7)	2.4
Total Chart Industries, Inc. Shareholders' Equity	1,616.6	1,572.7
Noncontrolling interests	8.6	6.6
Total Equity	1,625.2	1,579.3
TOTAL LIABILITIES AND EQUITY	\$ 3,043.8	\$ 2,570.5

The accompanying notes are an integral part of these consolidated financial statements.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(Dollars and shares in millions, except per share amounts)

	Year Ended December 31,		
	2021	2020	2019
Sales	\$ 1,317.7	\$ 1,177.1	\$ 1,215.5
Cost of sales	993.5	845.0	918.0
Gross profit	324.2	332.1	297.5
Selling, general and administrative expenses	196.8	178.2	205.7
Amortization expense	38.9	45.7	39.8
Asset impairments	—	16.0	—
Operating expenses	235.7	239.9	245.5
Operating income	88.5	92.2	52.0
Interest expense, net	10.7	17.7	14.7
Financing costs amortization	8.3	4.3	3.0
Unrealized (gain) loss on investment in equity securities	(3.2)	(13.1)	0.1
Realized gain on investment in equity securities	(2.6)	—	—
Foreign currency loss (gain)	0.9	0.9	(0.4)
Gain on bargain purchase	—	(5.0)	—
Other expense, net	0.3	2.2	—
Income from continuing operations before income taxes and equity in earnings of unconsolidated affiliates, net	74.1	85.2	34.6
Income tax expense (benefit):			
Current	21.4	13.9	19.0
Deferred	(7.9)	1.0	(16.2)
Income tax expense, net	13.5	14.9	2.8
Income from continuing operations before equity in earnings of unconsolidated affiliates, net	60.6	70.3	31.8
Equity in earnings of unconsolidated affiliates, net	0.3	—	—
Net income from continuing operations	60.9	70.3	31.8
Income from discontinued operations, net of tax	—	239.2	15.0
Net income	60.9	309.5	46.8
Less: Income attributable to noncontrolling interests of continuing operations, net of taxes	1.8	1.4	0.4
Net income attributable to Chart Industries, Inc.	\$ 59.1	\$ 308.1	\$ 46.4

CHART INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(Dollars and shares in millions, except per share amounts)

Net income attributable to Chart Industries, Inc.			
Income from continuing operations	\$ 59.1	\$ 68.9	\$ 31.4
Income from discontinued operations, net of tax	—	239.2	15.0
Net income attributable to Chart Industries, Inc.	\$ 59.1	\$ 308.1	\$ 46.4
Basic earnings per common share attributable to Chart Industries, Inc.			
Income from continuing operations	\$ 1.66	\$ 1.95	\$ 0.93
Income from discontinued operations	—	6.76	0.44
Net income attributable to Chart Industries, Inc.	\$ 1.66	\$ 8.71	\$ 1.37
Diluted earnings per common share attributable to Chart Industries, Inc.			
Income from continuing operations	\$ 1.44	\$ 1.89	\$ 0.89
Income from discontinued operations	—	6.56	0.43
Net income attributable to Chart Industries, Inc.	\$ 1.44	\$ 8.45	\$ 1.32
Weighted-average number of common shares outstanding:			
Basic	35.61	35.38	33.91
Diluted	41.11	36.45	35.17

The accompanying notes are an integral part of these consolidated financial statements.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Dollars in millions)

	Year Ended December 31,		
	2021	2020	2019
Net income	\$ 60.9	\$ 309.5	\$ 46.8
Other comprehensive (loss) income:			
Foreign currency translation adjustments	(29.0)	38.8	(7.5)
Defined benefit pension plan:			
Actuarial gain (loss) on remeasurement	5.9	(1.9)	0.3
Amortization of net loss	1.0	1.2	1.3
Defined benefit pension plan	6.9	(0.7)	1.6
Other comprehensive (loss) income, before tax	(22.1)	38.1	(5.9)
Income tax (expense) benefit related to defined benefit pension plan	(2.0)	0.2	(0.1)
Other comprehensive (loss) income, net of taxes	(24.1)	38.3	(6.0)
Comprehensive income	36.8	347.8	40.8
Less: Comprehensive income attributable to noncontrolling interests, net of taxes	(1.8)	(1.4)	(0.4)
Comprehensive income attributable to Chart Industries, Inc.	\$ 35.0	\$ 346.4	\$ 40.4

The accompanying notes are an integral part of these consolidated financial statements.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in millions)

	Year Ended December 31,		
	2021	2020	2019
OPERATING ACTIVITIES			
Net income	\$ 60.9	\$ 309.5	\$ 46.8
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	80.6	85.2	78.8
Employee share-based compensation expense	11.2	8.9	9.0
Financing costs amortization	8.3	4.3	3.0
Interest accretion of convertible notes discount	—	8.0	7.6
Unrealized (gain) loss on investment in equity securities	(3.2)	(13.1)	0.1
Realized gain on investment of equity securities	(2.6)	—	—
Unrealized foreign currency transaction (gain) loss	(1.1)	2.3	0.6
Equity in earnings of unconsolidated affiliates, net	(0.3)	—	—
Deferred income tax (benefit) expense	(7.9)	1.0	(16.2)
Gain on sale of business	—	(249.4)	—
Asset impairments	—	16.0	—
Gain on bargain purchase	—	(5.0)	—
Other non-cash operating activities	(4.8)	1.5	0.8
Changes in assets and liabilities, net of acquisitions:			
Accounts receivable	(31.2)	(10.1)	23.6
Inventory	(78.1)	(34.9)	9.4
Unbilled contract revenue and other assets	(71.2)	(5.0)	(1.6)
Accounts payable and other liabilities	(10.4)	62.8	(20.9)
Customer advances and billings in excess of contract revenue	28.5	(9.3)	(7.1)
Net Cash (Used In) Provided By Operating Activities	(21.3)	172.7	133.9
INVESTING ACTIVITIES			
Proceeds from sale of businesses	—	317.5	—
Acquisition of businesses, net of cash acquired	(205.1)	(51.9)	(603.9)
Investments ⁽¹⁾	(103.9)	(50.8)	(3.3)
Capital expenditures	(52.7)	(37.9)	(36.2)
Proceeds from sale of assets	—	7.9	—
Government grants	0.5	0.2	0.7
Net Cash (Used In) Provided By Investing Activities	(361.2)	185.0	(642.7)

CHART INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in millions)

	Year Ended December 31,		
	2021	2020	2019
FINANCING ACTIVITIES			
Borrowings on revolving credit facilities	1,361.1	215.0	235.8
Repayments on revolving credit facilities	(873.6)	(223.1)	(451.1)
Borrowings on term loan	—	—	450.0
Repayments on term loan	(103.1)	(344.1)	(2.8)
Payments for debt issuance costs	(3.0)	(1.0)	(13.6)
Issuance of shares	—	—	295.8
Payments for equity issuance costs	—	—	(9.5)
Proceeds from exercise of stock options	6.9	11.0	9.4
Common stock repurchases from share-based compensation plans	(6.4)	(1.9)	(2.0)
Common stock repurchases ⁽²⁾	—	(19.3)	—
Dividend distribution to noncontrolling interests	—	—	(0.4)
Net Cash Provided By (Used in) Financing Activities	381.9	(363.4)	511.6
Effect of exchange rate changes on cash and cash equivalents	(3.1)	11.8	(1.9)
Net (decrease) increase in cash, cash equivalents, restricted cash, and restricted cash equivalents ⁽³⁾	(3.7)	6.1	0.9
Cash, cash equivalents, restricted cash, and restricted cash equivalents at beginning of period	126.1	120.0	119.1
CASH, CASH EQUIVALENTS, RESTRICTED CASH, AND RESTRICTED CASH EQUIVALENTS AT END OF PERIOD ⁽⁴⁾	\$ 122.4	\$ 126.1	\$ 120.0

⁽¹⁾ Non-cash investing activities of \$7.0 related to the conversion of a note receivable into an investment in equity securities in Stabilis Energy, Inc. during the year ended December 31, 2019.

⁽²⁾ Includes \$19.3 in shares repurchased through our share repurchase program. On March 11, 2021, the share repurchase program expired with no further repurchases. Refer to Note 2, "Significant Accounting Policies" for further information.

⁽³⁾ Net (decrease) increase in cash, cash equivalents, restricted cash, and restricted cash equivalents represents cash flows of consolidated operations for all periods presented. For cash flows of discontinued operations, refer to Note 3, "Discontinued Operations."

⁽⁴⁾ Includes cash and restricted cash equivalents of \$0.2 and \$1.0 in other current assets as of December 31, 2021 and December 31, 2020, respectively, and \$1.0 in other assets as of December 31, 2019. For further information regarding restricted cash and restricted cash equivalents balances, refer to Note 10, "Debt and Credit Arrangements."

The accompanying notes are an integral part of these consolidated financial statements.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY
(Dollars and shares in millions)

	Common Stock		Additional Paid-in Capital	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive (Loss) Income	Non- controlling Interests	Total Equity
	Shares Outstanding	Amount						
Balance at December 31, 2018	31.36	\$ 0.3	\$ 460.2	\$ —	\$ 453.9	\$ (29.9)	\$ 4.5	\$ 889.0
Net income	—	—	—	—	46.4	—	0.4	46.8
Other comprehensive loss	—	—	—	—	—	(6.0)	—	(6.0)
Common stock issuance, net of equity issuance costs ⁽¹⁾	4.03	0.1	286.2	—	—	—	—	286.3
Share-based compensation expense	—	—	9.0	—	—	—	—	9.0
Common stock issued from share-based compensation plans	0.30	—	9.4	—	—	—	—	9.4
Common stock repurchases from share- based compensation plans	0.11	—	(2.0)	—	—	—	—	(2.0)
Dividend distribution to noncontrolling interest	—	—	—	—	—	—	(0.4)	(0.4)
Other	—	—	—	—	—	—	0.3	0.3
Balance at December 31, 2019	35.80	0.4	762.8	—	500.3	(35.9)	4.8	1,232.4
Net income	—	—	—	—	308.1	—	1.4	309.5
Other comprehensive income	—	—	—	—	—	38.3	—	38.3
Share-based compensation expense	—	—	8.9	—	—	—	—	8.9
Common stock issued from share-based compensation plans	0.42	—	11.0	—	—	—	—	11.0
Common stock repurchases from share- based compensation plans	(0.03)	—	(1.9)	—	—	—	—	(1.9)
Common stock repurchases ⁽²⁾	—	—	—	(19.3)	—	—	—	(19.3)
Other	—	—	—	—	—	—	0.4	0.4
Balance at December 31, 2020	36.19	0.4	780.8	(19.3)	808.4	2.4	6.6	1,579.3
Net income	—	—	—	—	59.1	—	1.8	60.9
Cumulative effect of change in accounting principle ⁽³⁾	—	—	(36.9)	—	10.7	—	—	(26.2)
Other comprehensive income	—	—	—	—	—	(24.1)	—	(24.1)
Share-based compensation expense	—	—	11.2	—	—	—	—	11.2
Common stock issued from share-based compensation plans	0.26	—	6.9	—	—	—	—	6.9
Common stock repurchases from share- based compensation plans	(0.04)	—	(6.4)	—	—	—	—	(6.4)
Acquisition of Earthly Labs Inc.	0.14	—	23.4	—	—	—	—	23.4
Other	—	—	—	—	—	—	0.2	0.2
Balance at December 31, 2021	36.55	\$ 0.4	\$ 779.0	\$ (19.3)	\$ 878.2	\$ (21.7)	\$ 8.6	\$ 1,625.2

⁽¹⁾ Equity issuance costs were \$9.5 during the year ended December 31, 2019.

⁽²⁾ Includes \$19.3 in shares repurchased through our share repurchase program. Refer to Note 2, “Significant Accounting Policies,” for further information.

⁽³⁾ Refer to Note 2, “Significant Accounting Policies” for discussion regarding cumulative effect of change in accounting principle.

The accompanying notes are an integral part of these consolidated financial statements.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollars and shares in millions, except per share amounts)

NOTE 1 — Nature of Operations and Principles of Consolidation

Nature of Operations: We are a leading independent global manufacturer of highly engineered cryogenic equipment servicing multiple applications in the industrial gas and clean energy markets. Our unique product portfolio is used in every phase of the liquid gas supply chain, including upfront engineering, service and repair. Being at the forefront of the clean energy transition, Chart is a leading provider of technology, equipment and services related to liquefied natural gas, hydrogen, biogas, CO₂ Capture and water treatment, among other applications. We are committed to excellence in environmental, social and corporate governance (ESG) issues both for our company as well as our customers. With over 25 global locations from the United States to Asia, Australia, India, Europe and South America, we maintain accountability and transparency to our team members, suppliers, customers and communities.

Principles of Consolidation: The consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (“GAAP”) and include the accounts of Chart Industries, Inc. and its subsidiaries. Intercompany accounts and transactions are eliminated in consolidation.

Reclassifications: On October 1, 2020, we closed on the sale of our cryobiological products business to Cryoport, Inc. (NASDAQ: CYRX). Refer to Note 3, “Discontinued Operations,” for further information. Certain reclassifications have been made to the 2020 consolidated balance sheet in order to conform to the 2021 presentation.

NOTE 2 — Significant Accounting Policies

Use of Estimates: The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements. These estimates may also affect the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates and assumptions. We have experienced temporary facility closures while awaiting appropriate government approvals in certain jurisdictions. The Covid-19 pandemic could also disrupt our supply chain and materially adversely impact our ability to secure supplies for our facilities, which could materially adversely affect our operations. There may also be long-term effects on our customers in and the economies of affected countries. As a result of these uncertainties, actual results could differ from those estimates and assumptions. If the economy or markets in which we operate remain weak or deteriorate further, our business, financial condition and results of operations may be materially and adversely impacted.

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act (the “CARES Act”) was signed into law in the United States. The CARES Act, among other things, includes modifications to net operating loss carryforwards provisions and the net interest expense deduction, and deferment of social security tax payments. We have not elected to avail ourselves of the CARES Act.

Share Repurchase Program: On March 11, 2020, our Board of Directors authorized a share repurchase program for up to \$75 million of the Company’s common stock over the next twelve months through various means, including open market transactions, block purchases, privately negotiated transactions or otherwise in accordance with applicable federal securities laws, including Rule 10b-18 and Rule 10b5-1 of the Securities Exchange Act of 1934, as amended. During the first quarter of 2020, we repurchased 0.76 shares of our common stock at an average price of \$25.40 per share for a total purchase price of \$19.3. We suspended the program on March 20, 2020 in light of uncertainty resulting from the Covid-19 pandemic and the desire to conserve cash resources. On March 11, 2021, the share repurchase program expired with no further repurchases since the Suspension Date.

Cash, Cash Equivalents, Restricted Cash, and Restricted Cash Equivalents: We consider all investments with an initial maturity of three months or less when purchased to be cash equivalents. See Note 10, “Debt and Credit Arrangements” for additional information about restricted cash and restricted cash equivalents, which are included in other current assets in the accompanying consolidated balance sheets.

Accounts Receivable, Net of Allowances: Accounts receivable includes amounts billed and currently due from customers. The amounts due are stated at their net estimated realizable value. We maintain an allowance for doubtful accounts to provide for the estimated amount of receivables that will not be collected. The allowance is based upon an assessment of customer creditworthiness, historical payment experience, the age of outstanding receivables and collateral to the extent applicable. In

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

addition, we estimate expected credit losses based on historical loss information then adjust the estimates based on current, reasonable and supportable forecast economic conditions. Past-due trade receivable balances are written off when our internal collection efforts have been unsuccessful. As a practical expedient, we do not adjust the promised amount of consideration for the effects of a significant financing component when we expect, at contract inception, that the period between our transfer of a promised product or service to a customer and when the customer pays for that product or service will be one year or less. We do not typically include extended payment terms in our contracts with customers.

Inventories: Inventories are stated at the lower of cost or net realizable value with cost being determined by the first-in, first-out (“FIFO”) method. We determine inventory valuation reserves based on a combination of factors. In circumstances where we are aware of a specific problem in the valuation of a certain item, a specific reserve is recorded to reduce the item to its net realizable value. We also recognize reserves based on the actual usage in recent history and projected usage in the near-term.

Unbilled Contract Revenue: Unbilled contract revenue represents contract assets resulting from revenue recognized over time in excess of the amount billed to the customer and the amount billed to the customer is not just subject to the passage of time. Billing requirements vary by contract but are generally structured around the completion of certain milestones. These contract assets are generally classified as current.

Property, Plant and Equipment: Capital expenditures for property, plant and equipment are recorded at cost. Expenditures for maintenance and repairs are charged to expense as incurred, whereas major improvements that extend the useful life are capitalized. The cost of applicable assets is depreciated over their estimated useful lives. Depreciation is computed using the straight-line method for financial reporting purposes and accelerated methods for income tax purposes.

Lessee Accounting: At lease inception, we determine if an arrangement is a lease and if it includes options to extend or terminate the lease if it is reasonably certain that the options will be exercised. Lease expense for lease payments is recognized on a straight-line basis over the lease term. Operating leases are recognized as right-of-use (“ROU”) assets and are included within property, plant and equipment, net, and lease liabilities are included in operating lease liabilities, current and operating lease liabilities, non-current in our consolidated balance sheets. ROU assets represent our right to use an underlying asset for the lease term, and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized on the lease commencement date based on the present value of lease payments over the lease term. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on the information available on the lease commencement date in determining the present value of lease payments.

Lessor Accounting: Similar to lessee accounting, at lease inception we determine if an arrangement is a lease. The net investment of our lease receivables is measured at the commencement date as the present value of the lease payments not yet received. Operating leases are reported at cost as equipment leased to others within property, plant and equipment, net in our consolidated balance sheets and depreciated based on their useful lives on a straight-line basis. Sales from sales-type and operating leases are presented net of sales tax and other related taxes. Interest income is recognized over the lease term using the effective interest method and is classified as interest expense, net in our consolidated statements of income. Lease payments from operating leases are recorded as income on a straight-line basis over the lease term.

Long-lived Assets: We monitor our property, plant, equipment, and finite-lived intangible assets for impairment indicators on an ongoing basis. Assets are grouped and tested at the lowest level for which identifiable cash flows are available. If impairment indicators exist, we perform the required analysis and record impairment charges, if applicable. In conducting our analysis, we compare the undiscounted cash flows expected to be generated from the long-lived assets to the related net book values. If the undiscounted cash flows exceed the net book value, the long-lived assets are considered not to be impaired. If the net book value exceeds the undiscounted cash flows, an impairment loss is measured and recognized. An impairment loss is measured as the difference between the net book value and the fair value of the long-lived assets. Fair value is estimated from discounted future net cash flows (for assets held and used) or net realizable value (for assets held for sale). Changes in economic or operating conditions impacting these estimates and assumptions could result in the impairment of long-lived assets. We amortize intangible assets that have finite lives over their estimated useful lives.

Goodwill and Indefinite-Lived Intangible Assets: Goodwill is recognized as the excess cost of an acquired entity over the net amount assigned to assets acquired and liabilities assumed. We do not amortize goodwill or indefinite-lived intangible assets, but review them for impairment annually in the fourth quarter or whenever events or changes in circumstances indicate that an evaluation should be completed.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Goodwill is analyzed on a reporting unit basis. The reporting units are the same as our operating and reportable segments, which are as follows: Cryo Tank Solutions, Heat Transfer Systems, Specialty Products and Repair Service & Leasing. Prior to October 1, 2020, our reporting units, which were the same as our operating and reportable segments, were as follows: Distribution and Storage Eastern Hemisphere (“D&S East”), Distribution and Storage Western Hemisphere (“D&S West”), Energy & Chemicals (“E&C”) Cryogenics and E&C FinFans. We first evaluate qualitative factors, such as macroeconomic conditions and our overall financial performance to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill. We then evaluate how significant each of the identified factors could be to the fair value or carrying amount of a reporting unit and weigh these factors in totality in forming a conclusion of whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount (the “Step 0 Test”). If we determine that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, the first step of the goodwill impairment test is not necessary. Otherwise, we would proceed to the first step of the goodwill impairment test.

Alternatively, we may also bypass the Step 0 Test and proceed directly to the first step of the goodwill impairment test. Under the first step (“Step 1”), we estimate the fair value of the reporting units by considering income and market approaches to develop fair value estimates, which are weighted to arrive at a fair value estimate for each reporting unit. With respect to the income approach, a model has been developed to estimate the fair value of each reporting unit. This fair value model incorporates estimates of future cash flows, estimates of allocations of certain assets and cash flows among reporting units, estimates of future growth rates and management’s judgment regarding the applicable discount rates to use to discount such estimates of cash flows. With respect to the market approach, a guideline company method is employed whereby pricing multiples are derived from companies with similar assets or businesses to estimate fair value of each reporting unit. If the fair value of the reporting unit exceeds the carrying amount of the net assets assigned to that reporting unit, then goodwill is not impaired and no further testing is required. However, if the fair value of the reporting unit is less than its carrying amount, the impairment charge is based on the excess of a reporting unit’s carrying amount over its fair value (i.e., we would measure the charge based on the result from Step 1).

In order to assess the reasonableness of the calculated fair values of the reporting units, we also compare the sum of the reporting units’ fair values to the market capitalization and calculate an implied control premium (the excess of the sum of the reporting units’ fair values over the market capitalization). We evaluate the control premium by comparing it to control premiums of recent comparable transactions. If the implied control premium is not reasonable in light of this assessment, we reevaluate the fair value estimates of the reporting units by adjusting the discount rates and other assumptions as necessary.

Changes to the assumptions and estimates used throughout the steps described above may result in a significantly different estimate of the fair value of the reporting units, which could result in a different assessment of the recoverability of goodwill and result in future impairment charges.

With respect to indefinite-lived intangible assets, we first evaluate relevant events and circumstances to determine whether it is more likely than not that the fair value of an indefinite-lived intangible asset is less than its carrying amount. If, in weighing all relevant events and circumstances in totality, we determine that it is more likely than not that an indefinite-lived intangible asset is not impaired, no further action is necessary. Otherwise, we would determine the fair value of indefinite-lived intangible assets and perform a quantitative impairment assessment by comparing the indefinite-lived intangible asset’s fair value to its carrying amount. We may bypass such a qualitative assessment and proceed directly to the quantitative assessment. We estimate the fair value of the indefinite-lived assets using the income approach. This may include the relief from royalty method or use of a model similar to the one described above related to goodwill which estimates the future cash flows attributed to the indefinite-lived intangible asset and then discounting these cash flows back to a present value. Under the relief from royalty method, fair value is estimated by discounting the royalty savings, as well as any tax benefits related to ownership to a present value. The fair value from either approach is compared to the carrying value and an impairment is recorded if the fair value is determined to be less than the carrying value.

Equity Method Investments: Investments, including certain of our joint ventures, where Chart has the ability to exercise significant influence over, but does not possess control, are accounted for using the equity method of accounting. Judgment regarding the level of influence over each investment includes considering key factors such as our ownership interest, our representation on the investee’s board of directors and participation in policy-making decisions. We recognize the equity method investee’s proportionate share of the earnings and losses and classify as equity in earnings of unconsolidated affiliates, net in our consolidated statements of income and comprehensive income. We evaluate our equity method investments for impairment whenever events or changes in circumstances indicate that the carrying amounts of such investments may not be

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

recoverable. If a decline in the value of an equity method investment is determined to be other than temporary, an impairment loss is recognized in earnings for the amount by which the carrying amount of the investment exceeds its estimated fair value.

Investments in Equity Securities: We measure certain of our investments in equity securities where we have no significant influence and generally less than 20% ownership interest at fair value on a recurring basis according to the fair value hierarchy as defined below. We reassess measurement options for these investments on a quarterly basis. Mark-to-market fair value adjustments in these investments in equity securities are classified as unrealized loss (gain) on investments in equity securities in our consolidated statements of income and comprehensive income. Investments in equity securities for which there is no readily determinable fair value are measured at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer.

Customer Advances and Billings in Excess of Contract Revenue: Our contract liabilities consist of advance customer payments, billings in excess of revenue recognized and deferred revenue. Our contract assets and liabilities are reported in a net position on a contract-by-contract basis at the end of each reporting period. We classify advance customer payments and billings in excess of revenue recognized as current. We classify deferred revenue as current or non-current based on the timing of when we expect to recognize revenue. The current portion of deferred revenue is included in customer advances and billings in excess of contract revenue in our consolidated balance sheets. Long-term deferred revenue is included in other long-term liabilities in our consolidated balance sheets.

Convertible Debt: After the adoption of Accounting Standards Update (“ASU”) 2020-06, our convertible notes due November 2024 are no longer bifurcated into separate liability and equity components in our December 31, 2021 consolidated balance sheets. For further discussion refer to the “Recently Adopted Accounting Standards” section below.

Prior to the adoption of ASU 2020-06 we determined that the conversion option within our convertible notes due November 2024 was not clearly and closely related to the debt instrument host, however, the conversion option met a scope exception to derivative instrument accounting since the conversion feature is indexed to our common stock and meets equity classification criteria. Convertible debt instruments exempt from derivative accounting and subject to cash settlement of the conversion option were recognized by bifurcating the principal balance into a liability component and an equity component where the fair value of the liability component is estimated by calculating the present value of its cash flows discounted at an interest rate that we would have received for similar debt instruments that have no conversion rights (the “straight-debt rate”), and the equity component is the residual amount, net of tax, which creates a discount on our convertible notes due November 2024. Prior to January 1, 2021, we recognized non-cash interest accretion expense related to the carrying amount of our convertible notes due November 2024 which was accreted back to its principal amount over the expected life of the debt, which is also the stated life of the debt.

Financial Instruments: The fair values of cash equivalents, accounts receivable, accounts payable and short-term bank debt approximate their carrying amount because of the short maturity of these instruments.

To minimize credit risk from trade receivables, we review the financial condition of potential customers in relation to established credit requirements before sales credit is extended and monitor the financial condition and payment history of customers to help ensure timely collections and to minimize losses. Additionally, for certain domestic and foreign customers, we require advance payments, letters of credit, bankers’ acceptances, and other such guarantees of payment. Certain customers also require us to issue letters of credit or performance bonds, particularly in instances where advance payments are involved, as a condition of placing the order.

Fair Value Measurements: We measure our financial assets and liabilities at fair value on a recurring basis using a three-tier fair value hierarchy, which prioritizes the inputs used in the valuation methodologies. The three levels of inputs used to measure fair value are as follows:

Level 1 — Valuations based on quoted prices for identical assets and liabilities in active markets.

Level 2 — Valuations based on observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.

Level 3 — Valuations based on unobservable inputs reflecting our own assumptions, consistent with reasonably available assumptions made by other market participants. These valuations require significant judgment.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Derivative Financial Instruments: We utilize certain derivative financial instruments to enhance our ability to manage foreign currency risk that exists as part of ongoing business operations. Derivative instruments are entered into for periods consistent with related underlying exposures and do not constitute positions independent of those exposures. We do not enter into contracts for speculative purposes nor are we a party to any leveraged derivative instrument. We are exposed to foreign currency exchange risk as a result of transactions in currencies other than the functional currency of certain subsidiaries. We utilize foreign currency forward purchase and sale contracts to manage the volatility associated with foreign currency purchases and certain intercompany transactions in the normal course of business. Contracts typically have maturities of less than one year. Principal currencies include the U.S. dollar, the euro, the Chinese yuan, the Czech koruna, the Australian dollar, the British pound, the Canadian dollar, the Indian rupee and the Japanese yen. Our foreign currency forward contracts do not qualify as hedges as defined by accounting guidance. Foreign currency forward contracts are measured at fair value and recorded on the consolidated balance sheets as other current liabilities or assets. Changes in their fair value are recorded in the consolidated statements of income as foreign currency gains or losses. Our foreign currency forward contracts are not exchange traded instruments and, accordingly, the valuation is performed using Level 2 inputs as defined above. Gains or losses on settled or expired contracts are recorded in the consolidated statements of income as foreign currency gains or losses.

Product Warranties: We provide product warranties with varying terms and durations for the majority of our products. We estimate product warranty costs and accrue for these costs as products are sold with a charge to cost of sales. Factors considered in estimating warranty costs include historical and projected warranty claims, historical and projected cost-per-claim, and knowledge of specific product issues that are outside of typical experience. Warranty accruals are evaluated and adjusted as necessary based on actual claims experience and changes in future claim and cost estimates.

Business Combinations: We account for business combinations in accordance with Accounting Standards Codification (“ASC”) ASC 805, “Business Combinations.” We recognize and measure identifiable assets acquired and liabilities assumed based on their estimated fair values. The excess of the consideration transferred over the fair value of the net assets acquired, including identifiable intangible assets, is assigned to goodwill. As additional information becomes available, we may further revise the preliminary acquisition consideration allocation during the remainder of the measurement period, which shall not exceed twelve months from the closing of the acquisition.

Identifiable finite-lived intangible assets generally consist of customer relationships, unpatented technology, patents and trademarks and trade names and are amortized over their estimated useful lives which generally range from 2 to 15 years. Identifiable indefinite-lived intangible assets generally consist of trademarks and trade names and are subject to impairment testing on at least an annual basis. We estimate the fair value of identifiable intangible assets under income approaches where the fair value models incorporate estimates of future cash flows, estimates of allocations of certain assets and cash flows, estimates of future growth rates, and management’s judgment regarding the applicable discount rates to use to discount such estimates of cash flows.

We expense transaction related costs, including legal, consulting, accounting and other costs, in the periods in which the costs are incurred.

Revenue Recognition: Revenue is recognized when (or as) we satisfy performance obligations by transferring a promised good or service, an asset, to a customer. An asset is transferred to a customer when, or as, the customer obtains control over that asset. In most contracts, the transaction price includes both fixed and variable consideration. The variable consideration contained within our contracts with customers includes discounts, rebates, refunds, credits, price concessions, incentives, performance bonuses, penalties and other similar items. When a contract includes variable consideration, we evaluate the estimate of the variable consideration to determine whether the estimate needs to be constrained; therefore, we include the variable consideration in the transaction price only to the extent that it is probable that a significant reversal of the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. Variable consideration estimates are updated at each reporting date. When a contract includes multiple performance obligations, the contract price is allocated among the performance obligations based upon the stand alone selling prices. When the period between when we transfer a promised good or service to a customer and when the customer pays for that good or service is expected, at contract inception, to be one year or less, we do not adjust for the effects of a significant financing component.

For brazed aluminum heat exchangers, air cooled heat exchangers, cold boxes, liquefied natural gas fueling stations, engineered tanks, and repair services, most contracts contain language that transfers control to the customer over time. For these contracts, revenue is recognized as we satisfy the performance obligations by an allocation of the transaction price to the

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

accounting period computed using input methods such as costs incurred. Input methods recognize revenue on the basis of the entity's efforts or inputs to the satisfaction of a performance obligation relative to the total expected inputs to the satisfaction of that performance obligation. The costs incurred input method measures progress toward the satisfaction of the performance obligation by multiplying the transaction price of the performance obligation by the percentage of incurred costs as of the balance sheet date to the total estimated costs at completion after giving effect to the most current estimates. Timing of amounts billed on contracts varies from contract to contract and could cause significant variation in working capital needs. Revisions to estimated cost to complete that result from inefficiencies in our performance that were not expected in the pricing of the contract are expensed in the period in which these inefficiencies become known. Contract modifications can change a contract's scope, price, or both. Approved contract modifications are accounted for as either a separate contract or as part of the existing contract depending on the nature of the modification.

For standard industrial gas and LNG tanks and some products identified in the prior paragraph with contract language that does not meet the over time recognition requirements, the contract with the customer contains language that transfers control to the customer at a point in time. For these contracts, revenue is recognized when we satisfy our performance obligation to the customer. Timing of amounts billed on contracts varies from contract to contract. The specific point in time when control transfers depends on the contract with the customer, contract terms that provide for a present obligation to pay, physical possession, legal title, risk and rewards of ownership, acceptance of the asset, and bill-and-hold arrangements may impact the point in time when control transfers to the customer. We recognize revenue under bill-and-hold arrangements when control transfers and the reason for the arrangement is substantive, the product is separately identified as belonging to the customer, the product is ready for physical transfer and we do not have the ability to use the product or direct it to another customer.

Incremental contract costs are expensed when incurred when the amortization period of the asset that would have been recognized is one year or less; otherwise, incremental contract costs are recognized as an asset and amortized over time as promised goods and services are transferred to a customer. When losses are expected to be incurred on a contract, we recognize the entire anticipated loss in the accounting period when the loss becomes evident. The loss is recognized when the current estimate of the consideration we expect to receive, modified to include unconstrained variable consideration instead of constrained variable consideration, is less than the current estimate of total costs for the contract.

Taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction, that are collected by us from a customer, are excluded from revenue.

Shipping and handling fee revenues and the related expenses are reported as fulfillment revenues and expenses for all customers because we have adopted the practical expedient contained in ASC 606-10-25-18B. Therefore, all shipping and handling costs associated with outbound freight are accounted for as fulfillment costs and are included in cost of sales. Amounts billed to customers for shipping are classified as sales, and the related costs are classified as cost of sales on the consolidated statements of income. Shipping revenue of \$11.8, \$10.6, and \$11.3 for the years ended December 31, 2021, 2020 and 2019, respectively, are included in sales. Shipping costs of \$17.6, \$15.0, and \$15.8 for the years ended December 31, 2021, 2020 and 2019, respectively, are included in cost of sales.

Cost of Sales: Manufacturing expenses associated with sales are included in cost of sales. Cost of sales includes all materials, direct and indirect labor, inbound freight, purchasing and receiving, inspection, internal transfers, and distribution and warehousing of inventory. In addition, shop supplies, facility maintenance costs, manufacturing engineering, project management, and depreciation expense for assets used in the manufacturing process are included in cost of sales on the consolidated statements of income.

Selling, General and Administrative ("SG&A") Expenses: SG&A expenses include selling, marketing, customer service, product management, design engineering, and other administrative expenses not directly supporting the manufacturing process, as well as depreciation expense associated with non-manufacturing assets. In addition, SG&A expenses include corporate operating expenses for executive management, accounting, tax, treasury, corporate development, human resources, information technology, investor relations, legal, internal audit and risk management.

Advertising Costs: We incurred advertising costs of \$3.9, \$2.7, and \$4.0 for the years ended December 31, 2021, 2020 and 2019, respectively. Such costs are expensed as incurred and included in SG&A expenses in the consolidated statements of income.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Research and Development Costs: We incurred research and development costs of \$12.7, \$9.1, and \$9.2 for the years ended December 31, 2021, 2020 and 2019, respectively. Such costs are expensed as incurred and included in SG&A expenses in the consolidated statements of income.

Foreign Currency Translation: The functional currency for the majority of our foreign operations is the applicable local currency. The translation from the applicable foreign currencies to U.S. dollars is performed for asset and liability accounts using exchange rates in effect at the balance sheet date and for revenue and expense accounts using the average exchange rate during the period. The resulting translation adjustments are recorded as a component of other comprehensive income (loss) in the consolidated statements of comprehensive income. Certain of our foreign entities remeasure from local to functional currencies, which is then translated to the reporting currency of the Company. Remeasurement from local to functional currencies is included in cost of sales or foreign currency loss (gain) in the consolidated statements of income. Gains or losses resulting from foreign currency transactions are charged to net income in the consolidated statements of income as incurred.

Income Taxes: The Company and its U.S. subsidiaries file a consolidated federal income tax return. Deferred income taxes are provided for temporary differences between financial reporting and the consolidated tax return in accordance with the liability method. A valuation allowance is provided against net deferred tax assets when conditions indicate that it is more likely than not that the benefit related to such assets will not be realized. In assessing the need for a valuation allowance against deferred tax assets, we consider all available evidence, including past operating results, estimates of future taxable income, and the feasibility of tax planning strategies. In the event that we change our determination as to the amount of deferred tax assets that can be realized, the valuation allowance will be adjusted with a corresponding impact to the provision for income taxes in the period in which such determination is made.

We utilize a two-step approach for the recognition and measurement of uncertain tax positions. The first step is to evaluate the tax position and determine whether it is more likely than not that the position will be sustained upon examination by tax authorities. The second step is to measure the tax benefit as the largest amount that is more likely than not of being realized upon settlement.

Interest and penalties related to income taxes are accounted for as income tax expense in the consolidated statements of income.

We are subjected to a tax on Global Intangible Low Taxed Income (“GILTI”), which we record as a period cost as incurred.

Share-based Compensation: We measure share-based compensation expense for share-based payments to employees and directors, including grants of employee stock options, restricted stock, restricted stock units and performance units based on the grant-date fair value. The fair value of stock options is calculated using the Black-Scholes pricing model and is recognized on an accelerated basis over the vesting period. The grant-date fair value calculation under the Black-Scholes pricing model requires the use of variables such as exercise term of the option, future volatility, dividend yield, and risk-free interest rate. The fair value of restricted stock and restricted stock units is based on Chart’s market price on the date of grant and is generally recognized on an accelerated basis over the vesting period. The fair value of performance units is based on Chart’s market price on the date of grant and pre-determined performance conditions as determined by the Compensation Committee of the Board of Directors and is recognized on a straight-line basis over the performance measurement period based on the probability that the performance conditions will be achieved. We reassess the vesting probability of performance units each reporting period and adjust share-based compensation expense based on our probability assessment. Share-based compensation expense for all awards considers estimated forfeitures.

During the year, we may repurchase shares of common stock from equity plan participants to satisfy tax withholding obligations relating to the vesting or payment of equity awards. All such repurchased shares are retired in the period in which the repurchases occur.

Defined Benefit Pension Plans: We sponsor a defined benefit pension plan which includes the Chart Pension Plan, which has been frozen since February 2006, and a noncontributory defined benefit plan that we acquired as part of the Hudson acquisition (the “Hudson Plan”). The Hudson Plan is closed to new participants and not considered significant to our consolidated financial statements. The Hudson Plan merged into the Chart Plan as of February 28, 2021.

The funded status is measured as the difference between the fair value of the plan assets and the projected benefit obligation. The change in the funded status of the plan is recognized in the year in which the change occurs through

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

accumulated other comprehensive (loss) income. Our funding policy is to contribute at least the minimum funding amounts required by law. Management has chosen policies according to accounting guidance that allow the use of a calculated value of plan assets, which generally reduces the volatility of expense (income) from changes in pension liability discount rates and the performance of the pension plan's assets.

Recently Issued Accounting Standards (Not Yet Adopted): In October 2021, the Financial Accounting Standards Board ("FASB") issued ASU 2021-08, "Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers." The amendments in this update require that an entity (acquirer) recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Topic 606. For public business entities, the amendments in this Update are effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. We are currently assessing the effect this ASU will have on our financial position, results of operations, and disclosures.

In March 2020, the FASB issued ASU 2020-04, "Reference Rate Reform (Topic 848), Facilitation of the Effects of Reference Rate Reform on Financial Reporting." This ASU simplifies the accounting for modifying contracts (including those in hedging relationships) that refer to LIBOR and other interbank offered rates that are expected to be discontinued due to reference rate reform. The amendments in this ASU are effective for all entities as of March 12, 2020 through December 31, 2022. An entity may elect to apply the amendments for contract modifications by Topic or Industry Subtopic as of any date from the beginning of an interim period that includes or is subsequent to March 12, 2020, or prospectively from a date within an interim period that includes or is subsequent to March 12, 2020, up to the date that the financial statements are available to be issued. Once elected for a Topic or an Industry Subtopic, the amendments in this ASU must be applied prospectively for all eligible contract modifications for that Topic or Industry Subtopic. We expect application of the amendments to impact accounting for our senior secured revolving credit facility due October 2026. Our lenders will notify us when our borrowings transition away from LIBOR, at which point we will adopt this ASU as part of the transition to the new reference rate. We are currently assessing the effect this ASU will have on our financial position, results of operations, and disclosures.

Recently Adopted Accounting Standards: In November 2021, the FASB issued ASU 2021-10, "Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance." The amendments in this update require annual disclosures about transactions with a government that are accounted for by applying a grant or contribution model by analogy. The amendments in this update are effective for all entities within their scope for financial statements issued for annual periods beginning after December 15, 2021. Early application of the amendments is permitted. We adopted this guidance effective January 1, 2022. The adoption of this guidance did not have a material impact on our financial position, results of operations or disclosures.

In August 2020, the FASB issued ASU 2020-06, "Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entities Own Equity (Subtopic 815-40)." This ASU simplifies accounting for convertible instruments by eliminating two of the three models in ASC 470-20 that require separating embedded conversion features from convertible instruments. The guidance is effective for fiscal years beginning after December 15, 2021. We adopted this guidance effective January 1, 2021 under the modified retrospective adoption approach. The cumulative effect of the change was recognized as an adjustment to the opening balance of retained earnings at the date of adoption. The comparative information has not been restated and continues to be presented according to accounting standards in effect for those periods.

As a result of the adoption of ASU 2020-06, our convertible notes due November 2024 are no longer bifurcated into separate liability and equity components in our December 31, 2021 consolidated balance sheet. The \$258.8 principal amount of our convertible notes due November 2024 was classified as a liability only in our December 31, 2021 consolidated balance sheet. Upon adoption of ASU 2020-06, we recorded an adjustment to the convertible notes liability component, equity component (additional paid-in-capital) and retained earnings. This adjustment was calculated based on the carrying amount of the convertible notes as if it had always been treated as a liability only. Furthermore, we recorded an adjustment to the debt issuance costs contra liability and equity (additional paid-in-capital) components as if debt issuance costs had always been treated as a contra liability only. Lastly, we derecognized deferred income taxes associated with the convertible notes debt discount and adjusted deferred incomes taxes relative to unamortized debt issuance costs associated with our convertible notes due November 2024.

Interest expense related to the accretion of our convertible notes due November 2024 is no longer recognized. Interest accretion of convertible notes discount and net income from continuing operations attributable to Chart Industries, Inc. for the

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

year ended December 31, 2021 would have been \$8.4 and \$52.6 without the adoption of ASU 2020-06. As such, net income from continuing operations attributable to Chart Industries, Inc. per common share for the year ended December 31, 2021 is \$0.18 (basic) and \$0.16 (diluted) higher due to the effect of adoption of ASU 2020-06.

As further described in Note 10, “Debt and Credit Arrangements,” on December 31, 2020, we amended the Indenture governing our convertible notes due November 2024 to eliminate share settlement thus leaving us with two settlement options: (1) cash settlement or (2) cash for par and any combination of cash and shares for the excess settlement amount above the \$258.8 principal amount of our convertible notes due November 2024. ASU 2020-06 requires usage of the if-converted method to compute diluted earnings per share for our convertible notes due November 2024, however, based on the terms of the amended Indenture and the cessation of interest accretion expense recognition from the transition at adoption, the if-converted method was modified such that interest expense is no longer added to the numerator, and the denominator only includes incremental shares that would be issued upon conversion.

Impacts on Financial Statements

The following table summarizes the cumulative effect of the changes to our consolidated balance sheet as of December 31, 2020 from the adoption of ASU 2020-06:

	<u>Balance at December 31, 2020</u>	<u>Adjustments due to ASU 2020-06 adoption</u>	<u>Balance at January 1, 2021</u>
Liabilities			
Accrued income taxes	\$ 46.5	\$ (0.2)	\$ 46.3
Current convertible notes ⁽¹⁾	220.9	34.0	254.9
Long-term deferred tax liabilities	60.2	(7.6)	52.6
Equity			
Additional paid-in-capital	780.8	(36.9)	743.9
Retained earnings	\$ 808.4	\$ 10.7	\$ 819.1

⁽¹⁾ Current convertible notes is presented net of unamortized discount and debt issuance costs of \$34.8 and \$3.1, respectively at December 31, 2020. Current convertible notes is presented net of unamortized debt issuance costs of \$3.9 at January 1, 2021.

In January 2020, the FASB issued ASU 2020-01, “Investments – Equity Securities (Topic 321), Investments – Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815).” This ASU clarifies the interactions between the measurement alternative in Topic 321, the equity method of accounting in Topic 323 and the application of guidance for certain forward contracts and purchased options that upon settlement or exercise would be accounted for under the equity method of accounting in Topic 815. This guidance is effective for fiscal years ending after December 15, 2020. We adopted this guidance effective January 1, 2021. During the third quarter 2021, we completed an additional investment in HTEC Hydrogen Technology & Energy Corporation and recognized a gain upon remeasurement of our initial fourth quarter 2020 investment in HTEC Hydrogen Technology & Energy Corporation due to an observable price change in an orderly transaction for similar instruments of the same issuer in accordance with the guidance provided in ASU 2020-01. Refer to Note 6, “Investments” for further discussion of our investment in HTEC Hydrogen Technology & Energy Corporation.

In August 2018, the FASB issued ASU 2018-15, “Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract.” This ASU clarifies the accounting treatment for implementation costs for cloud computing arrangements (hosting arrangements) that is a service contract. This guidance is effective for fiscal years beginning after December 15, 2019, including interim periods within that fiscal year. We adopted this guidance effective January 1, 2020. The adoption of this guidance did not have a material impact on our financial position, results of operations or disclosures.

In August 2018, the FASB issued ASU 2018-14, “Compensation – Retirement Benefits – Defined Benefit Plans – General (Subtopic 715-20): Disclosure Framework—Changes to the Disclosure Requirements for Defined Benefit Plans.” This ASU adds, modifies and clarifies several disclosure requirements for employers that sponsor defined benefit pension or other

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

postretirement plans. This guidance is effective for fiscal years ending after December 15, 2020. We early adopted this guidance effective January 1, 2020. The adoption of this guidance did not have a significant impact on our annual disclosures.

In August 2018, the FASB issued ASU 2018-13, “Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement.” This ASU adds, modifies and removes several disclosure requirements relative to the three levels of inputs used to measure fair value in accordance with Topic 820, “Fair Value Measurement.” This guidance is effective for fiscal years beginning after December 15, 2019, including interim periods within that fiscal year. We adopted this guidance effective January 1, 2020. The adoption of this guidance did not impact our financial position, results of operations or disclosures.

In June 2016, the FASB issued ASU 2016-13, “Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments” and subsequently issued additional guidance that modified ASU 2016-13. ASU 2016-13 and the subsequent modifications are identified as ASC 326.” The standard requires an entity to change its accounting approach in determining impairment of certain financial instruments, including trade receivables, from an “incurred loss” to a “current expected credit loss” model. The standard is effective for fiscal years beginning after December 15, 2019, including interim periods within such fiscal years. We adopted this guidance effective January 1, 2020. The adoption of this guidance did not have a material impact on our financial position, results of operations or disclosures. We maintain an allowance for doubtful accounts to provide for the estimated amount of receivables that will not be collected as discussed above. In addition, we estimate expected credit losses based on historical loss information then adjust the estimates based on current, reasonable and supportable forecast economic conditions.

NOTE 3 — Discontinued Operations

Cryobiological Products Divestiture

On October 1, 2020, we closed on the sale of our cryobiological products business, which was formerly within our D&S West segment prior to the realignment of our segment reporting structuring in the fourth quarter of 2020, to Cryoport, Inc. (NASDAQ: CYRX) for net cash proceeds of \$317.5, inclusive of the base purchase price of \$320.0 less estimated closing adjustments of \$2.5 (the “Cryobiological Divestiture”). The strategic decision to divest of our cryobiological products business reflected our strategy and capital allocation approach to focus on our core capabilities and offerings. We recorded a gain on the Cryobiological Divestiture of \$224.2, net of taxes of \$25.2, for the year ended December 31, 2020. Interest expense of \$7.4 and \$10.6 was allocated to discontinued operations for the years ended December 31, 2020, and 2019, respectively, based on interest on our term loan due June 2024 that was required to be repaid as a result of the Cryobiological Divestiture.

Summarized Financial Information of Discontinued Operations

The following table represents income from discontinued operations, net of tax:

	Year Ended December 31,	
	2020	2019
Sales	\$ 59.9	\$ 83.6
Cost of sales	31.8	44.3
Selling, general and administrative expenses	7.8	10.4
Operating income ⁽¹⁾	20.3	28.9
Interest expense, net	7.4	10.6
Other (income) expense, net	(0.8)	0.1
Income before income taxes	13.7	18.2
Income tax (benefit) expense	(1.3)	3.2
Income from discontinued operations before gain on sale of businesses	15.0	15.0
Gain on sale of business, net of taxes ⁽²⁾	224.2	—
Income from discontinued operations, net of tax	\$ 239.2	\$ 15.0

⁽¹⁾ Includes depreciation expense of \$0.7 and \$1.1 for the years ended December 31, 2020 and 2019, respectively.

⁽²⁾ Gain on sale of business is net of taxes of \$25.2 for the year ended December 31, 2020.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

The following table presents a summary of cash flows related to discontinued operations for the following periods:

	Year Ended December 31,	
	2020	2019
Net cash provided by (used in):		
Operating activities	\$ 18.3	\$ 16.6
Investing activities	316.7	(0.9)
Net cash provided by discontinued operations	<u>\$ 335.0</u>	<u>\$ 15.7</u>

NOTE 4 — Segment and Geographic Information

Our reportable segments, which are also our operating segments, are as follows: Cryo Tank Solutions, Heat Transfer Systems, Specialty Products and Repair Service & Leasing. Our Cryo Tank Solutions segment, which has principal operations in the United States, Europe and Asia serves most geographic regions around the globe, supplying bulk, microbulk and mobile equipment used in the storage, distribution, vaporization, and application of industrial gases and certain hydrocarbons. Our Heat Transfer Systems segment, with principal operations in the United States and Europe, also serves most geographic regions globally, supplying mission critical engineered equipment and systems used in the separation, liquefaction, and purification of hydrocarbon and industrial gases that span gas-to-liquid applications. Operating globally, our Specialty Products segment supplies products used in specialty end-market applications including hydrogen, LNG, biofuels, CO2 Capture, food and beverage, aerospace, lasers, cannabis and water treatment, among others. Our Repair, Service & Leasing segment provides installation, service, repair, maintenance, and refurbishment of cryogenic products globally in addition to providing equipment leasing solutions.

Corporate includes operating expenses for executive management, accounting, tax, treasury, corporate development, human resources, information technology, investor relations, legal, internal audit, and risk management. Corporate support functions are not currently allocated to the segments.

We evaluate performance and allocate resources based on operating income as determined in our consolidated statements of income.

Segment Financial Information

	Year Ended December 31, 2021						
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Intersegment Eliminations	Corporate	Consolidated
Sales	\$ 447.4	\$ 262.7	\$ 432.9	\$ 187.0	\$ (12.3)	\$ —	\$ 1,317.7
Depreciation and amortization expense	14.9	37.6	15.1	11.3	—	1.7	80.6
Operating income (loss) ⁽¹⁾⁽²⁾	52.9	(12.3)	94.1	23.3	—	(69.5)	88.5

	Year Ended December 31, 2020						
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Intersegment Eliminations	Corporate	Consolidated
Sales	\$ 415.8	\$ 369.8	\$ 242.6	\$ 158.3	\$ (9.4)	\$ —	\$ 1,177.1
Depreciation and amortization expense	18.5	48.3	4.8	10.9	—	2.0	84.5
Operating income (loss) ⁽¹⁾⁽²⁾⁽³⁾	52.5	11.2	60.7	30.3	—	(62.5)	92.2

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

	Year Ended December 31, 2019						
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Intersegment Eliminations	Corporate	Consolidated
Sales	\$ 409.9	\$ 441.7	\$ 207.9	\$ 162.6	\$ (6.6)	\$ —	\$ 1,215.5
Depreciation and amortization expense	19.5	42.0	4.9	9.7	—	1.6	77.7
Operating income (loss) ⁽¹⁾⁽⁴⁾	25.7	17.7	48.1	27.9	—	(67.4)	52.0

⁽¹⁾ Restructuring costs for the years ended:

- December 31, 2021 were \$3.5 (\$0.3 – Cryo Tank Solutions \$1.7 – Heat Transfer Systems and \$1.5 – Repair, Service & Leasing);
- December 31, 2020 were \$13.6 (\$2.7 – Cryo Tank Solutions, \$7.4 – Heat Transfer Systems, \$0.7 – Specialty Products, \$0.2 – Repair, Service & Leasing and \$2.6 – Corporate); and
- December 31, 2019 were \$15.6 (\$9.1 – Cryo Tank Solutions, \$4.5 – Heat Transfer Systems, \$0.3 – Specialty Products, \$1.5 – Repair, Service & Leasing and \$0.2 – Corporate).

⁽²⁾ Includes transaction-related costs of \$2.5 and \$2.6 for the years ended December 31, 2021 and 2020, respectively. These costs were mainly related to our 2021 acquisitions of Earthly Labs Inc. (“Earthly Labs”), AdEdge Holdings, LLC, L.A. Turbine and Cryogenic Gas Technologies, Inc. and our 2020 acquisitions of Sustainable Energy Solutions, Inc., BlueInGreen, LLC and Alabama Trailers. Includes transaction-related costs of \$2.8 related to integration activities for previous acquisitions for the year ended December 31, 2021.

⁽³⁾ Includes \$16.0 impairment of our trademarks and trade names indefinite-lived intangible assets related to the AXC business in our Heat Transfer Systems segment for the year ended December 31, 2020.

⁽⁴⁾ Includes transaction-related costs of \$5.4 for the year ended December 31, 2019, which were mainly related to the AXC acquisition. Includes transaction-related costs of \$4.3 related to integration activities for previous acquisitions for the year ended December 31, 2019.

Sales by Geography

Net sales by geographic area are reported by the destination of sales.

	Year Ended December 31, 2021					
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Intersegment Eliminations	Consolidated
North America ⁽¹⁾	\$ 178.3	\$ 181.1	\$ 193.2	\$ 118.6	\$ (5.4)	\$ 665.8
Europe, Middle East, Africa and India	155.2	28.6	204.1	36.4	(4.5)	419.8
Asia-Pacific ⁽²⁾	109.9	51.6	33.9	30.6	(2.3)	223.7
Rest of the World	4.0	1.4	1.7	1.4	(0.1)	8.4
Total	\$ 447.4	\$ 262.7	\$ 432.9	\$ 187.0	\$ (12.3)	\$ 1,317.7

	Year Ended December 31, 2020					
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Intersegment Eliminations	Consolidated
North America ⁽¹⁾	\$ 168.0	\$ 259.4	\$ 98.9	\$ 111.2	\$ (4.4)	\$ 633.1
Europe, Middle East, Africa and India	165.3	39.3	121.8	38.1	(3.5)	361.0
Asia-Pacific ⁽²⁾	76.1	69.3	21.4	8.4	(1.4)	173.8
Rest of the World	6.4	1.8	0.5	0.6	(0.1)	9.2
Total	\$ 415.8	\$ 369.8	\$ 242.6	\$ 158.3	\$ (9.4)	\$ 1,177.1

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

	Year Ended December 31, 2019					Consolidated
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Intersegment Eliminations	
North America ⁽¹⁾	\$ 173.6	\$ 311.2	\$ 100.4	\$ 128.4	\$ (3.4)	\$ 710.2
Europe, Middle East, Africa and India	163.8	71.6	91.2	23.7	(2.2)	348.1
Asia-Pacific ⁽²⁾	67.2	57.3	15.6	9.7	(0.9)	148.9
Rest of the World	5.3	1.6	0.7	0.8	(0.1)	8.3
Total	\$ 409.9	\$ 441.7	\$ 207.9	\$ 162.6	\$ (6.6)	\$ 1,215.5

⁽¹⁾ Consolidated sales in the United States were \$585.9, \$576.8 and \$638.0 for the twelve month periods ending December 31, 2021, 2020 and 2019, respectively and represent 44.5%, 49.0% and 52.5% of consolidated sales for the same periods, respectively.

⁽²⁾ Consolidated sales in China were \$136.2, \$100.7 and \$80.5 for the twelve months ended December 31, 2021, 2020 and 2019, respectively and represent 10.3%, 8.6% and 6.6% of consolidated sales for the same periods, respectively.

No single customer accounted for more than 10% of consolidated sales for any of the periods presented in the tables above.

Total Assets

Corporate assets mainly include cash and cash equivalents and long-term deferred income taxes as well as certain corporate-specific property, plant and equipment, net and certain investments. Our allocation methodology for property, plant and equipment, net of the reportable segments differs from our allocation method of depreciation expense of a reportable segment and therefore, depreciation expense does not entirely align with the related depreciable assets of the reportable segments. Furthermore, since finite-lived intangible assets are excluded from total assets of reportable segments while amortization expense is allocated to each of our reportable segments, amortization expense by segment inherently does not align with the related amortizable intangible assets of the reportable segments.

	December 31,	
	2021	2020
Cryo Tank Solutions	\$ 407.2	\$ 399.2
Heat Transfer Systems	225.8	247.2
Specialty Products	327.5	178.3
Repair, Service & Leasing	186.2	142.6
Total assets of reportable segments	1,146.7	967.3
Goodwill ⁽¹⁾	994.6	865.9
Identifiable intangible assets, net ⁽¹⁾	556.1	493.1
Corporate	346.4	244.2
Total assets	\$ 3,043.8	\$ 2,570.5

⁽¹⁾ See Note 9, "Goodwill and Intangible Assets," for further information related to goodwill and identifiable intangible assets, net.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Geographic Information

	Property, plant and equipment, net as of December 31,	
	2021	2020
United States	\$ 234.0	\$ 223.9
Foreign		
Italy	60.7	69.9
China	58.8	61.5
Czech Republic	29.9	29.0
Germany	16.5	16.1
India	16.1	14.1
Total Foreign	182.0	190.6
Total	\$ 416.0	\$ 414.5

NOTE 5 — Revenue

Disaggregation of Revenue

The following tables represent a disaggregation of revenue by timing of revenue along with the reportable segment for each category:

	Year Ended December 31, 2021					
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Intersegment Eliminations	Consolidated
Point in time	\$ 407.6	\$ 19.2	\$ 300.5	\$ 119.1	\$ (10.7)	\$ 835.7
Over time	39.8	243.5	132.4	67.9	(1.6)	482.0
Total	\$ 447.4	\$ 262.7	\$ 432.9	\$ 187.0	\$ (12.3)	\$ 1,317.7

	Year Ended December 31, 2020					
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Intersegment Eliminations	Consolidated
Point in time	\$ 378.3	\$ 28.6	\$ 184.6	\$ 110.3	\$ (4.5)	\$ 697.3
Over time	37.5	341.2	58.0	48.0	(4.9)	479.8
Total	\$ 415.8	\$ 369.8	\$ 242.6	\$ 158.3	\$ (9.4)	\$ 1,177.1

	Year Ended December 31, 2019					
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Intersegment Eliminations	Consolidated
Point in time	\$ 385.2	\$ 26.3	\$ 161.2	\$ 117.6	\$ (5.2)	\$ 685.1
Over time	24.7	415.4	46.7	45.0	(1.4)	530.4
Total	\$ 409.9	\$ 441.7	\$ 207.9	\$ 162.6	\$ (6.6)	\$ 1,215.5

Refer to Note 4, “Segment and Geographic Information,” for a table of revenue by reportable segment disaggregated by geography.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Contract Balances

The following table represents changes in our contract assets and contract liabilities balances:

	December 31, 2021	December 31, 2020	Year-to-date Change (\$)	Year-to-date Change (%)
Contract assets				
Accounts receivable, net of allowances	\$ 236.3	\$ 200.8	\$ 35.5	17.7 %
Unbilled contract revenue	93.5	79.4	14.1	17.8 %
Contract liabilities				
Customer advances and billings in excess of contract revenue	\$ 148.5	\$ 118.9	\$ 29.6	24.9 %
Long-term deferred revenue	0.4	1.9	(1.5)	(78.9)%

Revenue recognized for the years ended December 31, 2021 and 2020, that was included in the contract liabilities balance at the beginning of each year was \$104.3 and \$101.2, respectively. The amount of revenue recognized during the year ended December 31, 2021 from performance obligations satisfied or partially satisfied in previous periods as a result of changes in the estimates of variable consideration related to long-term contracts, was not significant. Long-term deferred revenue is included in other long-term liabilities in the consolidated balance sheets for the years ended December 31, 2021 and 2020.

Remaining Performance Obligations

Remaining performance obligations represent the transaction price of firm signed purchase orders or other written contractual commitments from customers for which work has not been performed, or is partially completed, and excludes unexercised contract options and potential orders. As of December 31, 2021, the estimated revenue expected to be recognized in the future related to remaining performance obligations was \$1,190.1. We expect to recognize revenue on 78% of the remaining performance obligations over the next 12 months and 16% of the remaining performance obligations over the next 13 to 24 months, with the remaining balance recognized thereafter.

NOTE 6 — Investments

Equity Method Investments

The following table represents the activity in equity method investments:

	Equity Method Investments
Balance at December 31, 2019	\$ 6.5
Equity in loss of unconsolidated affiliates, net ⁽¹⁾	(0.7)
Foreign currency translation adjustments and other	(0.5)
Balance at December 31, 2020	\$ 5.3
New investments ⁽²⁾⁽³⁾	58.7
Reclassification from investments in equity securities to equity method investments ⁽³⁾	36.8
Equity in earnings of unconsolidated affiliates, net ⁽¹⁾⁽²⁾⁽³⁾	0.4
Foreign currency translation adjustments and other	(1.6)
Balance at December 31, 2021	\$ 99.6

⁽¹⁾ Our equity method investments include a 50% ownership interest in a joint venture with Hudson Products de Mexico S.A. de CV which totaled \$3.3 and \$2.8 at December 31, 2021 and 2020, respectively. This investment is operated and managed by our joint venture partner and as such, we do not have control over the joint venture and therefore is not consolidated. We recognized equity in earnings of this investment of \$0.5, \$0.3 and \$0.2 for the years ended December 31, 2021, 2020 and 2019, respectively. Equity in earnings of this investment is classified in equity in earnings of unconsolidated affiliates, net in the statement of income for the year ended December 31, 2021 and selling, general and administrative expenses in the statements of income for the years ended December 31, 2020 and 2019.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Additionally, we have a 25% ownership interest in Liberty LNG, which totaled \$2.4 and \$2.1 at December 31, 2021 and 2020, respectively. For the years ended December 31, 2021 and 2020, equity in earnings (loss) of this investment was \$0.3 and \$(1.0), respectively, and was not significant for the year ended December 31, 2019. Equity in earnings (loss) of this investment is classified in equity in earnings of unconsolidated affiliates, net in the statement of income for the year ended December 31, 2021 and unrealized (gain) loss on investment in equity securities in the statement of income for the year ended December 31, 2020.

We have another immaterial investment in an unconsolidated affiliate of \$0.4 for all periods presented.

- (2) During the second quarter 2021, we completed an investment in Cryomotive GmbH (“Cryomotive”) in the amount of 6.8 million euros (equivalent to \$8.2) for a 24.9% ownership interest. Our equity method investment in Cryomotive was \$7.1 at December 31, 2021. Equity in loss of this investment was \$0.6 for the year ended December 31, 2021 and is classified in equity in earnings of unconsolidated affiliates, net in the statement of income for the year ended December 31, 2021. Cryomotive is a leading green-tech mobility startup in Germany developing a disruptive clean hydrogen storage and refueling technology platform focused on compressed cold hydrogen and cryogenic high-pressure storage. Cryomotive’s proprietary CcH2 CRYOGAS technology aims to decarbonize long-haul commercial vehicles while keeping the range and fueling times similar to diesel powered vehicles.
- (3) During the fourth quarter 2020, we completed an investment in HTEC Hydrogen Technology & Energy Corporation (“HTEC”) in the amount of CAD 20.0 million (equivalent to \$15.7) in exchange for 15.6% of HTEC’s common stock on a fully-diluted basis (the “Initial HTEC Investment”). On September 7, 2021 (the “Closing Date”), we completed an additional investment in HTEC in the amount of CAD 63.5 million (equivalent to \$50.5), which increased our investment ownership to 25% of HTEC’s common stock on a fully-diluted basis. We recognized a gain of \$20.7 upon remeasurement of the Initial HTEC Investment due to an observable price change in an orderly transaction for similar instruments of the same issuer, which was recognized in unrealized (gain) loss on investments in equity securities in the consolidated statement of income for the year ended December 31, 2021. We reclassified the Initial HTEC Investment inclusive of the \$20.7 gain and foreign currency translation gains from investments in equity securities to equity method investments during 2021. Our equity method investment in HTEC was \$86.4 at December 31, 2021. We recognized equity in earnings of this investment of \$0.2 for the year ended December 31, 2021, which is classified in equity in earnings of unconsolidated affiliates, net in the statement of income for the year ended December 31, 2021.

Investments in equity securities

The following table represents the activity in investments in equity securities:

	Investment in Equity Securities, Level 1 ⁽¹⁾	Investment in Equity Securities, Level 2 ⁽¹⁾	Investments in Equity Securities, All Others ⁽²⁾	Investments in Equity Securities Total
Balance at December 31, 2019	\$ —	\$ 6.9	\$ —	\$ 6.9
New investments	35.1	—	15.7	50.8
Increase (decrease) in fair value of investments in equity securities	17.0	(2.9)	—	14.1
Foreign currency translation adjustments and other	1.7	0.1	—	1.8
Balance at December 31, 2020	<u>\$ 53.8</u>	<u>\$ 4.1</u>	<u>\$ 15.7</u>	<u>\$ 73.6</u>
New investments ^{(2) (3)}	—	—	45.2	45.2
Reclassification due to acquisition of investee ⁽³⁾	—	—	(7.6)	(7.6)
Reclassification to equity method investments from investments in equity securities ⁽⁴⁾	—	—	(36.8)	(36.8)
(Decrease) increase in fair value of investments in equity securities	(19.7)	2.2	20.7	3.2
Realized gain on investment in equity securities ⁽³⁾	—	—	2.6	2.6
Foreign currency translation adjustments and other	(2.8)	(0.1)	0.5	(2.4)
Balance at December 31, 2021	<u>\$ 31.3</u>	<u>\$ 6.2</u>	<u>\$ 40.3</u>	<u>\$ 77.8</u>

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

- (1) Investment in equity securities Level 1 includes our investment in McPhy (Euronext Paris: MCPHY – ISIN; FR0011742329). McPhy’s common stock trades on the Euronext Paris stock exchange and therefore we measure our investment in McPhy using Level 1 fair value inputs. The fair value of our investment in McPhy was \$31.3 and \$53.8 at December 31, 2021 and 2020, respectively. For the years ended December 31, 2021 and 2020, we recognized an unrealized loss of \$19.7 and an unrealized gain of \$17.0, respectively, in our investment in McPhy.
- Investment in equity securities Level 2 includes our investment in Stabilis Energy, Inc. (NasdaqCM: SLNG) (“Stabilis”). Stabilis represents an instrument with quoted prices that trades less frequently than certain of our other exchange-traded instruments and therefore we measure our investment in Stabilis using Level 2 fair value inputs. The fair value of Stabilis was \$6.2 and \$4.1 at December 31, 2021 and 2020, respectively. For the years ended December 31, 2021, 2020 and 2019 we recognized and an unrealized gain of \$2.2 and unrealized losses of \$2.9 and \$0.1, respectively, in our investment in Stabilis.
- (2) During the first quarter 2021, we completed an investment in Transform Materials LLC (“Transform Materials”) in the amount of \$25.1, inclusive of legal fees, for approximately 5% of its equity. Transform Materials is a sustainable chemical technology company that uses microwave plasma to convert natural gas into acetylene and hydrogen. Its highly selective, cost-effective, net-carbon-negative process converts the methane in natural gas into high-value products suitable for direct use or downstream reactions.
- Also during the first quarter 2021, we completed an investment in Svante Inc. (“Svante”) in the amount of \$15.1, inclusive of legal fees, for under 10% of its capital stock on a fully diluted basis. Svante offers companies in emissions-intensive industries a commercially viable way to capture large-scale CO₂ emissions from existing infrastructure, either for safe storage or to be recycled for further industrial use in a closed loop.
- Our investments in Transform Materials and Svante represent equity instruments without a readily determinable fair value.
- (3) During the second quarter 2021, we completed an investment in Earthly Labs in the amount of \$5.0 for approximately 15% of its equity. Earthly Labs is a leading provider of small-scale carbon capture systems offering an affordable, small footprint technology platform called “CiCi ®” to capture, recycle, reuse, track and sell CO₂. Earthly Labs proprietary approach includes hardware, software and services to address half of all existing carbon dioxide emissions from industrial sources while converting molecules to value. On December 14, 2021 we completed the acquisition of the remaining 85% of the shares of Earthly Labs. On the acquisition date, we recognized a gain of \$2.6 from the remeasurement of our initial 15% investment in Earthly Labs, which is classified as realized gain on investment in equity securities in the consolidated statement of income for the year ended December 31, 2021. See Note 13, “Business Combinations” for further information regarding the Earthly Labs acquisition.
- (4) We reclassified the Initial HTEC Investment inclusive of a \$20.7 gain and foreign currency translation gains from investments in equity securities to equity method investments. Refer to the “Equity Method Investments” section above for further discussion.

Co-Investment Agreement

On the date of Chart’s additional investment in HTEC, described in the “Equity Method Investments” section above, I Squared Capital (“ISQ”), an infrastructure-focused private equity firm, also purchased HTEC common stock at the same purchase price of CAD 24.33 per share (i.e., approximately CAD 153.0 million in the aggregate), representing 35% of HTEC’s common stock. In connection with both Chart and ISQ’s investments in HTEC, Chart and ISQ entered into a Co-Investment Agreement, (the “Co-Investment Agreement”), pursuant to which Chart and ISQ have agreed to the following:

- In the following circumstances, ISQ shall have the right but not the obligation to require Chart to purchase all (and not less than all) of the shares of HTEC common stock acquired as part of ISQ’s investment described above (the “Put Option”):
 - i. the third anniversary of the Closing Date,
 - ii. the date Chart undergoes a change of control (subject to certain exceptions),
 - iii. the date upon which Chart, during the period from the Closing Date through the third anniversary of the Closing Date, has made certain distributions to its shareholders (including cash or other dividends, or via a spin-off transaction), in excess of \$900.0,
 - iv. the date, if any, upon which our leverage ratio exceeds certain thresholds and
 - v. the date, if any, of a bankruptcy event (including certain insolvency-related actions) involving Chart.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

- In the event that ISQ exercises its Put Option, we shall pay to ISQ an amount in cash in exchange for the HTEC common stock then held by ISQ such that ISQ shall realize the greater of (i) an internal rate of return of 10% and (ii) a multiple on ISQ's invested capital of 1.65x.
- Conversely, at any time after the third anniversary of the Closing Date, we shall have the right to purchase from ISQ up to 20% of the shares of HTEC common stock acquired as part of the ISQ Investment. In exchange for the common stock, we shall pay ISQ the greater of (i) an internal rate of return of 12.5% and (ii) a multiple on ISQ's invested capital of 1.65x.
- In addition, we shall have (i) a right of first offer: if ISQ desires to transfer any of its HTEC common stock to any third party, we shall have the right to first offer provided that upon notice, we shall have the option to make a first offer to purchase the offered interest in cash exclusively and (ii) a right of first refusal: if ISQ desires to sell its HTEC common stock to any third party pursuant to a definitive agreement therewith, we shall have the right of first refusal provided that the purchase consideration paid by Chart to ISQ upon our exercise of such right of first refusal must be equal to 102% of the purchase consideration agreed to be paid by such third party.
- The Co-Investment Agreement shall terminate automatically upon the consummation of an initial public offering by HTEC of its common stock.

Accounting Treatment of Put and Call Options

We record the Put and Call Options (together “the Options”) at fair value and record any change in fair value through earnings at each reporting period. The fair value of the Options was not material on the Closing Date or at December 31, 2021.

Clean H2 Infra Fund (f/k/a FiveT Hydrogen Fund)

As previously announced on April 5, 2021, we were admitted as an anchor investor in the Clean H2 Infra Fund (f/k/a the FiveT Hydrogen Fund), which is a private equity fund whose main objective is to support the hydrogen market by investing globally, directly or indirectly, in infrastructure projects or companies active in the hydrogen sector (the “Hydrogen Fund”). On December 15, 2021, we signed a subscription agreement for a 50 million euros investment commitment in the Hydrogen Fund, which consists of 500,000 Class A1 Shares at an initial value of 100 euros per Class A1 Share. In order to be considered an “anchor investor” in the Hydrogen Fund (which qualifies Chart to designate representatives to certain of its advisory committees), without any accommodation by the fund, Chart would have been required to commit to invest 100 million euros. However, the fund manager of the Hydrogen Fund (the “Management Company”) agreed to allow Chart and Baker Hughes to form an investment consortium (the “Consortium”) to aggregate separate 50 million euros investment commitments to create an aggregate commitment of 100 million euros (50 million euros from Chart and 50 million euros from Baker Hughes). The Consortium will be recognized by the Management Company so long as both Chart and Baker Hughes participate in the first closing of the Hydrogen Fund and their respective commitments remain at or above 50 million euros apiece.

The Management Company will establish a Limited Partners Advisory Committee (the “LPAC”) to consult with and help advise the Management Company with respect to certain key decisions governing the fund that the Management Company shall make. The LPAC is expected to be comprised by up to fifteen (15) members, the majority of whom shall be chosen by certain industrial investors and who shall be (i) representatives of the anchor investors and (ii) subject to any remaining available seats, representatives of the non-anchor investors selected by the Management Company.

Class A1 Shares are entitled to the return of any associated paid-up capital contributions (excluding any subscription premium or default interest, if any), the Preferred Return calculated thereon as described below, and their share of the Hydrogen Fund's capital gain beyond the Preferred Return in accordance with the order of distributions in the by-laws of the Hydrogen Fund (in each case to the extent of available funds). The “Preferred Return” equals an annual interest rate of seven percent (7%) if fifteen percent (15%) of the Hydrogen Fund's aggregate capital commitments from all investors is invested in strategic investments; provided, however, that such seven percent (7%) interest rate shall be reduced in a linear fashion to six and one-half percent (6.5%) if twenty percent (20%) of the Hydrogen Fund's aggregate capital commitments from all investors is invested in strategic investments. The Management Company is currently targeting aggregate capital commitments from all investors of at least 1.5 billion euros; provided, however, that the Hydrogen Fund has a hard cap on investments equal to 1.8 billion euros.

The Hydrogen Fund shall determine the net asset value of each class of its shares at the end of each quarter (including the Class A1 Shares that we shall hold), which will be used to record the fair value of our investment.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

The Hydrogen Fund will have a term of twelve (12) years, subject to certain potential extensions. Investors cannot request the redemption of their shares by the Hydrogen Fund at any time prior to the final liquidation of the fund. Capital calls will be made by the Management Company in accordance with investment opportunities and the financing needs of the Hydrogen Fund's activities. The Management Company shall not issue capital calls for an aggregate amount exceeding thirty percent(30%) of the aggregate capital commitments from all investors in any rolling twelve-month period unless the LPAC has given prior consent.

The Hydrogen Fund's term will begin on the Hydrogen Fund's first closing date, which the Management Company expects will be held as soon as practicable but no later than June 30, 2022. The Management Company is required to send capital call requests to investors at least ten (10) business days prior to their deadline for payment.

In the event that, following any capital call made by the Management Company, an investor of the Hydrogen Fund does not timely fund all or any portion of its capital commitment required thereby, such investor will be charged interest thereon equal to the Preferred Return plus one-half percent (0.5%), and shall not be entitled to receive distributions from the Hydrogen Fund until it is no longer delinquent.

NOTE 7 — Inventories

The following table summarizes the components of inventory:

	December 31,	
	2021	2020
Raw materials and supplies	\$ 178.8	\$ 124.7
Work in process	64.4	57.8
Finished goods	78.3	65.9
Total inventories, net	<u>\$ 321.5</u>	<u>\$ 248.4</u>

The allowance for excess and obsolete inventory balance at December 31, 2021 and 2020 was \$10.9 and \$9.7, respectively.

NOTE 8 — Property, Plant and Equipment

The following table summarizes the components of property, plant and equipment:

Classification	Estimated Useful Life	December 31,	
		2021	2020
Land and buildings	20-35 years	\$ 355.6	\$ 346.5
Machinery and equipment	3-12 years	236.5	214.4
Computer equipment, furniture and fixtures	3-7 years	38.8	40.8
Right-of-use assets		48.3	44.4
Construction in process		28.7	18.2
Total property, plant and equipment, gross		707.9	664.3
Less: accumulated depreciation		(291.9)	(249.8)
Total property, plant and equipment, net		<u>\$ 416.0</u>	<u>\$ 414.5</u>

Depreciation expense was \$41.7, \$38.8 and \$37.9 for the years ended December 31, 2021, 2020 and 2019, respectively.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

NOTE 9 — Goodwill and Intangible Assets

Goodwill

The following table represents the activity in goodwill net of accumulated goodwill impairment loss (“goodwill, net”) and accumulated goodwill impairment loss by segment for 2021:

	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Consolidated
Goodwill, net balance at December 31, 2020	\$ 93.2	\$ 435.2	\$ 172.4	\$ 165.1	\$ 865.9
Goodwill acquired during the period ⁽¹⁾⁽²⁾	—	2.9	127.1	10.1	140.1
Foreign currency translation adjustments and other	(8.3)	(4.5)	—	—	(12.8)
Purchase price adjustments ⁽³⁾	—	—	1.4	—	1.4
Goodwill, net balance at December 31, 2021	<u>\$ 84.9</u>	<u>\$ 433.6</u>	<u>\$ 300.9</u>	<u>\$ 175.2</u>	<u>\$ 994.6</u>
Accumulated goodwill impairment loss at December 31, 2020	<u>\$ 23.5</u>	<u>\$ 49.3</u>	<u>\$ 35.8</u>	<u>\$ 20.4</u>	<u>\$ 129.0</u>
Accumulated goodwill impairment loss at December 31, 2021	<u>\$ 23.5</u>	<u>\$ 49.3</u>	<u>\$ 35.8</u>	<u>\$ 20.4</u>	<u>\$ 129.0</u>

⁽¹⁾ For further information regarding goodwill acquired and the purchase price adjustments during the period refer to Note 13, “Business Combinations.”

⁽²⁾ Goodwill acquired during the period for the L.A. Turbine acquisition of \$42.1 was allocated to certain reporting units as follows: \$29.1 - Specialty Products, \$10.1 - Repair, Service & Leasing and \$2.9 - Heat Transfer Systems. Goodwill acquired during the period for the Cryogenic Gas Technologies, Inc., AdEdge Holdings, LLC acquisitions and Earthly Labs Inc. was \$34.9, \$15.9 and \$47.2, respectively and is included in the Specialty Products segment.

⁽³⁾ During the year ended December 31, 2021, we recorded purchase price adjustments that increased goodwill by \$1.4 in Specialty Products related to the BlueInGreen, LLC acquisition.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

The following table represents the activity in goodwill net of accumulated goodwill impairment loss (“goodwill, net”) and accumulated goodwill impairment loss by segment ⁽¹⁾:

	D&S East	D&S West	E&C Cryogenics	E&C FinFans	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Consolidated
Goodwill, net balance at December 31, 2019	\$ 117.0	\$ 118.6	\$ 176.2	\$ 399.6	\$ —	\$ —	\$ —	\$ —	\$ 811.4
Foreign currency translation adjustments and other	4.5	—	—	1.3	—	—	—	—	5.8
Purchase price adjustments	—	—	—	0.4	—	—	—	—	0.4
Goodwill, net balance at September 30, 2020	121.5	118.6	176.2	401.3	—	—	—	—	817.6
Reallocation, D&S East	(121.5)	—	—	—	43.3	—	64.6	13.6	—
Reallocation, D&S West	—	(118.6)	—	—	43.2	—	63.6	11.8	—
Reallocation, E&C Cryogenics	—	—	(176.2)	—	—	137.0	5.6	33.6	—
Reallocation, E&C FinFans	—	—	—	(401.3)	—	295.6	—	105.7	—
Goodwill, net balance at October 1, 2020	—	—	—	—	86.5	432.6	133.8	164.7	817.6
Foreign currency translation adjustments and other	—	—	—	—	6.7	2.6	(0.2)	0.4	9.5
Goodwill acquired during the period	—	—	—	—	—	—	38.8	—	38.8
Goodwill, net balance at December 31, 2020	\$ —	\$ —	\$ —	\$ —	\$ 93.2	\$ 435.2	\$ 172.4	\$ 165.1	\$ 865.9
Accumulated goodwill impairment loss at December 31, 2019	\$ —	\$ 64.4	\$ 40.9	\$ 23.7	\$ —	\$ —	\$ —	\$ —	\$ 129.0
Accumulated goodwill impairment loss at September 30, 2020	—	64.4	40.9	23.7	—	—	—	—	129.0
Reallocation, D&S West	—	(64.4)	—	—	23.5	—	34.5	6.4	—
Reallocation, E&C Cryogenics	—	—	(40.9)	—	—	31.8	1.3	7.8	—
Reallocation, E&C FinFans	—	—	—	(23.7)	—	17.5	—	6.2	—
Accumulated goodwill impairment loss at December 31, 2020	\$ —	\$ —	\$ —	\$ —	\$ 23.5	\$ 49.3	\$ 35.8	\$ 20.4	\$ 129.0

⁽¹⁾ The prior segments’ goodwill and accumulated goodwill impairment loss at December 31, 2019 were reassigned to four new reporting units, Cryo Tank Solutions, Heat Transfer Systems, Specialty Products and Repair, Service & Leasing, based on their relative fair values as of October 1, 2020.

We reorganized our reporting structure such that the composition of our reporting units changed effective October 1, 2020, which was also the goodwill reassignment date. We determined the fair values of each of our prior reporting units as of the goodwill reassignment date to assess whether there was an indication of impairment before and after the reassignment. We performed a goodwill impairment Step 1 test, as defined in Note 2, “Significant Accounting Policies” on each of our previous reporting units prior to the goodwill reassignment and determined that their fair values were in excess of their respective carrying amounts as of October 1, 2020. Furthermore, we performed a goodwill impairment Step 1 test on the new reporting units after the goodwill reassignment and determined that their fair values were in excess of their respective carrying amounts as of October 1, 2020.

On September 30, 2020, we allocated a portion of the D&S West reporting unit’s goodwill to the cryobiological products business asset group on a relative fair value basis. Refer to Note 3, “Discontinued Operations,” for further information. We determined the fair value of D&S West reporting unit as of the goodwill reassignment date to assess whether there was an indication of impairment before the reassignment. We performed an interim goodwill impairment Step 1 test, as defined in our

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Note 2, “Significant Accounting Policies” on the D&S West reporting unit prior to the goodwill reassignment and determined that its fair value was substantially in excess of its carrying amount as of September 30, 2020.

Furthermore, when a portion of goodwill is allocated to an asset group to be disposed of, we test the goodwill remaining in the portion of the reporting unit to be retained for impairment. We elected to perform an interim goodwill Step 0 Test, as defined in Note 2, “Significant Accounting Policies” on the D&S West reporting unit after the goodwill reassignment. As a result of the Step 0 Test, no impairment of the D&S West reporting unit after the goodwill reassignment was indicated.

Intangible Assets

We recorded an impairment loss of \$16.0 during 2020 relative to our \$55.0 trademarks and trade names indefinite-lived intangible asset of our AXC business (“AXC Intangible Asset”) in our Heat Transfer Systems segment. Industry-wide softness in demand for midstream and upstream compression equipment represented impairment indicators requiring us to re-evaluate the fair value of the AXC Intangible Asset. We determined the fair value of the AXC Intangible Asset under the relief-from-royalty method and conducted an impairment test as defined in Note 2, “Significant Accounting Policies.” We determined that the fair value of the AXC Intangible Asset was \$39.0 and impaired the AXC Intangible Asset by a value equal to the difference in the carrying amount and calculated fair value.

The following table displays the gross carrying amount and accumulated amortization for finite-lived intangible assets and indefinite-lived intangible assets (exclusive of goodwill) ⁽¹⁾:

	Weighted-average Estimated Useful Life	December 31, 2021		December 31, 2020	
		Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Finite-lived intangible assets:					
Customer relationships	13 years	\$ 312.1	\$ (82.2)	\$ 302.5	\$ (59.9)
Unpatented technology	13 years	184.6	(30.1)	110.4	(22.3)
Patents and other	5 years	7.9	(2.3)	8.4	(1.8)
Trademarks and trade names	14 years	3.5	(1.8)	3.6	(1.4)
Land use rights	50 years	11.4	(1.6)	11.1	(1.4)
Total finite-lived intangible assets	14 years	\$ 519.5	\$ (118.0)	\$ 436.0	\$ (86.8)
Indefinite-lived intangible assets:					
Trademarks and trade names ⁽²⁾		\$ 154.6	\$ —	\$ 143.9	\$ —
Total intangible assets		\$ 674.1	\$ (118.0)	\$ 579.9	\$ (86.8)

⁽¹⁾ Amounts include the impact of foreign currency translation. Fully amortized or impaired amounts are written off.

⁽²⁾ Accumulated indefinite-lived intangible assets impairment loss was \$16.0 at both December 31, 2021 and 2020.

Amortization expense for intangible assets subject to amortization was \$38.9, \$45.7 and \$39.8 for the years ended December 31, 2021, 2020 and 2019, respectively. We estimate amortization expense to be recognized during the next five years as follows:

For the Year Ending December 31,	
2022	\$ 41.8
2023	41.3
2024	40.0
2025	39.0
2026	38.3

See Note 13, “Business Combinations,” for further information related to intangible assets acquired.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Government Grants

During the fourth quarter 2021, we were selected by the U.S. Department of Energy (“DOE”) for funding of up to \$5 million to engineer and build our Cryogenic Carbon Capture™ (“CCC”) system for a cement plant (“CCC Grants”). During the project’s duration, the DOE shall reimburse us in cash for approved expenses we incur. This project began on February 1, 2022, at which point expenses incurred may be submitted for reimbursement. The agreement will be effective until April 30, 2025.

CCC grants will be recorded as a reduction to work in process inventory as each reimbursement is approved by the DOE.

We received certain government grants related to land use rights for capacity expansion in China (“China Government Grants”). China Government Grants are generally recorded in other current liabilities and other long-term liabilities in the consolidated balance sheets and generally recognized into income over the useful life of the associated assets (10 to 50 years).

China Government Grants are presented in our consolidated balance sheets as follows:

	December 31,	
	2021	2020
Current	\$ 0.5	\$ 0.5
Long-term	7.0	7.3
Total China Government Grants	<u>\$ 7.5</u>	<u>\$ 7.8</u>

We also received government grants from certain local jurisdictions within the United States, which are recorded in other assets in the consolidated balance sheets and were not significant for the periods presented.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

NOTE 10 — Debt and Credit Arrangements

Summary of Outstanding Borrowings

The following table represents the components of our borrowings:

	December 31,	
	2021	2020
Senior secured revolving credit facilities and term loan:		
Senior secured revolving credit facility due October 2026 ^{(1) (2)}	\$ 600.8	\$ —
Term loan due June 2024	—	103.1
Senior secured revolving credit facility due June 2024	—	123.5
Unamortized debt issuance costs	—	(5.0)
Senior secured revolving credit facility and term loan, net of debt issuance costs	600.8	221.6
Convertible notes due November 2024:		
Principal amount	258.8	258.8
Unamortized discount ⁽³⁾	—	(34.8)
Unamortized debt issuance costs	(2.9)	(3.1)
Convertible notes due November 2024, net of unamortized discount and debt issuance costs	255.9	220.9
Total debt, net of unamortized discount and debt issuance costs	856.7	442.5
Less: current maturities ⁽⁴⁾	255.9	220.9
Long-term debt	\$ 600.8	\$ 221.6

⁽¹⁾ As of December 31, 2021, there was \$600.8 outstanding under the senior secured revolving credit facility due October 2026 bearing a weighted-average interest rate of 2.1% and \$30.0 in letters of credit and bank guarantees outstanding supported by the senior secured revolving credit facility due October 2026. As of December 31, 2021 the senior secured revolving credit facility due October 2026 had availability of \$369.2.

⁽²⁾ A portion of borrowings outstanding under our senior secured revolving credit facilities due October 2026 is denominated in euros (“EUR Revolver Borrowings”). EUR Revolver Borrowings outstanding were 78.0 million euros (equivalent to \$88.3) at December 31, 2021.

⁽³⁾ We derecognized the debt discount associated with the convertible notes due November 2024 upon adoption of ASU 2020-06 on January 1, 2021.

⁽⁴⁾ Our convertible notes due November 2024, net of unamortized discount and debt issuance costs, are included in current maturities for both periods presented.

As of December 31, 2021, total scheduled maturities were \$859.6. There are no scheduled principal payments for any of our debt instruments until November 2024. The \$258.8 principal balance of the convertible notes due November 2024 will mature on November 15, 2024, yet the carrying amount of the convertible notes due November 2024 is treated as current for financial statement reporting purposes. Cash paid for interest during the years ended December 31, 2021, 2020 and 2019 was \$11.7, \$18.1, and \$17.7, respectively.

Senior Secured Revolving Credit Facility

On October 18, 2021 we entered into the Fifth Amended and Restated Credit Agreement (the “Amended Credit Agreement”), which provides for a Senior Secured Revolving Credit Facility (the “Amended SSRCF”). The Amended SSRCF matures on October 19, 2026.

- The Amended SSRCF has a borrowing capacity of \$1,000.0 and includes a \$100.0 sub limit for letters of credit, a \$250.0 sub limit for discretionary letters of credit and a \$100.0 sub-limit for swingline loans.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

- We may, subject to the satisfaction of certain conditions, request increases in the revolving credit facility commitments in an aggregate principal amount of up to \$500.0 or a lesser amount in integral multiples of \$25.0 to the extent existing or new lenders agree to provide such increased or additional commitments, as applicable.
- The Amended SSRCF bears interest at a base rate plus an applicable margin determined on a leveraged-based scale which (before giving effect to the sustainability pricing adjustments described below) ranges from 25 to 125 basis points for base rate loans and 125 to 225 basis points for LIBOR loans.
- The applicable margin described above is subject to further adjustments based on the reductions in the ratio between (i) the total greenhouse gas emissions, measured in metric tons CO₂e, of Chart and its subsidiaries during such calendar year and (ii) the aggregate revenue, measured in U.S. Dollars, of Chart and its subsidiaries during such calendar year. These additional pricing adjustments range from an addition of 0.05% to a reduction of 0.025% in the applicable margin described above.
- We are required to pay commitment fees on any unused commitments under the Amended SSRCF which, before giving effect to the sustainability fee adjustments (as described below), is determined on a leverage-based sliding scale ranging from 20 to 35 basis points.
- The commitment fees described above are also subject to sustainability fee adjustments based on the aforementioned ratio. The sustainability fee adjustments range from an addition of 0.01% to a reduction of 0.01%.
- Interest and fees are payable on a quarterly basis (or if earlier, at the end of each interest period for LIBOR loans).

Significant financial covenants for the Amended SSRCF include financial maintenance covenants that, as of the last day of any fiscal quarter ending on and after September 30, 2021, (i) require the ratio of the amount of Chart and its subsidiaries' consolidated total net indebtedness to consolidated EBITDA to be less than specified maximum ratio levels and (ii) require the ratio of the amount of Chart and its subsidiaries' consolidated EBITDA to consolidated cash interest expense to be greater than a specified minimum ratio level. The Amended SSRCF includes a number of other customary covenants including, but not limited to, restrictions on our ability to incur additional indebtedness, create liens or other encumbrances, sell assets, enter into sale and lease-back transactions, make certain payments, investments, loans, advances or guarantees, make acquisitions and engage in mergers or consolidations and pay dividends or distributions. At December 31, 2021, we were in compliance with all covenants.

The Amended SSRCF also contains customary events of default. If such an event of default occurs, the lenders thereunder would be entitled to take various actions, including the acceleration of amounts due and all actions permitted to be taken by a secured creditor. The Amended SSRCF is guaranteed by Chart and substantially all of its U.S. subsidiaries, and secured by substantially all of the assets of Chart and its U.S. subsidiaries and 65% of the capital stock of our material non-U.S. subsidiaries (as defined in the Amended Credit Agreement) that are owned by U.S. subsidiaries.

We recorded \$3.0 in deferred debt issuance costs, related to the Amended SSRCF and included \$5.9 and \$0.2 of the unamortized debt issuance costs from the previous senior secured revolving credit facility due June 2024 and associated term loan due June 2024, respectively, which are presented in other assets in the consolidated balance sheet at December 31, 2021 and are being amortized over the five-year term of the Amended SSRCF. At December 31, 2021, unamortized debt issuance costs associated with the Amended SSRCF were \$8.7.

In conjunction with the amendment of our credit facilities, we wrote off \$0.1 and \$3.7 of the unamortized deferred debt issuance costs associated with our previous senior secured revolving credit facility due June 2024 and the term loan due June 2024, respectively. In addition to these amounts, we also immediately expensed \$0.3 in new debt issuance costs associated with the Amended Credit Agreement in accordance with applicable accounting guidance. These charges are classified as financing costs amortization in our consolidated statement of income for the year ended December 31, 2021 and summarized in the table below.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

The following table summarizes interest expense and financing costs amortization related to the Amended SSRCF and our previous credit facilities:

	Year Ended December 31,		
	2021	2020	2019
Interest expense, senior secured revolving credit facilities due October 2026	\$ 2.5	\$ —	\$ —
Interest expense, term loan due June 2024	1.8	4.8	3.1
Interest expense, senior secured revolving credit facilities due June 2024	4.7	2.2	2.2
Total interest expense	<u>\$ 9.0</u>	<u>\$ 7.0</u>	<u>\$ 5.3</u>
Financing costs amortization, senior secured revolving credit facility due October 2026	\$ 0.4	\$ —	\$ —
Financing costs amortization, senior secured revolving credit facility and term loan due June 2024, write off of unamortized deferred debt issuance costs	3.8	—	—
Financing costs amortization, new debt issuance costs immediately charged to net income	0.3	—	—
Financing costs amortization, senior secured revolving credit facility and term loan due June 2024	2.9	3.6	2.0
Total financing costs amortization	<u>\$ 7.4</u>	<u>\$ 3.6</u>	<u>\$ 2.0</u>

2024 Convertible Notes

On November 6, 2017, we issued 1.00% Convertible Senior Subordinated Notes due November 2024 (the “2024 Notes”) in the aggregate principal amount of \$258.8, pursuant to an Indenture, dated as of such date (the “Indenture”). On December 31, 2020, we entered into the First Supplemental Indenture (the “Supplemental Indenture”) to the Indenture, between Chart and Wells Fargo Bank, National Association, as trustee, governing the 2024 Notes. Pursuant to the Supplemental Indenture, Chart irrevocably elected (i) to eliminate Chart’s option to elect Physical Settlement (as defined in the Indenture) on any conversion of 2024 Notes that occurs on or after the date of the Supplemental Indenture and (ii) that, with respect to any Combination Settlement (as defined in the Indenture) for a conversion of 2024 Notes, the Specified Dollar Amount (as defined in the Indenture) that will be settled in cash per \$1,000 principal amount of the Notes shall be no lower than \$1,000. The 2024 Notes bear interest at an annual rate of 1.00%, payable on May 15 and November 15 of each year, beginning on May 15, 2018, and will mature on November 15, 2024 unless earlier converted or repurchased.

The 2024 Notes are senior subordinated unsecured obligations of the Company and are not guaranteed by any of our subsidiaries. The 2024 Notes are senior in right of payment to our future subordinated debt, equal in right of payment with the Company’s future senior subordinated debt and are subordinated in right of payment to our existing and future senior indebtedness, including indebtedness under our existing credit agreement.

Prior to December 31, 2020, a conversion of the 2024 Notes could have been settled in cash, shares of our common stock or a combination of cash and shares of our common stock, at our election (subject to, and in accordance with, the settlement provisions of the Indenture). After December 31, 2020, a conversion of the 2024 Notes may be settled in either (1) cash or (2) cash for the principal amount of the 2024 Notes and any combination of cash and shares for the excess settlement amount above the principal amount of the 2024 Notes, at our election (subject to, and in accordance with, the settlement provisions of the Indenture and Supplemental Indenture).

The initial conversion rate for the 2024 Notes is 17.0285 shares of common stock (subject to adjustment as provided for in the Indenture) per \$1,000 principal amount of the 2024 Notes, which is equal to an initial conversion price of approximately \$58.725 per share, representing a conversion premium of approximately 35% above the closing price of our common stock of \$43.50 per share on October 31, 2017. In addition, following certain corporate events that occur prior to the maturity date as described in the Indenture, we will pay a make-whole premium by increasing the conversion rate for a holder who elects to convert its 2024 Notes in connection with such a corporate event in certain circumstances. For purposes of calculating earnings per share, if the average market price of our common stock exceeds the applicable conversion price during the periods reported, shares contingently issuable under the 2024 Notes will have a dilutive effect with respect to our common stock. Since our closing common stock price of \$159.49 at the end of the period exceeded the conversion price of \$58.725, the if-converted value exceeded the principal amount of the 2024 Notes by approximately \$444.0 at December 31, 2021. As described below,

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

we entered into convertible note hedge transactions, which are expected to reduce the potential dilution with respect to our common stock upon conversion of the 2024 Notes.

Holders of the 2024 Notes may convert their 2024 Notes at their option at any time prior to the close of business on the business day immediately preceding August 15, 2024 only under the following circumstances: (1) during any fiscal quarter commencing after December 31, 2017 (and only during such fiscal quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding fiscal quarter is greater than or equal to 130% of the applicable conversion price for the 2024 Notes on each applicable trading day; (2) during the five business day period after any 10 consecutive trading day period (the “measurement period”) in which the “trading price” (as defined in the Indenture) per one thousand U.S. dollar principal amount of Notes for each trading day of such measurement period was less than 97% of the product of the last reported sale price of our common stock and the applicable conversion rate for the 2024 Notes on each such trading day; or (3) upon the occurrence of specified corporate events described in the Indenture. On or after August 15, 2024 until the close of business on the second scheduled trading day immediately preceding November 15, 2024, holders may convert their 2024 Notes at the option of the holder regardless of the foregoing circumstances.

As of January 1, 2022, the 2024 Notes continue to be convertible at the option of the shareholders. This conversion right, which will remain available until March 31, 2022, was triggered since the closing price of our common stock was greater than or equal to \$76.3425 (130% of the conversion price of the 2024 Notes) for at least 20 trading days during the last 30 trading days ending on December 31, 2021. Since the holders of the 2024 Notes could potentially convert their 2024 Notes at their option during the three month period subsequent to December 31, 2021, the \$258.8 principal amount of the 2024 Notes was classified as a current liability in the consolidated balance sheet at December 31, 2021. We reassess the convertibility of the 2024 Notes and the related balance sheet classification on a quarterly basis. There have been no conversions as of the date of this filing.

Prior to the adoption of ASU 2020-06, we allocated the gross proceeds of the 2024 Notes between the liability and equity components of the 2024 Notes. The initial liability component of \$200.1, which was recorded as long-term debt, represents the fair value of similar debt instruments that have no conversion rights. The initial equity component of \$58.7, which was recorded as additional paid-in capital, represented the debt discount and was calculated as the difference between the fair value of the liability component and gross proceeds of the 2024 Notes. The liability component was recognized at the present value of its associated cash flows using a 4.8% straight-debt rate and was being accreted to interest expense over the term of the 2024 Notes.

After the adoption of ASU 2020-06, the 2024 Notes are no longer bifurcated into separate liability and equity components in our December 31, 2021 consolidated balance sheet. The \$258.8 principal amount of the 2024 Notes was classified as a liability only in our December 31, 2021 consolidated balance sheet. Upon adoption of ASU 2020-06 and transition, we recorded an adjustment to the convertible notes liability component, equity component (additional paid-in-capital) and retained earnings. This adjustment was calculated based on the carrying amount of the convertible notes as if it had always been treated as a liability only.

Prior to the adoption of ASU 2020-06, we recorded \$5.3 in deferred debt issuance costs associated with the 2024 Notes, which was being amortized over the term of the 2024 Notes using the effective interest method. We also recorded \$1.5 in equity issuance costs, which was recorded as a reduction to additional paid-in capital in the consolidated balance sheets. After the adoption of ASU 2020-06, we recorded an adjustment to the debt issuance costs contra liability and equity (additional paid-in-capital) components as if debt issuance costs had always been treated as a contra liability only. We amortize the adjusted unamortized debt issuance costs balance over the term of the 2024 Notes using the effective interest method. Furthermore, interest expense related to the accretion of our convertible notes due November 2024 is no longer recognized.

Refer to Note 2 “Significant Accounting Policies” for further discussion regarding the cumulative effect of the changes to our consolidated balance sheet as of January 1, 2021 from the adoption of ASU 2020-06.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

The following table summarizes interest accretion of the 2024 Notes discount, 1.0% contractual interest coupon and financing costs amortization associated with the 2024 Notes:

	Year Ended December 31,		
	2021	2020	2019
2024 Notes, interest accretion of convertible notes discount	\$ —	\$ 8.0	\$ 7.6
2024 Notes, 1.0% contractual interest coupon	2.6	2.6	2.6
2024 Notes, total interest expense	<u>\$ 2.6</u>	<u>\$ 10.6</u>	<u>\$ 10.2</u>
2024 Notes, financing costs amortization	<u>\$ 0.9</u>	<u>\$ 0.7</u>	<u>\$ 0.7</u>

Convertible Note Hedge and Warrant Transactions Associated with the 2024 Notes

In connection with the pricing of the 2024 Notes, we entered into convertible note hedge transactions (the “Note Hedge Transactions”) with certain parties, including the initial purchasers of the 2024 Notes (the “Option Counterparties”). The Note Hedge Transactions are expected generally to reduce the potential dilution upon any future conversion of the 2024 Notes. Payments for the Note Hedge Transactions totaled approximately \$59.5 and were recorded as a reduction to additional paid-in capital in the December 31, 2017 consolidated balance sheet.

We also entered into separate, privately negotiated warrant transactions (the “Warrant Transactions”) with the Option Counterparties to acquire up to 4.41 shares of our common stock. Proceeds received from the issuance of the Warrant Transactions totaled approximately \$46.0 and were recorded as an addition to additional paid-in capital in the December 31, 2017 consolidated balance sheet. The strike price of the Warrant Transactions will initially be \$71.775 per share (subject to adjustment), which is approximately 65% above the last reported sale price of our common stock on October 31, 2017. The Warrant Transactions could have a dilutive effect to our stockholders to the extent that the market price per share of our common stock, as measured under the terms of the Warrant Transactions, exceeds the applicable strike price of the warrants.

The Note Hedge Transactions and Warrant Transactions effectively increased the conversion price of the 2024 Notes. The net cost of the Note Hedge Transactions and Warrant Transactions was approximately \$13.5.

Foreign Facilities

In various markets where we do business, we have local credit facilities to meet local working capital demands, fund letters of credit and bank guarantees, and support other short-term cash requirements. The facilities generally have variable interest rates and are denominated in local currency but may, in some cases, facilitate borrowings in multiple currencies. As of December 31, 2021 and 2020 there were no borrowings outstanding under these facilities. As of December 31, 2021 and 2020, we had additional capacity of U.S. dollar equivalent \$82.4 and \$77.4, respectively. Chart had foreign letters of credit and bank guarantees totaling U.S. dollar equivalent \$31.2 and \$47.7 as of December 31, 2021 and 2020, respectively.

Letters of Credit

L.A. Turbine, a wholly-owned subsidiary of the Company, had \$0.2 in deposits in a bank outside the Amended SSRCF to secure letters of credit at December 31, 2021. Chart Energy & Chemicals, Inc., a wholly-owned subsidiary of the Company, had \$1.0 in deposits in a bank outside of our previous credit facilities to secure letters of credit at December 31, 2020. The deposits are treated as restricted cash and restricted cash equivalents in the consolidated balance sheets (\$0.2 and \$1.0 in other current assets at December 31, 2021 and 2020, respectively).

Fair Value Disclosures

The fair value of the 2024 Notes was approximately 276% and 210% of their par value as of December 31, 2021 and 2020, respectively. The 2024 Notes are actively quoted instruments and, accordingly, the fair value of the 2024 Notes was determined using Level 1 inputs.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

NOTE 11 — Financial Instruments and Derivative Financial Instruments

Concentrations of Credit Risks: We sell our products primarily to gas producers, distributors, and end-users across energy, industrial, power, HVAC and refining applications in countries throughout the world. Approximately 56%, 51%, and 48% of sales were to customers in foreign countries in 2021, 2020 and 2019, respectively.

In 2021, 2020 and 2019, no single customer accounted for more than 10% of consolidated sales. Sales to our top ten customers accounted for 39%, 42% and 34% of consolidated sales in 2021, 2020 and 2019, respectively. Our sales to particular customers fluctuate from period to period, but our large industrial gas producer and distributor customers tend to be a consistently substantial source of revenue for us.

We are subject to concentrations of credit risk with respect to our cash and cash equivalents, restricted cash and restricted cash equivalents and forward foreign currency exchange contracts. To minimize credit risk from these financial instruments, we enter into arrangements with major banks and other quality financial institutions and invest only in high-quality instruments. We do not expect any counterparties to fail to meet their obligations.

The changes in fair value with respect to our foreign currency forward contracts generated a net gain of \$1.1 for the year ended December 31, 2021, a net gain of \$1.3 for the year ended December 31, 2020 and a net gain of \$0.7 for the year ended December 31, 2019. Changes in the fair value of our foreign currency forward contracts are recorded in the consolidated statements of income as foreign currency gains or losses.

NOTE 12 — Product Warranties

We provide product warranties with varying terms and durations for the majority of our products. We estimate our warranty reserve by considering historical and projected warranty claims, historical and projected cost-per-claim, and knowledge of specific product issues that are outside our typical experience. We record warranty expense in cost of sales in the consolidated statements of income. Product warranty claims not expected to occur within one year are included as part of other long-term liabilities in the consolidated balance sheets.

The following table represents changes in our consolidated warranty reserve:

	Year Ended December 31,		
	2021	2020	2019
Beginning balance	\$ 11.9	\$ 11.5	\$ 8.7
Issued – warranty expense	5.0	6.6	7.4
Warranty usage	(6.4)	(6.2)	(4.6)
Ending balance	\$ 10.5	\$ 11.9	\$ 11.5

NOTE 13 — Business Combinations

Earthly Labs Inc. Acquisition

As discussed in Note 6, “Investments”, we previously held a 15% equity investment in Earthly Labs. On December 14, 2021, we acquired the remaining 85% of Earthly Labs for approximately \$63.1 (subject to certain customary adjustments) or \$59.6 net of \$3.5 cash acquired, of which approximately 63% was paid in cash (\$39.7) and 37% was paid in shares of common stock of Chart, par value \$0.01 to certain sellers of Earthly Labs who are accredited investors (0.14 shares or \$23.4). Such shares of common stock of Chart were valued for this purpose by using a 5-day volume-weighted average price per share of \$169.42. In connection with the Earthly Labs acquisition, Chart shall pay to the sellers a royalty on sales of a carbon capture unit for residential use launched for sale to the public by Chart, which has not yet been developed. Refer to the “Contingent Consideration” section below for further discussion. Earthly Labs is a leading provider of small-scale carbon capture systems offering an affordable, small footprint technology platform called “CiCi ®” to capture, recycle, reuse, track and sell CO₂. Earthly Labs proprietary approach includes hardware, software and services to address half of all existing carbon dioxide emissions from industrial sources while converting molecules to value. The preliminary estimated fair value of the total net assets acquired include goodwill, identifiable intangible assets and other net liabilities at the date of acquisition in the amounts of \$47.2, \$27.0 and \$11.1, respectively. Intangible assets consists of unpatented technology, trade names, customer relationships and backlog.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

AdEdge Holdings, LLC Acquisition

On August 27, 2021, we acquired 100% of the equity interests of AdEdge Holdings, LLC (“AdEdge”) for approximately \$37.5 in cash (subject to certain customary adjustments), net of \$1.4 of cash acquired. AdEdge is a water treatment technology and solution provider specializing in the design, development, fabrication and supply of water treatment solutions, specialty medias, legacy and innovative technologies that remove a wide range of contaminants from water. The preliminary estimated fair value of the total net assets acquired include goodwill, identifiable intangible assets and other net assets at the date of acquisition in the amounts of \$15.9, \$18.2 and \$4.8, respectively.

L.A. Turbine Acquisition

On July 1, 2021, we acquired 100% of the equity interests of L.A. Turbine (“LAT”) for approximately \$76.6 in cash (subject to certain customary adjustments), net of \$1.4 of cash acquired. LAT is a global leader in turboexpander design, engineering, manufacturing, assembly and testing process for new and aftermarket equipment, with significant in-house engineering expertise.

The preliminary estimated useful lives of identifiable finite-lived intangible assets range from less than one year to 15 years. The excess of the purchase price over the estimated fair values is assigned to goodwill. LAT complements our Heat Transfer Systems and Specialty Products segments with the addition of its application-specific, highly engineered turboexpanders which further differentiates Chart’s end market diversity especially in hydrogen and helium liquefaction in addition to industrial gas, natural gas processing, power generation and petrochemical applications. Furthermore, LAT’s aftermarket business will further bolster our Repair, Service & Leasing segment. The addition of LAT’s turboexpanders new equipment and aftermarket businesses allows Chart to offer a broader technology solution for our customers. Management anticipates the combination of strong engineering cultures will continue to further develop full service solutions for our customers. The preliminary estimated goodwill was established due to the benefits outlined above, as well as the benefits derived from the anticipated synergies of LAT integrating with our Heat Transfer Systems, Specialty Products and Repair, Service & Leasing segments. Goodwill recorded for the LAT acquisition is not expected to be deductible for tax purposes.

The following table summarizes the preliminary estimated fair value of the assets acquired in the L.A. Turbine acquisition at the acquisition date:

Net assets acquired:	
Identifiable intangible assets	\$ 43.7
Goodwill	42.1
Other assets	4.6
Property, plant and equipment	2.6
Cash and cash equivalents	1.4
Liabilities	(16.4)
Net assets acquired	<u>\$ 78.0</u>

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Information regarding preliminary estimated identifiable intangible assets acquired in the L.A. Turbine acquisition is presented below:

	Weighted-average Estimated Useful Life	Preliminary Estimated Asset Fair Value
Finite-lived intangible assets acquired:		
Unpatented technology	14.5 years	\$ 33.4
Customer relationships	14.5 years	1.5
Backlog	2.5 years	0.7
Other identifiable intangible assets ⁽¹⁾	3.4 years	0.2
Total finite-lived intangible assets acquired	14.2 years	35.8
Indefinite-lived intangible assets acquired:		
Trademarks and trade names		7.9
Total intangible assets acquired		<u>\$ 43.7</u>

⁽¹⁾ Other identifiable intangible assets is included in “Patents and other” in Note 9, “Goodwill and Intangible Assets.”

Cryogenic Gas Technologies, Inc. Acquisition

On February 16, 2021, we acquired 100% of the equity interests of Cryogenic Gas Technologies, Inc. (“Cryo Technologies”) for approximately \$55.0 in cash (subject to certain customary adjustments), net of \$0.6 cash acquired. Cryo Technologies is a global leader in custom engineered process systems to separate, purify, refrigerate, liquefy and distribute high value industrial gases such as hydrogen, helium, argon and hydrocarbons with design capabilities for cold boxes for hydrogen and helium use. The distribution systems Cryo Technologies supplies are located within the helium and hydrogen liquefaction facilities and are inclusive of trailer loading systems, which facilitates the first step in product distribution. The estimated fair value of the total net assets acquired include goodwill, identifiable intangible assets and other net assets at the date of acquisition in the amounts of \$34.9, \$19.5 and \$1.2, respectively. The purchase price allocation reported at March 31, 2021 was preliminary and was based on provisional fair values. During the remainder of 2021 we received and analyzed new information about certain intangible assets and subsequently increased their fair value by \$17.6. Intangible assets consists of customer relationships, unpatented technology, trademarks and trade names, backlog and non-competition agreements.

Sustainable Energy Solutions, Inc. Acquisition

On December 23, 2020, we completed the acquisition of Sustainable Energy Solutions, Inc. (“SES”). SES’s Cryogenic Carbon Capture™ (CCC) technology eliminates most emissions from fossil fuels while enabling better use of intermittent renewables through grid-scale energy storage. The stock purchase was completed for a closing purchase price of \$20.0 in cash at closing, subject to a post-closing working capital adjustment, plus a potential earn-out not to exceed \$25.0. The estimated fair value of the net assets acquired and goodwill at the date of acquisition was \$13.4 and \$24.0, respectively. Net assets includes \$17.3 in intangible assets, which consists of unpatented technology, trade names and non-compete contracts. There were no changes to the fair value of intangible assets of SES during 2021.

BlueInGreen, LLC Acquisition

On November 3, 2020, we completed the acquisition of BlueInGreen, LLC (“BIG”), a leading dissolved-gas expert providing custom-engineered solutions for water treatment and industrial process applications that delivers tangible economic, social and environmental value. The stock purchase was completed for a purchase price of \$20.3 in cash at closing (subject to customary adjustments), plus a potential earn-out not to exceed \$6.0. The estimated fair value of the net assets acquired and goodwill at the date of acquisition was \$7.7 and \$16.0, respectively. The purchase price allocation reported at December 31, 2020 was preliminary and was based on provisional fair values. During 2021, we received and analyzed new information about certain intangible assets and subsequently decreased their estimated fair value by \$1.4. Net assets includes \$6.2 in intangible assets, which consists of non-compete contracts, unpatented technology, trademarks and trade names, certifications and licenses and customer relationships.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Alabama Trailers Acquisition

On October 13, 2020, we completed the acquisition of the Theodore, Alabama cryogenic trailer and hydrogen trailer (transport) assets of Worthington Industries, Inc. (NYSE: WOR) for \$10.0 in cash (“Alabama Trailers”). Worthington Industries, Inc. exited the hydrogen trailer business and sold the business to Chart at a discount. As a result of the acquisition, we recorded a bargain purchase gain of \$5.0. Alabama Trailers designs, manufactures and sells cryogenic trailers and hydrogen trailers used in industrial gas and energy applications.

The purchase price allocations of Earthly Labs, AdEdge and LAT are preliminary and are based on provisional fair values and subject to revision as we finalize third-party valuations and other analyses. Final determination of the fair values may result in further adjustments to the value of net assets acquired.

Contingent Consideration

The estimated fair value of contingent consideration was \$16.9 for SES and \$3.2 for BIG at the date of acquisitions and was valued according to a discounted cash flow approach, which included assumptions regarding the probability of achieving certain targets and a discount rate applied to the potential payments. Potential payments are measured between the period commencing January 1, 2022 and ending on December 31, 2028 based on the attainment of certain earnings targets. The potential payments related to both SES and BIG contingent consideration on a combined basis is between \$0.0 and \$31.0. For the year ended December 31, 2021, the estimated fair value of contingent consideration related to SES increased by \$2.2 while the estimated fair value of contingent consideration related to BIG decreased by \$1.1.

In connection with the Earthly Labs acquisition, Chart shall pay to the sellers a royalty on sales of a carbon capture unit for residential use launched for sale to the public by Chart in an amount equal to 4% of such sales. Potential royalty payments shall be paid to the sellers during the three year period following Chart’s launch of this product. This product has not yet been developed and as such, the fair value of the contingent consideration liability that arises from this arrangement was insignificant as of December 31, 2021.

Valuations are performed using Level 3 inputs as defined in Note 2, “Significant Accounting Policies” and are evaluated on a quarterly basis based on forecasted sales and earnings targets. Contingent consideration liabilities are classified as other current liabilities and other long-term liabilities in the consolidated balance sheets. Changes in the fair value of contingent consideration liabilities, including accretion, are recorded as selling, general and administrative expenses in the consolidated statements of income and comprehensive income. No cash consideration was transferred for contingent consideration as of the acquisition dates and as such, the arrangements represent a noncash investing activity in the statement of cash flows for the years ended December 31, 2021 and 2020.

The following table represents the changes to our contingent consideration liabilities:

	SES	BIG	Total
Balance at December 31, 2020 ⁽¹⁾	\$ 16.9	\$ 3.2	\$ 20.1
Increase (decrease) in fair value of contingent consideration liabilities	2.2	(1.1)	1.1
Balance at December 31, 2021	<u>\$ 19.1</u>	<u>\$ 2.1</u>	<u>\$ 21.2</u>

⁽¹⁾ For the year ended December 31, 2020, the fair value of contingent consideration liabilities was unchanged.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

NOTE 14 — Accumulated Other Comprehensive Income (Loss)

Accumulated Other Comprehensive (Loss) Income

The components of accumulated other comprehensive (loss) income are as follows:

	December 31, 2021		
	Foreign currency translation adjustments	Pension liability adjustments, net of taxes	Accumulated other comprehensive income (loss)
Beginning Balance	\$ 13.8	\$ (11.4)	\$ 2.4
Other comprehensive (loss) income	(29.0)	3.9	(25.1)
Amounts reclassified from accumulated other comprehensive (loss) income, net of income taxes	—	1.0	1.0
Net current-period other comprehensive (loss) income, net of taxes	(29.0)	4.9	(24.1)
Ending Balance	<u>\$ (15.2)</u>	<u>\$ (6.5)</u>	<u>\$ (21.7)</u>

	December 31, 2020		
	Foreign currency translation adjustments	Pension liability adjustments, net of taxes	Accumulated other comprehensive income (loss)
Beginning Balance	\$ (25.0)	\$ (10.9)	\$ (35.9)
Other comprehensive income (loss)	38.8	(1.7)	37.1
Amounts reclassified from accumulated other comprehensive (loss) income, net of income taxes	—	1.2	1.2
Net current-period other comprehensive income (loss), net of taxes	38.8	(0.5)	38.3
Ending Balance	<u>\$ 13.8</u>	<u>\$ (11.4)</u>	<u>\$ 2.4</u>

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

NOTE 15 — Earnings Per Share

The following table presents calculations of net income per share of common stock:

	Year Ended December 31,		
	2021	2020	2019
Net income attributable to Chart Industries, Inc.			
Income from continuing operations	\$ 59.1	\$ 68.9	\$ 31.4
Income from discontinued operations, net of tax	—	239.2	15.0
Net income attributable to Chart Industries, Inc.	<u>\$ 59.1</u>	<u>\$ 308.1</u>	<u>\$ 46.4</u>
Earnings per common share – basic:			
Income from continuing operations	\$ 1.66	\$ 1.95	\$ 0.93
Income from discontinued operations	—	6.76	0.44
Net income attributable to Chart Industries, Inc.	<u>\$ 1.66</u>	<u>\$ 8.71</u>	<u>\$ 1.37</u>
Earnings per common share – diluted:			
Income from continuing operations	\$ 1.44	\$ 1.89	\$ 0.89
Income from discontinued operations	—	6.56	0.43
Net income attributable to Chart Industries, Inc.	<u>\$ 1.44</u>	<u>\$ 8.45</u>	<u>\$ 1.32</u>
Weighted average number of common shares outstanding – basic	35.61	35.38	33.91
Incremental shares issuable upon assumed conversion and exercise of share-based awards	0.34	0.26	0.42
Incremental shares issuable due to dilutive effect of the convertible notes	2.76	0.53	0.82
Incremental shares issuable due to dilutive effect of warrants	2.40	0.28	0.02
Weighted average number of common shares outstanding – diluted	<u>41.11</u>	<u>36.45</u>	<u>35.17</u>

Diluted earnings per share does not consider the following potential common shares as the effect would be anti-dilutive:

	Year Ended December 31,		
	2021	2020	2019
Share-based awards	0.03	0.27	0.15
Convertible note hedge and capped call transactions ⁽¹⁾	2.76	0.53	0.82
Warrants	—	—	—
Total anti-dilutive securities	<u>2.79</u>	<u>0.80</u>	<u>0.97</u>

⁽¹⁾ The convertible note hedge offsets any dilution upon actual conversion of the 2024 Notes up to a common stock price of \$71.775 per share. For further information, refer to Note 10, “Debt and Credit Arrangements.”

NOTE 16 — Income Taxes

Income from Continuing Operations Before Income Taxes

Income from continuing operations before income taxes consists of the following:

	Year Ended December 31,		
	2021	2020	2019
United States	\$ 25.9	\$ 48.0	\$ 24.4
Foreign	48.2	37.2	10.2
Income from continuing operations before income taxes	<u>\$ 74.1</u>	<u>\$ 85.2</u>	<u>\$ 34.6</u>

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Provision

Significant components of income tax expense (benefit), net are as follows:

	Year Ended December 31,		
	2021	2020	2019
Current:			
Federal	\$ 1.7	\$ (0.2)	\$ 4.9
State and local	3.2	1.9	2.7
Foreign	16.5	12.2	11.4
Total current	21.4	13.9	19.0
Deferred:			
Federal	(5.8)	7.5	(2.0)
State and local	1.1	(2.9)	(5.5)
Foreign	(3.2)	(3.6)	(8.7)
Total deferred	(7.9)	1.0	(16.2)
Total income tax expense (benefit), net	\$ 13.5	\$ 14.9	\$ 2.8

Effective Tax Rate Reconciliation

The reconciliation of income taxes computed at the U.S. federal statutory tax rate to income tax expense is as follows:

	Year Ended December 31,		
	2021	2020	2019
Income tax expense at U.S. statutory rate	\$ 15.6	\$ 17.9	\$ 7.3
State income taxes, net of federal tax benefit	3.6	(0.9)	(2.3)
Foreign income, net of credit on foreign taxes	2.1	—	(1.3)
Effective tax rate differential of earnings outside of U.S.	1.8	2.4	—
Change in valuation allowance	(5.9)	(4.2)	1.0
Research & experimentation credits	(0.9)	(1.0)	(0.9)
Foreign derived intangible income	(0.8)	(0.2)	(1.2)
Net non-deductible items	1.6	1.2	2.3
Change in uncertain tax positions	(0.2)	(0.6)	—
Share-based compensation	(2.2)	(1.7)	(2.8)
Tax effect of 2017 tax reform federal rate change	—	(0.2)	—
Other items	(1.2)	2.2	0.7
Income tax expense	\$ 13.5	\$ 14.9	\$ 2.8

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Deferred Taxes

Deferred income taxes reflect the net tax effect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets and liabilities are as follows:

	December 31,	
	2021	2020
Deferred tax assets:		
Accruals and reserves	\$ 16.8	\$ 15.7
Pensions	0.5	2.6
Inventory	42.3	3.5
Share-based compensation	4.5	4.4
Tax credit carryforwards	17.6	10.6
Foreign net operating loss carryforwards	16.3	22.4
State net operating loss carryforwards	2.3	1.9
Convertible notes	6.3	0.7
Operating leases	7.5	8.1
Other – net	11.1	7.4
Total deferred tax assets before valuation allowances	125.2	77.3
Valuation allowances	(21.6)	(33.9)
Total deferred tax assets, net of valuation allowances	<u>\$ 103.6</u>	<u>\$ 43.4</u>
Deferred tax liabilities:		
Property, plant and equipment	\$ 37.9	\$ 27.8
Goodwill and intangible assets	82.2	69.1
Other – net	(0.1)	5.2
Investments	3.8	—
Deferred revenue	37.9	—
Total deferred tax liabilities	<u>\$ 161.7</u>	<u>\$ 102.1</u>
Net deferred tax liabilities	<u>\$ 58.1</u>	<u>\$ 58.7</u>
The net deferred tax liability is classified as follows:		
Other assets	\$ (1.7)	\$ (1.5)
Long-term deferred tax liabilities	59.8	60.2
Net deferred tax liabilities	<u>\$ 58.1</u>	<u>\$ 58.7</u>

As of December 31, 2021, we have \$133.5 of state and foreign net operating losses, of which approximately \$24.6 expire between 2022 and 2030.

We routinely review valuation allowances recorded against deferred tax assets on a more likely than not basis as to whether we have the ability to realize the deferred tax assets. As of December 31, 2021, we have valuation allowances totaling \$21.6 consisting primarily of \$16.6 associated with our operations in China.

Other Tax Information

We previously considered the earnings in our non-U.S. subsidiaries to be indefinitely reinvested and, accordingly, recorded no deferred income taxes. We have analyzed our global working capital and cash requirements as of December 31, 2021 and have determined that we do not plan to repatriate any earnings at this time.

Cash paid for income taxes during the years ended December 31, 2021, 2020 and 2019 was \$57.2, \$12.5, and \$16.8, respectively.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Unrecognized Income Tax Benefits

The reconciliation of beginning to ending unrecognized tax benefits is as follows:

	Year Ended December 31,		
	2021	2020	2019
Unrecognized tax benefits at beginning of the year	\$ 1.9	\$ 2.4	\$ 2.3
Additions (reductions) for tax positions taken during the prior period	0.4	(0.6)	(0.1)
Additions for tax positions taken during the current period	—	0.2	0.2
Reductions relating to settlements with taxing authorities	—	(0.1)	—
Lapse of statutes of limitation	(0.6)	—	—
Unrecognized tax benefits at end of the year	<u>\$ 1.7</u>	<u>\$ 1.9</u>	<u>\$ 2.4</u>

Included in the balance of unrecognized tax benefits at December 31, 2021 and 2020 was \$1.2 and \$1.3, respectively of income tax (benefit)/expenses, which, if ultimately recognized, would impact our annual effective tax rate.

We accrued approximately \$0.3 of interest and penalties at both December 31, 2021 and 2020. Due to the expiration of various statutes of limitation, it is reasonably possible our unrecognized tax benefits at December 31, 2021 may decrease within the next twelve months by \$0.1. We are subject to income taxes in the U.S. federal jurisdiction and various state and foreign jurisdictions. With few exceptions, we are no longer subject to U.S. federal, state and local or non-U.S. income tax examinations by tax authorities for years prior to 2017.

NOTE 17 — Employee Benefit Plans

Defined Benefit Plan

We have a defined benefit pension plan which is frozen, that covers certain U.S. hourly and salary employees (the “Chart Plan”). The defined benefit plan provides benefits based primarily on the participants’ years of service and compensation. The Retirement Plan for Union Employees of Smithco Engineering Inc. (the “Hudson Plan”) merged into the Chart Plan as of February 28, 2021 (the “Hudson Plan merger”).

The components of net periodic pension (income) expense are as follows:

	Year Ended December 31,		
	2021	2020	2019
Interest cost	\$ 1.7	\$ 1.8	\$ 2.2
Expected return on plan assets	(3.8)	(3.3)	(2.9)
Amortization of net loss	1.0	1.2	1.3
Total net periodic pension (income) expense	<u>\$ (1.1)</u>	<u>\$ (0.3)</u>	<u>\$ 0.6</u>

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

The changes in the projected benefit obligation and plan assets, the funded status of the plans and the amounts recognized in the consolidated balance sheets are as follows:

	December 31,	
	2021	2020
Change in projected benefit obligation:		
Projected benefit obligation at beginning of year	\$ 62.5	\$ 58.5
Interest cost	1.7	1.8
Assumption changes	(1.9)	5.2
Acquisition of Hudson Plan ⁽¹⁾	3.1	—
Benefits paid	(2.8)	(2.7)
Actuarial losses (gains)	0.9	(0.3)
Projected benefit obligation at year end	<u>63.5</u>	<u>62.5</u>
Change in plan assets:		
Fair value of plan assets at beginning of year	53.9	49.1
Actual return	8.3	6.4
Acquisition of Hudson Plan ⁽¹⁾	2.4	—
Employer contributions	0.1	1.1
Benefits paid	(2.8)	(2.7)
Fair value of plan assets at year end	<u>61.9</u>	<u>53.9</u>
Funded status (Accrued pension liabilities)	<u>\$ (1.6)</u>	<u>\$ (8.6)</u>
Unrecognized actuarial loss recognized in accumulated other comprehensive income (loss)	<u>\$ 8.0</u>	<u>\$ 14.9</u>

⁽¹⁾ The 2021 changes in the projected benefit obligation and plan assets reflect the effect of the Hudson Plan merger. The Hudson Plan accrued pension liability as of December 31, 2020 is not included in the table above. At December 31, 2020, the projected benefit obligation of the Hudson Plan was \$2.9 while the fair value of plan assets was \$2.0. Consequently, at December 31, 2020, a liability of \$1.0, was included in accrued pension liabilities on the consolidated balance sheets for the underfunded status of the Hudson Plan. Pension expense relative to the Hudson Plan in 2020 was not significant.

The estimated net periodic pension income for the defined benefit pension plan that will be amortized from accumulated other comprehensive loss over the next fiscal year is \$2.1.

The actuarial assumptions used in determining pension plan information are as follows:

	December 31,		
	2021	2020	2019
Assumptions used to determine benefit obligation at year end:			
Discount rate	2.7 %	2.4 %	3.2 %
Assumptions used to determine net periodic benefit cost:			
Discount rate	2.4 %	3.2 %	4.2 %
Expected long-term weighted-average rate of return on plan assets	7.0 %	7.0 %	7.0 %

The discount rate reflects the current rate at which the pension liabilities could be effectively settled at year end. In estimating this rate, we look to rates of return on high quality, fixed-income investments that receive one of the two highest ratings given by a recognized rating agency and the expected timing of benefit payments under the plan.

The expected return assumptions were developed using an averaging formula based upon the plans' investment guidelines, mix of asset classes, historical returns of equities and bonds, and expected future returns. We employ a total return investment approach whereby a mix of equities and fixed income investments are used to maximize the long-term return of plan

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

assets for a prudent level of risk. Risk tolerance is established through careful consideration of short and long-term plan liabilities, plan funded status and corporate financial condition. The investment portfolio contains a diversified blend of equity and fixed-income investments. Furthermore, equity investments are diversified across U.S. and non-U.S. stocks, as well as growth, value, and small and large capitalizations. Investment risk is measured and monitored on an ongoing basis through quarterly investment portfolio reviews, annual liability measurements, and periodic asset/liability studies.

The target allocations by asset category and fair values of the plan assets by asset class at December 31 are as follows:

Plan Assets:	Target Allocations by Asset Category	Fair Value					
		Total		Level 2		Level 3	
		2021	2020	2021	2020	2021	2020
Equity funds	68%	\$ 43.9	\$ 38.9	\$ 43.9	\$ 38.9	\$ —	\$ —
Fixed income funds	26%	16.0	13.2	16.0	13.2	—	—
Other investments	6%	2.0	1.8	—	—	2.0	1.8
Total		\$ 61.9	\$ 53.9	\$ 59.9	\$ 52.1	\$ 2.0	\$ 1.8

The plan assets are primarily invested in pooled separate funds. The fair values of equity securities and fixed income securities held in pooled separate funds are based on net asset value of the units of the funds as determined by the fund manager. These funds are similar in nature to retail mutual funds, but are typically more efficient for institutional investors. The fair value of pooled funds is determined by the value of the underlying assets held by the fund and the units outstanding. The value of the pooled funds is not directly observable, but is based on observable inputs. As such, these plan assets are valued using Level 2 inputs. Certain plan assets in the other investments asset category are invested in a general investment account where the fair value is derived from the liquidation value based on an actuarial formula as defined under terms of the investment contract. These plan assets were valued using unobservable inputs and, accordingly, the valuation was performed using Level 3 inputs.

The following table represents changes in the fair value of plan assets categorized as Level 3 from the preceding table:

Balance at December 31, 2019	\$	0.3
Purchases, sales and settlements, net		(3.0)
Transfers, net		4.5
Balance at December 31, 2020		1.8
Purchases, sales and settlements, net		(3.0)
Transfers, net		3.2
Balance at December 31, 2021	\$	2.0

Our funding policy is to contribute at least the minimum funding amounts required by law. Based upon current actuarial estimates, we do not expect to contribute to our defined benefit pension plan until 2025. The following benefit payments are expected to be paid by the plan in each of the next five years and in the aggregate for the subsequent five years:

2022	\$	3.3
2023		3.4
2024		3.5
2025		3.5
2026		3.6
In aggregate during five years thereafter		17.9

Multi-Employer Plan

We contribute to a multi-employer plan for certain collective bargaining U.S. employees. The risks of participating in this multi-employer plan are different from a single employer plan in the following aspects:

- (a) Assets contributed to the multi-employer plan by one employer may be used to provide benefits to employees of other participating employers.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

- (b) If a participating employer ceases contributing to the plan, the unfunded obligations of the plan may be inherited by the remaining participating employers.
- (c) If we choose to stop participating in the multi-employer plan, we may be required to pay those plans an amount based on the underfunded status of the plan, referred to as a withdrawal liability.

We have assessed and determined that the multi-employer plan to which we contribute is not significant to our financial statements. We do not expect to incur a withdrawal liability or expect to significantly increase our contribution over the remainder of the current contract period, which ends in February 2023. We made contributions to the bargaining unit supported multi-employer pension plan resulting in expense of \$0.5 for the years ended December 31, 2021, 2020 and 2019.

Defined Contribution Savings Plan

We have a defined contribution savings plan that covers most of our U.S. employees. Company contributions to the plan are based on employee contributions, and include a Company match and discretionary contributions. Expenses under the plan totaled \$5.7, \$4.9, and \$8.7 for the years ended December 31, 2021, 2020 and 2019, respectively.

Voluntary Deferred Income Plan

We provide additional retirement plan benefits to certain members of management under the Amended and Restated Chart Industries, Inc. Voluntary Deferred Income Plan. This is an unfunded plan. We recorded \$0.1, \$0.3, and \$0.3 of expense associated with this plan for the years ended December 31, 2021, 2020 and 2019, respectively.

NOTE 18 — Share-based Compensation

Under the 2017 Omnibus Equity Plan (the “2017 Omnibus Equity Plan”) officers and employees (including our principal executive officer, principal financial officer and other “named executive officers”) are eligible to be granted stock options, stock appreciation rights (“SARs”), restricted stock, restricted stock units (“RSUs”), performance shares and common shares. The maximum number of shares available for issuance is 1.70, which may be treasury shares or unissued shares. As of December 31, 2021, 0.24 stock options, 0.11 shares of restricted stock and RSUs, and 0.09 performance units were outstanding under the 2017 Omnibus Equity Plan.

Under the Amended and Restated 2009 Omnibus Equity Plan (“2009 Omnibus Equity Plan”) which was originally approved by our shareholders in May 2009 and re-approved by shareholders in May 2012 as amended and restated, we could grant stock options, SARs, RSUs, restricted stock, performance shares, leveraged restricted shares, and common shares to employees and directors. The maximum number of shares available for issuance is 3.35, which could be treasury shares or unissued shares. As of December 31, 2021, 0.05 stock options were outstanding under the 2009 Omnibus Equity Plan.

We recognized share-based compensation expense of \$11.2, \$8.6, and \$8.8 for the years ended December 31, 2021, 2020 and 2019, respectively. This expense is included in selling, general and administrative expenses in the consolidated statements of income. The tax benefit related to share-based compensation, which was recorded in net income in the consolidated statement of income during the years ended December 31, 2021, 2020 and 2019 was \$2.2, \$1.6 and \$2.7 respectively, which was recorded in net income in the consolidated statements of income. As of December 31, 2021, total share-based compensation expense of \$9.9 is expected to be recognized over the remaining weighted-average period of approximately 1.9 years.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

Stock Options

We use a Black-Scholes option pricing model to estimate the fair value of stock options. The expected volatility is based on historical information. The risk-free rate is based on the U.S. Treasury yield in effect at the time of the grant. Weighted-average grant-date fair values of stock options and the assumptions used in estimating the fair values are as follows:

	Year Ended December 31,		
	2021	2020	2019
Weighted-average grant-date fair value per share	\$ 52.19	\$ 28.53	\$ 30.66
Expected term (years)	4.7	4.8	5.0
Risk-free interest rate	0.33 %	1.66 %	2.24 %
Expected volatility	53.10 %	46.60 %	50.94 %

Stock options generally have a four-year graded vesting period, an exercise price equal to the fair market value of a share of common stock on the date of grant, and a contractual term of 10 years. The following table summarizes our stock option activity from continuing operations:

	December 31, 2021			
	Number of Shares	Weighted-average Exercise Price	Aggregate Intrinsic Value	Weighted-average Remaining Contractual Term
Outstanding at beginning of year	0.36	\$ 57.95		
Granted	0.06	118.41		
Exercised	(0.13)	55.39		
Forfeited / Cancelled	(0.01)	69.10		
Outstanding at end of year	0.28	\$ 71.38	\$ 25.1	6.7 years
Vested and expected to vest at end of year	0.28	\$ 70.55	\$ 12.5	6.6 years
Exercisable at end of year	0.12	\$ 54.20	\$ 24.5	5.1 years

As of December 31, 2021, total unrecognized compensation cost related to stock options expected to be recognized over the weighted-average period of approximately 2.4 years is \$2.6.

The total intrinsic value of options exercised during the years ended December 31, 2021, 2020 and 2019 was \$10.3, \$13.2, and \$13.1, respectively. The total fair value of stock options vested during the years ended December 31, 2021, 2020 and 2019 was \$2.6, \$3.5, and \$3.1, respectively.

Restricted Stock and RSUs

Restricted stock and RSUs generally vest ratably over a three-year period and are valued based on our market price on the date of grant. The following table summarizes our unvested restricted stock and RSUs activity from continuing operations:

	December 31, 2021	
	Number of Shares	Weighted-Average Grant-Date Fair Value
Unvested at beginning of year	0.19	\$ 60.28
Granted	0.06	124.32
Forfeited	(0.01)	89.70
Vested	(0.13)	61.62
Unvested at end of year	0.11	\$ 87.74

As of December 31, 2021, total unrecognized compensation cost related to unvested restricted stock and RSUs expected to be recognized over the weighted-average period of approximately 1.7 years is \$4.3.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

The weighted-average grant-date fair value of restricted stock and RSUs granted during the years ended December 31, 2021, 2020, and 2019 was \$124.32, \$63.32, and \$67.64, respectively. The total fair value of restricted stock and RSUs that vested during the years ended December 31, 2021, 2020, and 2019 was \$17.4, \$6.8, and \$7.7, respectively.

Performance Units

Performance units are earned over a three-year period. Based on the attainment of pre-determined performance condition targets as determined by the Compensation Committee of the Board of Directors, performance units earned may be in the range of between 0% and 200%. The following table, which is stated at a 100% earned percentage, summarizes our performance units activity from continuing operations:

	December 31, 2021	
	Number of Shares	Weighted-Average Grant-Date Fair Value
Unvested at beginning of year	0.07	\$ 66.76
Granted	0.03	118.41
Vested	(0.01)	51.68
Forfeited	—	118.41
Unvested at end of year	0.09	\$ 84.44

As of December 31, 2021, total unrecognized compensation cost related to performance units expected to be recognized over a weighted-average period of approximately 1.7 years is \$3.0.

The weighted-average grant-date fair value of performance units granted during the years ended December 31, 2021, 2020, and 2019 was \$118.41, \$67.50, and \$69.53, respectively. The total fair value of performance units that vested during the years ended December 31, 2021, 2020, and 2019 was \$0.9, \$0.3, and \$1.1, respectively.

Directors' Stock Grants

In 2021, 2020 and 2019, we granted the non-employee directors stock awards covering 0.01 shares of common stock for each of those years, which had fair values of \$0.6, \$1.3, and \$0.6, respectively. These stock awards were fully vested on the grant date. Likewise, the fair values were recognized immediately on the grant date.

NOTE 19 — Leases

Lessee Accounting

As of December 31, 2021 and 2020, operating ROU assets and lease liabilities were \$27.3 and \$27.2 (\$5.8 of which was current), and \$29.0 and \$28.7 (\$5.1 of which was current), respectively. The weighted-average remaining term for lease contracts was 5.1 years at December 31, 2021, with maturity dates ranging from September 2022 to February 2029. The weighted-average discount rate was 2.1% at December 31, 2021. ROU assets are classified as property, plant and equipment, net in the consolidated balance sheets.

We incurred \$12.1, \$11.1, and \$10.2 of rental expense under operating leases for the years ended December 31, 2021, 2020 and 2019, respectively. Certain operating leases contain rent escalation clauses and lease concessions that require additional rental payments in the later years of the term. Rent expense for these types of leases is recognized on a straight-line basis over the minimum lease term. Adjustments for straight-line rental expense for the respective periods was not material and as such, the majority of expense recognized was reflected in cash used in operating activities for the respective periods. This expense consisted primarily of payments for base rent on building and equipment leases. Payments related to short-term lease costs and taxes and variable service charges on leased properties were immaterial. In addition, we have the right, but no obligation, to renew certain leases for various renewal terms.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

The following table summarizes future minimum lease payments for non-cancelable operating leases as of December 31, 2021:

2022	\$	7.4
2023		6.7
2024		6.1
2025		5.0
2026		3.0
Thereafter ⁽¹⁾		1.9
Total future minimum lease payments	\$	30.1

⁽¹⁾ As of December 31, 2021, future minimum lease payments for non-cancelable operating leases for periods subsequent to 2026 relate to four leased facilities.

Lessor Accounting

We lease equipment manufactured by Chart primarily through our Cryo-Lease program as sales-type and operating leases. As of December 31, 2021 and 2020, our short-term net investment in sales-type leases was \$9.3 and \$0.2, respectively and is included in other current assets in our consolidated balance sheets. Our long-term net investment in sales-type leases was \$31.9 and \$0.5 as of December 31, 2021 and 2020, respectively, and is included in other assets in our consolidated balance sheets. For sales-type leases, interest income was \$0.9 and \$0.1 in the consolidated statements of income for the years ended December 31, 2021 and 2020, respectively.

Operating leases offered by Chart may include early termination options. At the end of a lease, a lessee generally has the option to either extend the lease, purchase the underlying equipment for a fixed price or return it to Chart. The lease agreements clearly define applicable return conditions and remedies for non-compliance to ensure that leased equipment will be in good operating condition upon return.

The following table represents sales from sales-type and operating leases:

	December 31,	
	2021	2020
Sales-type leases	\$ 46.5	\$ 0.4
Operating leases	2.4	1.2
Total sales from leases	\$ 48.9	\$ 1.6

The following table represents scheduled payments for sales-type leases:

	December 31, 2021
2022	\$ 9.7
2023	9.7
2024	9.7
2025	9.7
2026	6.4
Thereafter	2.3
Total	47.5
Less: unearned income	6.3
Total	\$ 41.2

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

The following table represents the cost of equipment leased to others:

	December 31,	
	2021	2020
Equipment leased to others, cost	\$ 13.6	\$ 5.1
Less: accumulated depreciation	2.1	1.4
Equipment leased to others, net	\$ 11.5	\$ 3.7

The following table represents payments due for operating leases:

	December 31,	
	2021	
2022	\$ 0.6	0.6
2023		0.1
2024		0.1
2025		0.1
2026		0.1
Thereafter		0.1
Total	\$ 1.1	1.1

NOTE 20 — Commitments and Contingencies

Environmental

We are subject to federal, state, local, and foreign environmental laws and regulations concerning, among other matters, waste water effluents, air emissions, and handling and disposal of hazardous materials, such as cleaning fluids. We are involved with environmental compliance, investigation, monitoring, and remediation activities at certain of our owned and formerly owned manufacturing facilities and at one owned facility that is leased to a third party, and, except for these continuing remediation efforts, believe we are currently in substantial compliance with all known environmental regulations. At December 31, 2021 and 2020, we had undiscounted accrued environmental reserves of \$0.2 and \$0.3, respectively.

Legal Proceedings

In connection with our divestiture of our Cryobiological business, Chart retained certain potential liabilities, including claims in connection with our following litigation. During the second quarter of 2018, Chart was named in lawsuits (including lawsuits filed in the U.S. District Court for the Northern District of California) filed against Chart and other defendants with respect to the alleged failure of a stainless steel cryobiological storage tank (model MVE 808AF-GB) at the Pacific Fertility Center in San Francisco, California. In May and June of 2021, the first five of the federal lawsuits went to trial, and on June 10, 2021, the jury reached a verdict against Chart in favor of the plaintiffs in those lawsuits in the amount of \$14.9, of which 90% (\$13.5) is attributable to Chart. On August 13, 2021, judgment was entered, and on September 10, 2021, we filed two post-trial motions: a motion for a new trial and a renewed motion for judgment as a matter of law. The motion for new trial or, in the alternative, request for remittitur, sought, among other relief, to have the court grant a new trial because of erroneous evidentiary rulings, a factually unsupported negligence claim, plaintiffs' attorney misconduct, allocation of fault that was not supported by the record, and excessive noneconomic damages. The renewed motion for judgment as a matter of law sought to have the court direct judgment for Chart on the negligent failure to recall claim because of our contention that plaintiffs failed to present sufficient evidence to prove each element of that claim. On November 5, 2021, the court denied these post-trial motions. Chart filed its notice of appeal on December 1, 2021. On December 7, 2021, the court stayed the remaining federal lawsuits pending resolution of Chart's appeal.

In the second quarter 2021, we recorded a loss contingency accrual and corresponding charge to net income for \$13.5 in the amount of the jury verdict attributable to Chart. The loss contingency accrual is included in other current liabilities in our consolidated balance sheet at December 31, 2021. Chart expects that any potential loss associated with the verdict will be covered by existing product liability insurance, subject to previously issued reservations of rights by the insurance carriers. Accordingly, we have recorded an offsetting \$13.5 loss recovery receivable with a corresponding credit to net income. The loss

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

recovery receivable is included in other current assets in our consolidated balance sheet at December 31, 2021. Although we continue to vigorously contest the result in this case, we continue to recognize the loss contingency accrual and related loss recovery receivable in our consolidated balance sheet at December 31, 2021.

Currently there are 164 individual cases (excluding the first five cases from the May/June 2021 trial) with respect to the Pacific Fertility Center incident on the docket in the U.S. District Court for the Northern District of California. In addition to the cases filed in the U.S. District Court for the Northern District of California, Chart is currently a defendant in 53 individual cases in the San Francisco Superior Court.

We have asserted various defenses against the claims in the lawsuits, which remain in various stages of development, including a defense that since manufacture, we were not in any way involved with the installation, ongoing maintenance or monitoring of the tank or related fertility center cryogenic systems at any time since the initial delivery of the tank. We continue to evaluate the merits of such claims for each specific case in light of the information available to date regarding use, maintenance and operation of the tank that was sold to the Pacific Fertility Center through an independent distributor, and which had been out of our control for six years prior to the alleged failure. We previously disclosed that a loss associated with the claims in the lawsuits was reasonably possible but not estimable. Although we have not reached a conclusion that losses in these cases are currently probable, based on further developments including the status of the various lawsuits, preliminary discussions in an attempt to resolve the entirety of these cases and the consideration of insurance coverage, we now estimate that losses of up to \$50.0 are reasonably possible. The reasonably possible losses are an estimate and are net of amounts we expect to be directly covered by insurance, and actual costs arising from this matter could be materially lower or higher depending on the actual costs incurred to resolve the claims in the lawsuits.

We are occasionally subject to various legal claims related to performance under contracts, product liability, taxes, employment matters, environmental matters, intellectual property, and other matters incidental to the normal course of our business. Based on our historical experience in litigating these claims, as well as our current assessment of the underlying merits of the claims and applicable insurance, if any, management believes that the final resolution of these matters, including the Pacific Fertility Center cases described above, will not have a material adverse effect on our financial position, liquidity, cash flows, or results of operations, except that our results of operations for any particular reporting period may be adversely affected by any potential or actual loss that is accrued in such period. Future developments may, however, result in resolution of these legal claims in a way that could have a material adverse effect.

NOTE 21 — Restructuring Activities

Restructuring costs of \$3.5 for the year ended December 31, 2021, was primarily related to moving and employee severance costs. During the third quarter of 2021, we announced our intention to transfer our Houston, Texas repair and service operations to our Beasley, Texas location. While we are currently in the process of reevaluating certain aspects of the scope, timing and cost of this project, including our intention to consolidate our Houston, Texas repair and service operations into our Beasley, Texas location, we expect this project to continue in order to streamline local operations.

During 2020, we implemented certain cost reduction actions across all segments and corporate to appropriately size our workforce with demand as well as eliminate redundant work. Costs were primarily related to headcount reductions. These actions resulted in total restructuring costs of \$13.6 for the year ended December 31, 2020, consisting of mainly employee severance costs of \$10.1. We also transferred operations of our heat exchanger leased facility in Tulsa, Oklahoma to our Beasley, Texas location at which we own 260 acres of land acres and repurposed our Tulsa, Oklahoma facility as a flexible manufacturing, engineering and research and development site serving multiple applications across our operating segments. We incurred costs of \$2.7 in 2020 related to this project, which is included in total restructuring costs for the year ended December 31, 2020.

During 2019, we implemented certain cost reduction or avoidance actions, including facility consolidations at certain of our U.S. properties, and a streamlining of the commercial activities surrounding our Lifecycle business in our Repair, Service & Leasing segment, geographic realignment of our manufacturing capacity and a facility closure in Asia, as well as departmental restructuring, including headcount reductions in each of our four segments. These actions resulted in total restructuring costs of \$15.6, consisting of employee severance costs, disposals of property, plant and equipment and other costs. Restructuring costs for 2019 reflect a \$1.6 credit to Repair, Service & Leasing segment restructuring costs recorded in the second quarter of 2019 due to the successful negotiation of a lease termination for a facility for our previous Lifecycle business. These restructuring activities were substantially completed by the end of 2019.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

We closely monitor our end markets and order rates and continue to take appropriate and timely actions as necessary.

The following table summarizes severance and other restructuring costs, which includes employee-related costs, facility rent and exit costs, relocation, recruiting, travel and other, for the years ended December 31, 2021, 2020 and 2019:

	Year Ended December 31,		
	2021	2020	2019
Severance:			
Cost of sales	\$ 0.4	\$ 4.6	\$ 2.9
Selling, general, and administrative expenses	0.8	5.5	1.4
Total severance costs	1.2	10.1	4.3
Other restructuring:			
Cost of sales	2.2	1.1	9.3
Selling, general, and administrative expenses	0.1	2.4	2.0
Total other restructuring costs	2.3	3.5	11.3
Total restructuring costs	\$ 3.5	\$ 13.6	\$ 15.6

The following tables summarize our restructuring accrual activities:

	Year Ended December 31, 2021					
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Corporate	Total
Balance as of December 31, 2020	\$ 0.5	\$ 0.2	\$ —	\$ —	\$ 0.1	\$ 0.8
Restructuring charges	0.3	1.7	—	1.5	—	3.5
Cash payments and other	(0.4)	(1.4)	—	(0.1)	(0.1)	(2.0)
Balance as of December 31, 2021	\$ 0.4	\$ 0.5	\$ —	\$ 1.4	\$ —	\$ 2.3
	Year Ended December 31, 2020					
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Corporate	Total
Balance as of December 31, 2019	\$ 0.5	\$ 0.2	\$ —	\$ —	\$ 0.2	\$ 0.9
Restructuring charges	2.7	7.4	0.7	0.2	2.6	13.6
Cash payments and other	(2.7)	(7.4)	(0.7)	(0.2)	(2.7)	(13.7)
Balance as of December 31, 2020	\$ 0.5	\$ 0.2	\$ —	\$ —	\$ 0.1	\$ 0.8
	Year Ended December 31, 2019					
	Cryo Tank Solutions	Heat Transfer Systems	Specialty Products	Repair, Service & Leasing	Corporate	Total
Balance as of December 31, 2018	\$ 0.7	\$ —	\$ —	\$ —	\$ 0.1	\$ 0.8
Restructuring charges	9.1	4.5	0.3	1.5	0.2	15.6
Property, plant and equipment impairment	(3.9)	(1.7)	—	—	—	(5.6)
Cash payments and other	(5.4)	(2.6)	(0.3)	(1.5)	(0.1)	(9.9)
Balance as of December 31, 2019	\$ 0.5	\$ 0.2	\$ —	\$ —	\$ 0.2	\$ 0.9

CHART INDUSTRIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(Dollars and shares in millions, except per share amounts)

NOTE 22 — Quarterly Data (Unaudited)

Selected quarterly data for the years ended December 31, 2021 and 2020 are as follows:

	Year Ended December 31, 2021				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Sales	\$ 288.5	\$ 322.0	\$ 328.3	\$ 378.9	\$ 1,317.7
Gross profit	83.9	83.2	74.9	82.2	324.2
Operating income	28.8	25.5	13.8	20.4	88.5
Income from continuing operations attributable to Chart Industries, Inc.	25.6	6.5	14.9	12.1	59.1
Net income attributable to Chart Industries, Inc.	\$ 25.6	\$ 6.5	\$ 14.9	\$ 12.1	\$ 59.1
Basic earnings per common share attributable to Chart Industries, Inc. ⁽¹⁾					
Income from continuing operations	\$ 0.72	\$ 0.18	\$ 0.42	\$ 0.34	\$ 1.66
Net income attributable to Chart Industries, Inc.	\$ 0.72	\$ 0.18	\$ 0.42	\$ 0.34	\$ 1.66
Diluted earnings per common share attributable to Chart Industries, Inc. ⁽¹⁾					
Income from continuing operations	\$ 0.63	\$ 0.16	\$ 0.36	\$ 0.29	\$ 1.44
Net income attributable to Chart Industries, Inc.	\$ 0.63	\$ 0.16	\$ 0.36	\$ 0.29	\$ 1.44

⁽¹⁾ Basic and diluted earnings per share are computed independently for each of the quarters presented. As such, the sum of quarterly basic and diluted earnings per share may not equal reported annual basic and diluted earnings per share.

	Year Ended December 31, 2020				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Sales	\$ 301.9	\$ 289.6	\$ 273.2	\$ 312.4	\$ 1,177.1
Gross profit	82.3	83.3	78.6	87.9	332.1
Operating income	15.8	25.8	28.1	22.5	92.2
Income from continuing operations attributable to Chart Industries, Inc. ⁽¹⁾	2.0	13.8	15.6	37.5	68.9
Income from discontinued operations ⁽²⁾	6.4	6.4	6.1	220.3	239.2
Net income attributable to Chart Industries, Inc.	\$ 8.4	\$ 20.2	\$ 21.7	\$ 257.8	\$ 308.1
Basic earnings per common share attributable to Chart Industries, Inc. ⁽³⁾					
Income from continuing operations	\$ 0.06	\$ 0.39	\$ 0.44	\$ 1.06	\$ 1.95
Income from discontinued operations	0.17	0.18	0.18	6.23	6.76
Net income attributable to Chart Industries, Inc.	\$ 0.23	\$ 0.57	\$ 0.62	\$ 7.29	\$ 8.71
Diluted earnings per common share attributable to Chart Industries, Inc. ⁽³⁾					
Income from continuing operations	\$ 0.06	\$ 0.39	\$ 0.43	\$ 0.97	\$ 1.89
Income from discontinued operations	0.17	0.18	0.17	5.72	6.56
Net income attributable to Chart Industries, Inc.	\$ 0.23	\$ 0.57	\$ 0.60	\$ 6.69	\$ 8.45

⁽¹⁾ Includes asset impairments of \$16.0 relative to our AXC Intangible Asset for the fourth quarter of 2020.

⁽²⁾ Includes gain on sale from the Cryobiological Divestiture of \$224.2, net of taxes of \$25.2, for the fourth quarter of 2020.

⁽³⁾ Basic and diluted earnings per share are computed independently for each of the quarters presented. As such, the sum of quarterly basic and diluted earnings per share may not equal reported annual basic and diluted earnings per share.

CHART INDUSTRIES, INC. AND SUBSIDIARIES
SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS
(Dollars in millions)

	Balance at beginning of period	Additions		Deductions	Translations	Balance at end of period
		Charged to costs and expenses	Charged to other accounts			
Year Ended December 31, 2021						
Allowance for doubtful accounts	\$ 8.4	\$ 1.2	\$ —	\$ (1.1) ⁽¹⁾	\$ (2.5)	\$ 6.0
Allowance for excess and obsolete inventory	9.7	11.4	—	(9.8) ⁽²⁾	(0.4)	10.9
Deferred tax assets valuation allowance	33.9	0.3	—	(12.7)	0.1	21.6
Year Ended December 31, 2020						
Allowance for doubtful accounts	\$ 8.5	\$ 0.4	\$ —	\$ —	\$ (0.5)	\$ 8.4
Allowance for excess and obsolete inventory	10.6	0.4	—	(0.5) ⁽²⁾	(0.8)	9.7
Deferred tax assets valuation allowance	68.2	0.3	—	(36.6) ⁽³⁾	2.0	33.9
Year Ended December 31, 2019						
Allowance for doubtful accounts	\$ 8.1	\$ 0.2	\$ —	\$ —	\$ 0.2	\$ 8.5
Allowance for excess and obsolete inventory	8.9	10.0	—	(8.0) ⁽²⁾	(0.3)	10.6
Deferred tax assets valuation allowance	65.2	5.4	5.3	(5.9)	(1.8)	68.2

⁽¹⁾ Reversal of amounts previously recorded as bad debt and uncollectible accounts written off.

⁽²⁾ Inventory items written off against the allowance.

⁽³⁾ Deductions to the deferred tax assets valuation allowance relate to decreased deferred tax assets and the release of the valuation allowance. During the year ended December 31, 2020, we reduced our deferred tax assets relative to the Cryobiological Divestiture and as such also reduced the related valuation allowance by \$32.4.

INDEX TO EXHIBITS

Exhibit No.	Description
2.1	<u>Agreement and Plan of Merger, among Chart Industries, Inc., Chart Sully Corporation, RCHPH Holdings, Inc., and R/C Hudson Holdings, L.P., solely in its capacity as the Initial Holder Representative under the Merger Agreement, dated as of June 30, 2017 (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission ("SEC") on June 30, 2017 (File No. 001-11442)).**</u>
2.1.1	<u>Amendment No. 1, dated September 19, 2017, to Agreement and Plan of Merger, among Chart Industries, Inc., Chart Sully Corporation, RCHPH Holdings, Inc., and R/C Hudson Holdings, L.P., solely in its capacity as the Initial Holder Representative under the Merger Agreement, dated as of June 30, 2017 (incorporated by reference to Exhibit 2.2 to the Registrant's Current Report on Form 8-K filed with the SEC on September 21, 2017 (File No. 001-11442)).**</u>
2.2	<u>Share Purchase Agreement, by and among Chart Industries, Inc., Alessandro Spada, Elena Spada and Federico Spada, dated as of September 26, 2018 (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on September 27, 2018 (File No. 001-11442)).**</u>
2.2.1	<u>Amended and Restated Share Purchase Agreement, by and among Chart Industries, Inc., Alessandro Spada, Elena Spada, Federico Spada and VRV S.p.a., dated as of November 13, 2018 (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 15, 2018 (File No. 001-11442)).**</u>
2.3	<u>Stock Purchase Agreement, by and among Chart Inc., Chart Industries Luxembourg S.à r.l., Chart Asia Investment Company Limited and NGK Spark Plug Co., Ltd., dated as of September 28, 2018 (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on October 1, 2018 (File No. 001-11442)).**</u>
2.4	<u>Asset Purchase Agreement, dated as of May 8, 2019, by and among Chart Industries, Inc., E&C FinFan, Inc. and Harsco Corporation (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on May 9, 2019).</u>
2.5	<u>Purchase Agreement by and between Chart Industries, Inc. and Cryoport, Inc. dated as of August 24, 2020 (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on August 25, 2020 (File No. 001-11442)).</u>
3.1	<u>Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to Amendment No. 5 to the Registrant's Registration Statement on Form S-1 (File No. 333-133254)).</u>
3.2	<u>Amended and Restated By-Laws, as amended (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on December 19, 2008 (File No. 001-11442)).</u>
4.1	<u>Form of Certificate (incorporated by reference to Exhibit 4.1 to Amendment No. 4 to the Registrant's Registration Statement on Form S-1 (File No. 333-133254)).</u>
4.2	<u>Indenture, dated as of November 6, 2017, by and between Chart Industries, Inc. and Wells Fargo Bank, National Association (including the form of the 1.00% Convertible Senior Subordinated Notes due 2024) (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 (File No. 001-11442)).</u>
4.2.1	<u>First Supplemental Indenture, dated as of December 31, 2020, to the Indenture, dated November 6, 2017 by and among Chart Industries, Inc. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on January 6, 2021 (File No. 001-11442)).</u>
4.3	<u>Description of Securities (incorporated by reference to Exhibit 4.3 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2019 (File No. 001-11442)).</u>
10.1	<u>Chart Industries, Inc. Amended and Restated 2009 Omnibus Equity Plan (incorporated by reference to Appendix A to the Registrant's definitive proxy statement filed with the SEC on April 10, 2012 (File No. 001-11442)).*</u>
10.1.1	<u>Amendment No. 1 to the Chart Industries, Inc. Amended and Restated 2009 Omnibus Equity Plan (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2012 (File No. 001-11442)).*</u>
10.1.2	<u>Form of Nonqualified Stock Option Agreement (2010 grants) under the Chart Industries, Inc. 2009 Omnibus Equity Plan (incorporated by reference to Exhibit 10.4.1 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2009 (File No. 001-11442)).*</u>

- 10.1.3 [Forms of Stock Award Agreement and Deferral Election Form \(for eligible directors\) under the Chart Industries, Inc. 2009 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.4.3 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2009 \(File No. 001-11442\)\).*](#)
- 10.1.4 [Form of Nonqualified Stock Option Agreement \(2011 grants\) under the Chart Industries, Inc. 2009 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.4 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2010 \(File No. 001-11442\)\).*](#)
- 10.1.5 [Form of Nonqualified Stock Option Agreement \(2012 grants\) under the Chart Industries, Inc. 2009 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.8 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2011 \(File No. 001-11442\)\).*](#)
- 10.1.6 [Form of Nonqualified Stock Option Agreement \(2013 grants\) under the Chart Industries, Inc. Amended and Restated 2009 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.11 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2012 \(File No. 001-11442\)\).*](#)
- 10.1.7 [Form of Nonqualified Stock Option Agreement \(2014 grants\) under the Chart Industries, Inc. Amended and Restated 2009 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.13 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2013 \(File No. 001-11442\)\).*](#)
- 10.1.8 [Form of Nonqualified Stock Option Agreement \(2015 grants\) under the Chart Industries, Inc. Amended and Restated 2009 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.16 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2014 \(File No. 001-11442\)\).*](#)
- 10.1.9 [Form of Nonqualified Stock Option Agreement \(2016 grants\) under the Chart Industries, Inc. Amended and Restated 2009 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.18 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2015 \(File No. 001-11442\)\).*](#)
- 10.1.10 [Form of Nonqualified Stock Option Agreement \(2017 grants\) under the Chart Industries, Inc. Amended and Restated 2009 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.21 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2016 \(File No. 001-11442\)\).*](#)
- 10.2 [Chart Industries, Inc. 2017 Omnibus Equity Plan \(incorporated by reference to Appendix B to the Registrant's definitive proxy statement filed with the SEC on April 11, 2017 \(File No. 001-11442\)\).*](#)
- 10.2.1 [Form of Nonqualified Stock Option Agreement \(2018 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.25 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2017 \(File No. 001-11442\)\).*](#)
- 10.2.2 [Form of Performance Unit Agreement \(2018 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.26 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2017 \(File No. 001-11442\)\).*](#)
- 10.2.3 [Form of Restricted Share Unit Agreement \(2018 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan \(incorporated by reference to Exhibit 10.3.27 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2017 \(File No. 001-11442\)\).*](#)
- 10.2.4 [Form of Stock Award Agreement and Deferral Election Form \(for eligible directors\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.3.4 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2018 \(File No. 001-11442\)\).*](#)
- 10.2.5 [Form of Nonqualified Stock Option Agreement \(2019 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.3.5 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2018 \(File No. 001-11442\)\).*](#)
- 10.2.6 [Form of Performance Unit Agreement \(2019 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.3.6 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2018 \(File No. 001-11442\)\).*](#)
- 10.2.7 [Form of Restricted Share Unit Agreement \(2019 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.3.7 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2018 \(File No. 001-11442\)\).*](#)
- 10.2.8 [Form of Restricted Share Unit Agreement \(2018 Evanko Grant\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.3.8 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2018 \(File No. 001-11442\)\).*](#)
- 10.2.9 [Form of Nonqualified Stock Option Agreement \(2020 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.2.9 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2019 \(File No. 001-11442\)\).*](#)
- 10.2.10 [Form of Performance Unit Agreement \(2020 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.2.10 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2019 \(File No. 001-11442\)\).*](#)

- 10.2.11 [Form of Restricted Share Unit Agreement \(2020 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.2.11 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2019 \(File No. 001-11442\)\).*](#)
- 10.2.12 [Form of Nonqualified Stock Option Agreement \(2021 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.2.13 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2020 \(File No. 001-11442\)\).*](#)
- 10.2.13 [Form of Performance Unit Agreement \(2021 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.2.14 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2020 \(File No. 001-11442\)\).*](#)
- 10.2.14 [Form of Restricted Share Unit Agreement \(2021 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan. \(incorporated by reference to Exhibit 10.2.15 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2020 \(File No. 001-11442\)\).*](#)
- 10.2.15 [Form of Nonqualified Stock Option Agreement \(2022 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan.* \(x\)](#)
- 10.2.16 [Form of Performance Unit Agreement \(2022 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan.* \(x\)](#)
- 10.2.17 [Form of Restricted Share Unit Agreement \(2022 grants\) under the Chart Industries, Inc. 2017 Omnibus Equity Plan.* \(x\)](#)
- 10.3 [Amended and Restated Chart Industries, Inc. Voluntary Deferred Income Plan \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on June 28, 2010 \(File No. 001-11442\)\).*](#)
- 10.3.1 [Amendment No. 1 to the Amended and Restated Chart Industries, Inc. Voluntary Deferred Income Plan \(incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2016 \(File No. 001-11442\)\).*](#)
- 10.3.2 [Amendment No. 2 to the Amended and Restated Chart Industries, Inc. Voluntary Deferred Income Plan \(incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K, filed with the SEC on July 14, 2016 \(File No. 001-11442\)\).*](#)
- 10.4 [Chart Industries, Inc. Cash Incentive Plan \(incorporated by reference to Appendix A to the Registrant's definitive proxy statement filed with the SEC on April 8, 2014 \(File No. 001-11442\)\).*](#)
- 10.5 [Chart Industries, Inc. Cash Incentive Plan \(incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed, with the SEC on March 29, 2019 \(File No. 001-11442\)\).*](#)
- 10.6 [Amended and Restated Employment Agreement, dated effective June 12, 2018, by and between Chart Industries, Inc. and Jillian C. Evanko \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K/A filed with the SEC on July 10, 2018 \(File No. 001-11442\)\).*](#)
- 10.7 [Employment Agreement, dated October 26, 2017, by and between Chart Industries, Inc. and Gerald F. Vinci \(incorporated by reference to Exhibit 10.14 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2017 \(File No. 001-11442\)\).*](#)
- 10.8 [Amended and Restated Severance Agreement, dated effective October 1, 2021, by and between Chart Industries, Inc. and Joe Brinkman.* \(x\)](#)
- 10.9 [Employment Agreement, dated March 26, 2019, by and between Chart Industries, Inc. and Herbert G. Hotchkiss \(incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 \(File No. 001-11442\)\).*](#)
- 10.10 [Agreement of Retirement and Release Agreement, effective October 1, 2021, by and between Chart Industries, Inc. and Scott Merkle.* \(x\)](#)
- 10.11 [Form of Indemnification Agreement \(incorporated by reference to Exhibit 10.20 to the Registrant's Registration Statement on Form S-1 \(File No. 333-133254\)\).](#)
- 10.12 [Base Call Option Transaction Confirmation, dated October 31, 2017, by and between Chart Industries, Inc. and Morgan Stanley & Co. International plc \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SSEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.1 [Base Warrants Confirmation, dated October 31, 2017, by and between Chart Industries, Inc. and Morgan Stanley & Co. International plc \(incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)

- 10.13.2 [Base Call Option Transaction Confirmation, dated October 31, 2017, by and between Chart Industries, Inc. and JPMorgan Chase Bank, National Association, London Branch \(incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.3 [Base Warrants Confirmation, dated October 31, 2017, by and between Chart Industries, Inc. and JPMorgan Chase Bank, National Association, London Branch \(incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.4 [Base Call Option Transaction Confirmation, dated October 31, 2017, by and between Chart Industries, Inc. and Bank of America, N.A. \(incorporated by reference to Exhibit 10.5 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.5 [Base Warrants Confirmation, dated October 31, 2017, by and between Chart Industries, Inc. and Bank of America, N.A. \(incorporated by reference to Exhibit 10.6 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.6 [Additional Call Option Transaction Confirmation, dated November 1, 2017, by and between Chart Industries, Inc. and Morgan Stanley & Co. International plc \(incorporated by reference to Exhibit 10.7 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.7 [Additional Warrants Confirmation, dated November 1, 2017, by and between Chart Industries, Inc. and Morgan Stanley & Co. International plc \(incorporated by reference to Exhibit 10.8 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.8 [Additional Call Option Transaction Confirmation, dated November 1, 2017, by and between Chart Industries, Inc. and JPMorgan Chase Bank, National Association, London Branch \(incorporated by reference to Exhibit 10.9 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.9 [Additional Warrants Confirmation, dated November 1, 2017, by and between Chart Industries, Inc. and JPMorgan Chase Bank, National Association, London Branch \(incorporated by reference to Exhibit 10.10 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.10 [Additional Call Option Transaction Confirmation, dated November 1, 2017, by and between Chart Industries, Inc. and Bank of America, N.A. \(incorporated by reference to Exhibit 10.11 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.13.11 [Additional Warrants Confirmation, dated November 1, 2017, by and between Chart Industries, Inc. and Bank of America, N.A. \(incorporated by reference to Exhibit 10.12 to the Registrant's Current Report on Form 8-K filed with the SEC on November 6, 2017 \(File No. 001-11442\)\).](#)
- 10.14 [Fifth Amended and Restated Credit Agreement, dated as of October 18, 2021, by and among Chart Industries, Inc., Chart Industries Luxembourg S.à r.l., Chart Asia Investment Company Limited, the other foreign borrowers from time to time party thereto, the lenders from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Bank of America, N.A., Fifth Third Bank, National Association, HSBC Bank USA, National Association, PNC Bank, National Association and Wells Fargo Bank, National Association, as Co-Syndication Agents, and BMO Harris Bank, N.A., Capital One, N.A., Citizens Bank, N.A., MUFG Union Bank, N.A. and Regions Bank, as Co-Documentation Agents \(incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q, filed with the SEC on October 21, 2021 \(File No. 001-11442\)\).](#)
- 10.15 [Co-Investment Agreement, dated as of September 7, 2021, by and among Chart Industries, Inc., ISO HTEC HoldCo Limited and ISO Blueprint Acquisitions Inc. \(incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q, filed with the SEC on October 21, 2021 \(File No. 001-11442\)\).](#)
- 21.1 [List of Subsidiaries.](#) (x)
- 23.1 [Consent of Independent Registered Public Accounting Firm - Deloitte & Touche.](#) (x)
- 31.1 [Rule 13a-14\(a\) Certification of the Company's Chief Executive Officer and President.](#) (x)
- 31.2 [Rule 13a-14\(a\) Certification of the Company's Vice President and Chief Financial Officer.](#) (x)
- 32.1 [Section 1350 Certification of the Company's Chief Executive Officer and President.](#) (xx)
- 32.2 [Section 1350 Certification of the Company's Vice President and Chief Financial Officer.](#) (xx)
- 101.INS XBRL Instance Document (x)
- 101.SCH XBRL Taxonomy Extension Schema Document (x)
- 101.CAL XBRL Taxonomy Extension Calculation Linkbase Document (x)
- 101.DEF XBRL Taxonomy Extension Definition Linkbase Document (x)

101.LAB XBRL Taxonomy Extension Label Linkbase Document (x)
101.PRE XBRL Taxonomy Extension Presentation Linkbase Document (x)

(x) Filed herewith.

(xx) Furnished herewith.

* Management contract or compensatory plan or arrangement.

** Certain exhibits and schedules have been omitted and Chart agrees to furnish supplementally to the Securities and Exchange Commission a copy of any omitted exhibits and schedules upon request.

AMENDED AND RESTATED SEVERANCE AGREEMENT

This Amended and Restated Severance Agreement (this “Agreement”) amends and restates that certain Severance Agreement, dated October 16, 2012 (the “Severance Agreement”), by and between Chart Inc. and Joe Brinkman (“Employee”).

Chart Inc. entered into the Severance Agreement to provide Employee with severance benefits upon Employee’s termination of employment under certain conditions.

On October 1, 2021, the Board of Directors of Chart Industries, Inc. (the “Company”), parent company of Chart Inc., appointed Employee as the Company’s Vice President and Chief Financial Officer. The Company desires to amend and restate Employee’s Severance Agreement to provide severance benefits upon a Change in Control of the Company, and Employee desires to enter into this Agreement.

In consideration of the premises and mutual covenants herein and for other good and valuable consideration, the parties agree as follows:

1. Restricted Stock Agreement. Employee agrees and acknowledges that the Company’s obligations pursuant to this Agreement are conditioned upon (i) Employee’s continued compliance with the covenants contained in Sections 4 and 5 of that certain Restricted Stock Agreement, dated October 16, 2012, by and between Employee and the Company (the “Restricted Stock Agreement”) and (ii) that the benefits Employee receives pursuant to this Agreement serve also as consideration for the covenants of Employee contained in Sections 4 and 5 of the Restricted Stock Agreement.

2. Termination. Employee's employment with the Company may be terminated by either party at any time and for any reason. The provisions of this Section 2 govern Employee's rights upon Termination of Employment with the Company and its affiliates. “Termination of Employment” as used in this Agreement means the separation from service, within the meaning of Section 409A of the Internal Revenue Code of 1986, as amended from time to time (“Code”, any reference in this Agreement to a Section of the Code shall include all lawful regulations and pronouncements promulgated thereunder, as well as any successor Sections of the Code having the same or similar purpose), of Employee with the Company and all of its affiliates, for any reason, including without limitation, quit, discharge, or retirement, or a leave of absence (including military leave, sick leave, or other bona fide leave of absence such as temporary employment by the government if the period of such leave exceeds the greater of six months, or the period for which Employee’s right to reemployment is provided either by statute or by contract) or permanent decrease in service to a level that is no more than twenty percent (20%) of its prior level. For this purpose, whether a Termination of Employment has occurred is determined based on whether it is reasonably anticipated that no further services will be performed by Employee after a certain date or that the level of bona fide services Employee will perform after such date (whether as an employee or as an independent contractor) would permanently decrease to no more than twenty percent (20%) of the average level of bona fide services performed (whether as an employee or an independent contractor) over the immediately preceding 36-month period (or the full period of services if Employee has been providing services less than 36 months). The terms “Terminate” or “Terminated,” when used in reference to Employee’s employment or the Employment Period, shall refer to a Termination of Employment as set forth in this paragraph. “Date of Termination” refers to the effective date of Employee’s Termination of Employment.

a. Termination by the Company Without Cause or Resignation by Employee for Good Reason.

(i) Events. Employee's employment hereunder may be terminated by the Company without Cause at any time, including during the Protected Period (as defined below), or by Employee's resignation for Good Reason during the Protected Period.

(ii) Cause. For purposes of this Agreement, "Cause" shall mean Employee's (A) willful failure to perform duties consistent with Employee's position with the Company which failure, if curable, is not cured promptly, or in any event within ten (10) days, following the first written notice of such failure from the Company, (B) commission of, or plea of guilty or no contest to a (x) felony or (y) crime involving moral turpitude, (C) willful malfeasance or misconduct which is demonstrably injurious to the Company or its subsidiaries or affiliates, (D) material breach of the material terms of Sections 4 and 5 of the Restricted Stock Agreement, (E) commission of any act of gross negligence, corporate waste, disloyalty or unfaithfulness to the Company or its subsidiaries which adversely affects the business of the Company or its subsidiaries or affiliates, or (F) any other act or course of conduct which will demonstrably have a material adverse effect on the Company, a subsidiary or affiliate's business.

(iii) Good Reason. For purposes of this Agreement, "Good Reason" shall mean, without Employee's consent: (i) a material diminution in Employee's base salary (excluding any general salary reduction similarly affecting substantially all other senior executives of the Company as a result of a material adverse change in the Company's prospects or business); (ii) a material diminution in Employee's authority, duties, or responsibilities; (iii) a material change in the geographic location at which Employee must perform services; or (iv) any other action or inaction that constitutes a material breach by the Company of this Agreement; provided, however, that "Good Reason" shall not be deemed to exist unless: (A) the Employee has provided notice to the Company of the existence of one or more of the conditions listed in (i) through (iv) within 90 days after the initial occurrence of such condition or conditions; and (B) such condition or conditions have not been cured by the Company within 30 days after receipt of such notice.

(iv) Protected Period. For purposes of this Agreement, "Protected Period" shall mean the period of time commencing on the date of a Change in Control and ending two years after such date.

(v) Change in Control. For purposes of this Agreement, "Change in Control" shall mean, with respect to the Employee, the happening of any of the following events (but only if with respect to the Employee, such event would constitute a change in the ownership or effective control of the corporation, or in the ownership of a substantial portion of the assets of the corporation, as defined under Section 409A of the Code):

(A) a change in the ownership of the Company (or any affiliate which either employs the Employee or is a direct or indirect parent of such employer) by which any one person, or more than one person acting as a group, acquires ownership of stock of the Company (or such an affiliate) that, together with stock held by such person or group, constitutes more than fifty percent (50%) of the total fair market value or total voting power of the stock of the Company (or such an affiliate). However, if any one person, or more than one person acting as a group, is considered to own more than 50% of the total fair market value or total voting power of the stock of the Company (or such an affiliate), the acquisition of additional stock by the same person or persons is not considered to cause a Change in Control. (An increase in the percentage of stock owned by any one person, or persons acting as a group, as a result of a transaction in which the Company (or such an affiliate) acquires its stock in exchange for property will be treated as an acquisition of stock

for purposes of this definition. This parenthetical phrase applies only when there is a transfer of stock of the Company (or issuance of stock of the Company) (or such an affiliate) and stock in the Company (or such an affiliate) remains outstanding after the transaction.)

(B) a change in effective control of the Company (or any affiliate which either employs the Employee or is a direct or indirect parent of such employer) by which:

(1) any one person, or more than one person acting as a group, acquires (or has acquired during the 12-month period ending on the date of the most recent acquisition by such person or persons) ownership of stock of the Company (or such an affiliate) possessing thirty percent (30%) or more of the total voting power of the stock of the Company (or such an affiliate); or

(2) a majority of members of the Board of Directors is replaced during any 12-month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board of Directors before the date of the appointment or election.

(C) a change in the ownership of a substantial portion of the assets of the Company (or any affiliate which either employs the Employee or is a direct or indirect parent of such employer) by which any one person, or more than one person acting as a group, acquires (or has acquired during the 12-month period ending on the date of the most recent acquisition by such person or persons) assets from the Company (or such an affiliate) that have a total gross fair market value equal to or more than forty percent (40%) of the total gross fair market value of all of the assets of the Company (or such an affiliate) immediately prior to such acquisition or acquisitions. For this purpose, gross fair market value means the value of the assets of the corporation, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company. If a person, including an entity, owns stock in both corporations that enter into a merger, consolidation, purchase or acquisition of stock, or similar transaction, such shareholder is considered to be acting as a group with other shareholders only with respect to the ownership in that corporation before the transaction giving rise to the change and not with respect to the ownership interest in the other corporation.

(vi) Compensation if Terminated by the Company without Cause Outside of Protected Period. If, at any time other than during the Protected Period, the Employee's employment is terminated by the Company without Cause (other than by reason of death or disability), Employee shall be entitled to receive, subject to Employee's (x) continued compliance with the provisions of the Restricted Stock Agreement and (y) execution and delivery of a general release of claims against the Company and its affiliates in a form reasonably acceptable to the Company (the "Release"), which Release becomes effective and irrevocable no later than sixty (60) days after the date on which Employee's Termination of Employment occurs (the "Release Period"), Employee shall be entitled to receive:

(A) a payment in one lump sum in an amount equal to 12 months of Employee's then current base salary; and

(B) a payment in one lump sum in an amount equal to the normal employee costs associated with 12 months of continuation coverage pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA") for Employee

and his eligible dependents who were covered under the Company's health plans as of the date of Employee's Termination of Employment. Any payment made under this section shall be paid no later than five (5) days after the end of the Release Period; provided, however, that if the Release Period begins in one calendar year and ends in the following calendar year, any payment, or portion thereof, considered to be non-qualified deferred compensation under Section 409A of the Code shall be made during the second calendar year.

(vii) Compensation if Terminated during Protected Period. If, during the Protected Period, either the Employee's employment is terminated by the Company without Cause (other than by reason of death or disability) or if Employee resigns for Good Reason, Employee shall be entitled to receive:

- (A) the following accrued rights (the "Accrued Rights"):
 - (1) the base salary through the Date of Termination;
 - (2) any annual bonus earned, but unpaid, as of the Date of Termination for the immediately preceding fiscal year (except to the extent payment is otherwise deferred pursuant to any applicable deferred compensation arrangement with the Company);
 - (3) reimbursement, within 60 days following submission by Employee to the Company of appropriate supporting documentation, for any unreimbursed business expenses properly incurred by Employee in accordance with Company policy prior to the date of Employee's termination of employment; provided claims for such reimbursement (accompanied by appropriate supporting documentation) are submitted to the Company within 90 days following the date of Employee's termination of employment; and
 - (4) such employee benefits, if any, as to which Employee may be entitled under the employee benefit plans of the Company, including payment for any accrued but unused vacation within 30 days following the date of Employee's Date of Termination.
 - (B) subject to Employee's execution and delivery of the Release, payment in one lump sum of:
 - (1) 100% of the greater of the current base salary or Employee's highest base salary paid during employment by the Company or its affiliates; plus
-

- (2) the greater of (i) 100% of Employee's target annual bonus for the fiscal year in which Employee's termination of employment occurs or (ii) 100% of Employee's target annual bonus for the fiscal year immediately preceding the fiscal year in which the Change in Control occurs;

(C) a lump sum payment equal to the premium subsidy the Company would have otherwise paid on Employee's behalf under the Company's health insurance plan had he remained employed for the twelve (12) months period following the Date of Termination.

Any payment made under this section shall be paid no later than five (5) days after the end of the Release Period; provided, however, that if the Release Period begins in one calendar year and ends in the following calendar year, any payment, or portion thereof, considered to be non-qualified deferred compensation under Section 409A of the Code shall be made during the second calendar year.

Following Employee's termination of employment by the Company without Cause (other than by reason of Employee's death or disability) or by Employee's resignation for Good Reason, Employee shall have no further rights to any compensation or any other benefits under this Agreement.

3. Miscellaneous.

a. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware, without regard to conflicts of laws principles thereof.

b. Dispute Resolution. Except as otherwise provided in Section 3 of this Agreement, any controversy, dispute, or claim arising out of, in connection with, or in relation to, the interpretation, performance or breach of this Agreement, including, without limitation, the validity, scope, and enforceability of this section, may at the election of any party, be solely and finally settled by arbitration conducted in Cleveland, Ohio, by and in accordance with the then existing rules for commercial arbitration of the American Arbitration Association, or any successor organization and with the Expedited Procedures thereof (collectively, the "Rules"). Each of the parties hereto agrees that such arbitration shall be conducted by a single arbitrator selected in accordance with the Rules; provided that such arbitrator shall be experienced in deciding cases concerning the matter which is the subject of the dispute. Any of the parties may demand arbitration by written notice to the other and to the Arbitrator set forth in this Section 3(b) ("Demand for Arbitration"). Each of the parties agrees that if possible, the award shall be made in writing no more than 30 days following the end of the proceeding. Any award rendered by the arbitrator(s) shall be final and binding and judgment may be entered on it in any court of competent jurisdiction. Each of the parties hereto agrees to treat as confidential the results of any arbitration (including, without limitation, any findings of fact and/or law made by the arbitrator) and not to disclose such results to any unauthorized person. The parties intend that this agreement to arbitrate be valid, enforceable and irrevocable. In the event of any arbitration with regard to this Agreement, each party shall pay its own legal fees and expenses, provided, however, that the Company agrees to pay the cost of the Arbitrator's fees.

c. Entire Agreement/Amendments. Except as set forth in the Restricted Stock Agreement or any stock option, restricted stock, performance unit, or indemnification agreement, this Agreement contains the entire understanding of the parties with respect to the employment of Employee by the Company or its affiliates. There are no restrictions, agreements, promises, warranties, covenants or undertakings between the parties with respect to the subject matter herein other than those expressly set forth herein. This Agreement may not be altered, modified, or amended except by written instrument signed by the parties hereto.

d. No Waiver. The failure of a party to insist upon strict adherence to any term of this Agreement on any occasion shall not be considered a waiver of such party's rights or deprive such party of the right thereafter to insist upon strict adherence to that term or any other term of this Agreement.

e. Severability. In the event that any one or more of the provisions of this Agreement shall be or become invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions of this Agreement shall not be affected thereby.

f. Assignment. This Agreement, and all of Employee's rights and duties hereunder, shall not be assignable or delegable by Employee. Any purported assignment or delegation by Employee in violation of the foregoing shall be null and void ab initio and of no force and effect.

Vertical line on the left side of the page.

This Agreement may be assigned by the Company to a person or entity which is an affiliate or a

successor in interest to substantially all of the business operations of the Company.

g. Set-Off; No Mitigation. The Company's obligation to pay Employee the amounts provided hereunder shall be subject to set-off, counterclaim or recoupment of amounts owed by Employee to the Company or its affiliates.

h. Successors; Binding Agreement. This Agreement shall inure to the benefit of and be binding upon personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

i. Notice. For the purpose of this Agreement, notices and all other communications provided for in the Agreement shall be in writing and shall be deemed to have been duly given when delivered by hand or overnight courier or three days after it has been mailed by United States registered mail, return receipt requested, postage prepaid, addressed to the respective addresses set forth below in this Agreement, or to such other address as either party may have furnished to the other in writing in accordance herewith, except that notice of change of address shall be effective only upon receipt.

If to the Company:

Chart Industries, Inc.
3055 Torrington Drive
Ball Ground, GA 30107
Attention: General Counsel

If to Employee:

To the most recent address of Employee set forth in the personnel records of the Company.

j. Prior Agreements. This Agreement supercedes all prior agreements and understandings (including verbal agreements) between Employee and the Company and/or its affiliates regarding the terms and conditions of Employee's employment with the Company and/or its affiliates, except that this Agreement does not supercede the Restricted Stock Agreement or any stock option agreement, restricted stock agreement, performance unit agreement, or indemnification agreement.

k. Cooperation. Employee shall provide Employee's reasonable cooperation in connection with any action or proceeding (or any appeal from any action or proceeding) which relates to events occurring during Employee's employment hereunder. This provision shall survive any termination of this Agreement.

l. Withholding Taxes. The Company may withhold from any amounts payable under this Agreement such Federal, state and local taxes as may be required to be withheld pursuant to any applicable law or regulation.

m. Counterparts. This Agreement may be signed in counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument.

n. Compliance with Section 409A. It is intended that the payments and benefits provided under this Agreement shall either be exempt from application of, or comply with, the requirements of Section 409A of the Code. This Agreement shall be construed, administered, and governed in a manner that effects such intent, and the Company shall not take any action that would be inconsistent with such intent. Notwithstanding anything herein to the contrary, (i) if at the time of

Employee's Termination of Employment with the Company Employee is a "specified employee" as defined in Section 409A of the Code, and the deferral of the commencement of any payments or benefits otherwise payable hereunder as a result of such Termination of Employment is necessary in order to prevent the imposition of any accelerated or additional tax under Section 409A of the Code, then the Company will defer the commencement of the payment of any such payments or benefits hereunder (without any reduction in such payments or benefits ultimately paid or provided to Employee) until the date that is six months following Employee's Termination of Employment with the Company (or the earliest date as is permitted under Section 409A of the Code); and (ii) if any other payments of money or other benefits due to Employee hereunder could cause the application of an accelerated or additional tax under Section 409A of the Code, such payments or other benefits shall be deferred if deferral will make such 'payment or other benefits compliant under Section 409A of the Code, or otherwise such payment or other benefits shall be restructured, to the extent possible, in a manner that does not cause such an accelerated or additional tax or result in an additional cost to the Company. Notwithstanding anything herein to the contrary, the tax treatment of the benefits provided under this Agreement is not warranted or guaranteed. Neither the Company, its affiliates nor their respective boards of directors shall be held liable for any taxes, interest, penalties, or other similar monetary amounts owed by Employee or other taxpayers as a result of the Agreement.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of October 1, 2021.

NOTICE TO EMPLOYEE: READ THIS AGREEMENT CAREFULLY BEFORE SIGNING. AMONG OTHER THINGS, IT REFERS TO AN AGREEMENT THAT IMPOSES NONCOMPETITION AND OTHER RESTRICTIVE COVENANTS ON YOU.

Chart Industries, Inc.
("Company")

/s/ Gerry Vinci
By: Gerry Vinci
Its: CHRO

Joe Brinkman
("Employee")

/s/ Joe Brinkman

AGREEMENT OF RETIREMENT AND RELEASE

THIS AGREEMENT OF RETIREMENT AND RELEASE (this "**Agreement**"), is made and entered into by and between Chart Industries, Inc. (the "**Company**") and Scott W. Merkle ("**Executive**") with an Effective Date as defined in Section 4.9.

WITNESSETH:

WHEREAS, since March 16, 2021, Executive has been employed by the Company as its Vice President, Chief Financial Officer, and Treasurer; and

WHEREAS, Executive has notified the Company of his desire to retire effective October 1, 2022 (the "**Retirement**"); and

WHEREAS, the Company accepts Executive's Retirement, but in advance of the Retirement shall retain him in a different role with the Company; and

WHEREAS, the Company and Executive wish to resolve all matters and disputes between them arising from or relating to Executive's employment by the Company and Executive's cessation of employment with the Company.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, Executive and the Company hereby agree as follows:

ARTICLE I -- CONSIDERATION

Section 1.1. **Retirement**. Executive, through his signature below, voluntarily retires from his employment with the Company effective October 1, 2022 ("**Date of Retirement**"). The Company, through its execution below, hereby consents to and accepts Executive's Retirement. Executive's employment records with the Company will reflect the voluntary nature of the cessation of his employment, and the Company and Executive each expressly acknowledge that he has not been "discharged" or "terminated" by the Company, constructively or otherwise.

Section 1.2. **Retention Period**. During the period between October 1, 2021 and the Date of Retirement (the "**Retention Period**"), Executive shall continue to be employed by the Company on the terms and conditions described below:

1. As of October 1, 2021, Executive has voluntarily resigned from the position of Vice President, Chief Financial Officer, and Treasurer and will assist with the transition of his duties as well as supporting ongoing back office and acquisition integration, or such other role as the Company may define;
 2. During the Retention Period, Executive will not be required to perform his duties at the Company's offices, and may instead work remotely on a full-time basis;
 3. During the Retention Period, Executive shall continue to be compensated at his regular base pay and employee benefits at such level as his base pay and
-

benefits existed immediately prior to October 1, 2021, but excluding any future bonus pay and equity, except as set forth herein; and

4. During the Retention Period, the Company retains the right to designate any date as Executive's Date of Retirement, but only for Cause, and with or without notice, but in no event will the Date of Retirement be later than October 1, 2022. For purposes of this Section 1.2.4, "**Cause**" means the occurrence of any of the following events during the Retention Period: (a) Executive's commission of a felony or a crime of moral turpitude; (b) Executive's fraud, misappropriation, embezzlement, theft or conversion of any business opportunity, funds or property of Employer or its Affiliates (whether attempted or actual); or (c) Executive's breach of this Agreement or failure to adhere to a written rule or policy of Employer in effect as of October 1, 2021; provided, however, that if such breach or failure described in clause (c) is corrected or remedied by Executive within thirty (30) days after written notice is given by Employer of the breach or failure, then such breach or failure shall not be deemed to be "Cause" hereunder.

Section 1.3. Severance Pay. Provided that Executive signs, on or after the Date of Retirement, the General Release of Claims attached hereto and incorporated herein as Exhibit A (the "**General Release**"), and such General Release is not revoked during the time period specified therein, then upon the Effective Date of the General Release, Executive will be entitled to a lump sum payment in a gross amount equal to six (6) months of his base pay at such level as his base pay existed immediately prior to October 1, 2021, less any applicable payroll taxes and withholdings.

Section 1.4. Target Annual Bonus. The Company shall make a one-time lump sum payment to Executive in an amount representing 100% of Executive's Target Annual Bonus for Fiscal Year 2021, less applicable payroll taxes and withholdings, payable at such time as bonus payments for Fiscal Year 2021 are paid to the Company's senior management group. Executive shall be entitled to a lump-sum payment, less applicable payroll taxes and withholdings, equal to Executive's Short Term Incentive Bonus for 2022 based on the number of days during such year in which Executive was employed by the Company (the "Pro-Rated Bonus"). The Company's payment of the Pro-Rated Bonus pursuant to this Section 1.4, if any, will be based upon the Company's level of achievement of the applicable performance targets as reasonably determined by the Company and shall be paid to Executive at the time the Short Term Incentive Annual Bonus for 2022 would otherwise have been paid for such year.

Section 1.5. Equity Awards. Any unvested portion of stock options and restricted stock units granted to Executive under the Company's 2017 Omnibus Equity Plan scheduled to vest in January 2022 will vest in January 2022 pursuant to the terms of their award agreements. Any unvested portion of performance units granted to Executive under the Company's 2017 Omnibus Equity Plan scheduled to vest in February 2022 will vest in February 2022 pursuant to the terms of their award agreements. Executive acknowledges that following January 2022 and February 2022, no unvested portion of any award of stock options, restricted stock units, or performance units granted to Executive will vest, and accordingly, Executive will forfeit the entirety of such awards, provided, however, that following the Date of Retirement, Executive's remaining outstanding equity awards will vest according to the retirement provisions of their respective award agreements that Executive is deemed eligible to vest in.

Section 1.6. COBRA Coverage and Health Insurance Premium Payment. Following the Date of Retirement, Executive shall be entitled to continuation of coverage under the Company's health/medical insurance plan at his own expense pursuant to any rights he may have under the federal Consolidated Omnibus Budget Reconciliation Act, as amended ("COBRA"), part VI of Subtitle B of Title I of the Employee Retirement Income Security Act of 1974 ("ERISA"), as amended; Internal Revenue Code §4980(B)(f). Such continuation shall be afforded up to the maximum period provided by law so long as Executive submits payments for elected coverage and otherwise complies with conditions of continuation on a timely basis. Should Executive elect such continued coverage following the Date of Retirement, then as soon as practicable but in no event later than 30 days following the Effective Date of the General Release, the Company shall make a one-time lump sum payment to Executive equal to six (6) months of the Company's share of the monthly premium payable on Executive's behalf under the Company's health insurance plan, less applicable payroll taxes and withholdings.

Section 1.7. Adequacy of Consideration. Executive hereby agrees and acknowledges that the payments and benefits described in Article I of this Agreement exceed any entitlements, severance payments or other benefits that he may have by reason of his separation from employment with the Company, and that such payments and benefits constitute adequate consideration for all of Executive's covenants and obligations set forth herein, including, but not limited to, the Release of Claims set forth in Article II of this Agreement and the Other Obligations of Executive set forth in Article III of this Agreement.

Section 1.8. Receipt of Certain Consideration. In order to receive the payments and benefits described in §§1.3 and 1.6 of this Agreement, Executive must execute, on or after (*but not before*) the Date of Retirement, the General Release, and his execution of the General Release must not be revoked within the period provided by law for its revocation. Thereafter, upon the Effective Date of the General Release, Executive shall be entitled to the payments and benefits described in §§1.3 and 1.6 of this Agreement.

ARTICLE II -- RELEASE OF CLAIMS

Section 2.1. Executive's Release. In consideration of the promises and agreements set forth herein, Executive does hereby for himself and for his heirs, executors, successors and assigns, release and forever discharge the Company, its subsidiaries, divisions, and affiliated businesses, direct or indirect, together with its and their respective officers, directors, shareholders, members, management, representatives, agents, employees, successors, assigns, and attorneys, both known and unknown, in both their personal and agency capacities (collectively, the "*Company Entities*") of and from any and all claims, demands, damages, actions or causes of action, suits, claims, charges, complaints, contracts, whether oral or written, express or implied and promises, at law or in equity, of whatsoever kind or nature, including but not limited to any alleged violation of any state or federal anti-discrimination statutes or regulations, including but not limited to Title VII of The Civil Rights Act of 1964 as amended, ERISA, the Americans With Disabilities Act, the Age Discrimination in Employment Act, the Older Workers Benefit Protection Act, the Family and Medical Leave Act ("FMLA"), breach of any express or implied contract or promise, wrongful discharge, violation of public policy, or tort, all demands for attorney's fees, back pay, holiday pay, vacation pay, bonus, group insurance, any claims for reinstatement, employee benefits and claims for money, out of pocket expenses, any claims for emotional distress, defamation and humiliation, that Executive might now have or may subsequently have against the Company Entities or any of them, whether known or unknown,

suspected or unsuspected, by reason of any matter or thing, arising out of or in any way connected with, directly or indirectly, any acts or omissions of any of the Company Entities arising out of Executive's employment and change in that employment which have occurred prior to the Effective Date of this Agreement, **except** those matters specifically set forth herein, **except** for any health, welfare, pension or retirement benefits which may have vested on Executive's behalf, if any, **except** for any rights regarding vested equity held by Executive, and **except** for any rights Executive has under any applicable policies of Directors and Officers liability insurance. Notwithstanding the foregoing, Executive may file a charge with, testify, assist, or participate in an investigation, hearing or proceeding conducted by the Equal Employment Opportunity Commission or state fair employment practices agency as to the employment laws enforced by such agencies; provided, however, that Executive understands and agrees that he is waiving and releasing his rights to monetary damages under such laws by reason of his agreement to the above- stated general release language.

Section 2.2. Age Discrimination in Employment Act/Older Workers Benefit Protection Act Release. Executive waives and releases all rights, remedies, claims and causes of action, known and unknown, he has or may have against the Company Entities for any matter related to his employment and change in that employment under the Age Discrimination in Employment Act of 1967, 29 U.S.C. § 621, *et seq.*, as amended by the Older Worker Benefit Protection Act, 29 U.S.C. § 623, by reason of any matter or thing arising out of, or in any way connected with, directly or indirectly, any acts or omissions which have occurred prior to and including the Effective Date of this Agreement. In other words, by signing this Agreement, Executive will have none of the legal rights against the aforementioned that Executive would otherwise have under these laws.

Section 2.3. Consideration Period. The Company hereby notifies Executive of his right to consult with his chosen legal counsel before signing this Agreement. The Company shall afford, and Executive acknowledges receiving, not less than twenty-one (21) calendar days in which to consider this Agreement to ensure that Executive's execution of this Agreement is knowing and voluntary. In signing below, Executive expressly acknowledges that he has been afforded the opportunity to take at least twenty-one (21) days to consider this Agreement and that his execution of same is with full knowledge of the consequences thereof and is of his own free act and will.

Notwithstanding the fact that the Company has allowed Executive twenty-one (21) days to consider this Agreement, Executive may elect to execute this Agreement prior to the end of such 21-day period. If Executive elects to execute this Agreement prior to the end of such 21- day period, then by his signature below, Executive represents that his decision to accept this shortening of the time was knowing and voluntary and was not induced by fraud, misrepresentation, or any threat to withdraw or alter the benefits provided by the Company herein, or by the Company providing different terms to any similarly-situated employee executing this Agreement prior to end of such 21-day consideration period. The parties agree changes, whether material or immaterial, to this Agreement shall not restart the running of the twenty-one (21) day time period.

Section 2.4. Revocation Period. Both the Company and Executive agree and recognize that, for a period of seven (7) calendar days following Executive's execution of this Agreement, Executive may revoke this Agreement by providing written notice revoking the same, within this seven (7) day period, delivered by hand or by certified mail, addressed to Gerry Vinci,

Chart Industries, Inc., One Overton, 3625 Cumberland Blvd., SE, Atlanta, GA 30339 delivered or postmarked within such seven (7) day period. In the event Executive so revokes this Agreement, each party will receive only those entitlements and/or benefits that he/it would have received regardless of this Agreement.

Section 2.5. Acknowledgments. Executive acknowledges that Executive has carefully read and fully understands all of the provisions of this Agreement, that Executive has not relied on any representations of the Company or any of its representatives, directors, officers, employees and/or agents to induce Executive to enter into this Agreement, other than as specifically set forth herein and that Executive is fully competent to enter into this Agreement and has not been pressured, coerced or otherwise unduly influenced to enter into this Agreement and that Executive has voluntarily entered into this Agreement and the same is Executive's own free act and will.

ARTICLE III -- OTHER OBLIGATIONS OF EXECUTIVE

Section 3.1. Company Property. Within 10 business days after the Date of Retirement, Executive shall return all tangible personal property belonging to the Company or its affiliates, including, but not limited to, all keys, business equipment, laptop computer, and other computer software and hardware.

Section 3.2. Non-Disparagement & Communications with Third Parties. Executive and the Company each agree not to criticize, disparage, defame, or otherwise sully the character and reputation of the other in any way, including, without limitation, through any communications with other individuals, companies, associations, or the media. Executive further agrees that during the Retention Period and for six (6) months following the Date of Retirement, he will not communicate in any way or for any purpose with past, current, or potential investors in the Company, nor with any representatives of any media organization, regarding the Company's business or the fact and terms of this Agreement.

Section 3.3. Permitted Disclosure. Notwithstanding the provisions of §3.4 of this Agreement, Executive may disclose the fact and terms of this Agreement to his immediate family, to Executive's legal counsel, and to Executive's tax consultants, all of whom shall be instructed by Executive similarly to hold the fact and terms of this Agreement in the strictest confidence, and as otherwise required by law, other than any information for which nondisclosure is reasonably necessary in order to comply with applicable federal or state securities laws. The Company will be permitted to disclose a summary of, and copy of, this Agreement in a Form 8-K and other public disclosures to be filed with the SEC.

Section 3.4. Nondisclosure. Executive agrees at all times to hold as secret and confidential (unless disclosure is required pursuant to court order, subpoena in a governmental proceeding, arbitration, or pursuant to other requirement of law) any and all knowledge, technical information, business information, developments, trade secrets, know-how and confidences of the Company or its business, including, without limitation, (a) information or business secrets relating to the customers, strategies, business, conduct or operations of the Company or any of its respective clients, customers, consultants or licensees; (b) the existence or betterment of, or possible new uses or applications for, any of the Company's products or services; (c) any of the Company's customer lists, pricing and purchasing information or policies; and (d) any methods, ways of business, etc. used in the use, sale or marketing of the Company's products or services, (collectively, "Confidential")

Information") of which he has acquired knowledge before, during, or after his employment with the Company, to the extent such matters (i) have not previously been made public or are not thereafter made public, or (ii) do not otherwise become available to Executive, in either case via a source not bound by any confidentiality obligations to the Company. The phrase "made public" as used in this Agreement shall apply to matters within the domain of the general public or the Company's industry. Executive agrees not to use, directly or indirectly, such knowledge for his own benefit or for the benefit of others and/or disclose any of such Confidential Information without the prior written consent of the Company. At the cessation of employment with the Company, the Executive agrees to promptly return to the Company any and all written Confidential Information received from the Company which relates in any way to any of the foregoing items covered in this paragraph and to destroy any transcripts or copies the Executive may have of such Information unless an alternative method of disposition is approved by the Company.

Section 3.5. Other Post-Employment Covenants. Executive acknowledges and reaffirms all of Executive's obligations and the Company's rights under any covenants of noncompetition, nonsolicitation, and nondisclosure which may exist between him and the Company, all of which covenants shall survive the termination of Executive's employment.

ARTICLE IV -- MISCELLANEOUS PROVISIONS

Section 4.1. Entire Agreement. This Agreement, together with the General Release, contains the entire agreement between the parties hereto and, with the exception of Executive's obligations and the Company's rights under any applicable post-employment covenants, and except for any stock option agreement, performance unit agreement, or restricted stock agreement, replaces and supersedes any prior agreements, contracts and/or promises, whether written or oral, with respect to the employment of Executive by the Company or its affiliates, all of which shall be of no further force and effect except to the extent provided herein. This Agreement may not be changed orally, but only in writing, signed by each of the parties hereto.

Section 4.2. Warranty/Representation. Executive and the Company each warrant and represent that, prior to and including the Effective Date of this Agreement, no claim, demand, cause of action, or obligation which is subject to this Agreement has been assigned or transferred to any other person or entity, and no other person or entity has or has had any interest in any such claims, demands, causes of action or obligations, and that each has the sole right to execute this Agreement.

Section 4.3. Invalidity. The parties to this Agreement agree that the invalidity or unenforceability of any one provision or part of this Agreement shall not render any other provision(s) or part(s) hereof invalid or unenforceable and that such other provision(s) or part(s) shall remain in full force and effect.

Section 4.4. No Assignment; Headings. This Agreement is personal in nature and shall not be assigned by Executive. All payments and benefits provided Executive herein shall be made to his estate in the event of his death prior to his receipt thereof. The headings used in this Agreement are included for convenience only and shall not be used to interpret the meaning of any provision of this Agreement.

Section 4.5. Compliance with Section 409A. Notwithstanding anything herein to the contrary, (i) if at the Date of Retirement Executive is a "specified employee" as defined in

Section 409A of the Internal Revenue Code of 1986, as amended (the “**Code**”), and the deferral of the commencement of any payments or benefits otherwise payable hereunder as a result of Executive’s termination of employment is necessary in order to prevent the imposition of any accelerated or additional tax under Section 409A of the Code, then the Company will defer the commencement of the payment of any such payments or benefits hereunder (without any reduction in such payments or benefits ultimately paid or provided to Executive) until the date that is six months following the Date of Retirement (or the earliest date as is permitted under Section 409A of the Code), (ii) any reimbursements provided under this Agreement, including reimbursement of past business expenses provided under Section 1.5 of this Agreement (by reference to Section 8.a.(iii)(C) of the Employment Agreement), shall be made no later than the end of Executive’s taxable year following Executive’s taxable year in which such expense was incurred; in addition, the amounts eligible for reimbursement during any one taxable year under this Agreement may not affect the expenses eligible for reimbursement in any other taxable year under this Agreement, and (iii) if any other payments of money or other benefits due to Executive hereunder could cause the application of an accelerated or additional tax under Section 409A of the Code, such payments or other benefits shall be deferred if deferral will make such payment or other benefits compliant under Section 409A of the Code, or otherwise such payment or other benefits shall be restructured, to the extent possible, in a manner, determined by the Company, that does not cause such an accelerated or additional tax or result in an additional cost to the Company. The payments described in Sections 1.3 through 1.6 are intended to be exempt from Section 409A as short-term deferral payments. Company shall consult with Executive in good faith regarding the implementation of the provisions of this Section 4.6; provided that neither the Company nor any of its employees or representatives shall have any liability to Executive with respect thereto.

Section 4.6. Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same Agreement.

Section 4.7. Governing Law; Jurisdiction. This Agreement shall be governed under the laws of the State of Delaware, without giving effect to its conflict of law principles.

Section 4.8. Effective Date. This Agreement shall become effective only upon (a) execution of this Agreement by Executive after the expiration of the twenty-one (21) day consideration period described in Section 2.3 of this Agreement, unless such consideration period is shortened as provided in Section 2.3 of this Agreement; and (b) the expiration of the seven (7) day period for revocation of this Agreement by Executive described in Section 2.4 of this Agreement. The date on which this Agreement so becomes effective is referred to herein as the “**Effective Date**.”

[Remainder of page intentionally left blank.]

CAUTION!

PLEASE READ BEFORE SIGNING. THIS DOCUMENT CONTAINS A RELEASE OF ALL ACTUAL AND POTENTIAL CLAIMS AGAINST THE COMPANY AND ITS AFFILIATES. YOU ARE ADVISED TO CONSULT WITH AN ATTORNEY PRIOR TO SIGNING THIS DOCUMENT.

IN WITNESS WHEREOF, Executive and the Company agree as set forth above: DATE OF EXECUTION BY

EXECUTIVE: AGREED TO AND ACCEPTED BY:

10/6/2021

/s/ Scott W. Merkle

SCOTT W. MERKLE EXECUTION WITNESSED BY:

/s/ Terri Merkle

DATE OF EXECUTION BY COMPANY: AGREED TO AND ACCEPTED BY
CHART INDUSTRIES, INC.

10/6/2021

BY: /s/ Gerry Vinci

TITLE: CHRO

EXECUTION WITNESSED BY:

/s/ Herbert G. Hotchkiss

GENERAL RELEASE OF CLAIMS

Scott W. Merkle (“Executive”) and Chart Industries, Inc. (the “Company”), in exchange for their mutual covenants and obligations set forth herein and in the Agreement of Retirement and Release to which this Exhibit A is attached, hereby enter into this General Release of Claims (the “General Release”):

1. **Executive’s Release.** In consideration of the promises and agreements set forth herein, Executive does hereby for himself and for his heirs, executors, successors and assigns, release and forever discharge the Company, its subsidiaries, divisions, and affiliated businesses, direct or indirect, together with its and their respective officers, directors, shareholders, members, management, representatives, agents, employees, successors, assigns, and attorneys, both known and unknown, in both their personal and agency capacities (collectively, the “***Company Entities***”) of and from any and all claims, demands, damages, actions or causes of action, suits, claims, charges, complaints, contracts, whether oral or written, express or implied and promises, at law or in equity, of whatsoever kind or nature, including but not limited to any alleged violation of any state or federal anti-discrimination statutes or regulations, including but not limited to Title VII of The Civil Rights Act of 1964 as amended, ERISA, the Americans With Disabilities Act, the Age Discrimination in Employment Act, the Older Workers Benefit Protection Act, the Family and Medical Leave Act (“FMLA”), breach of any express or implied contract or promise, wrongful discharge, violation of public policy, or tort, all demands for attorney’s fees, back pay, holiday pay, vacation pay, bonus, group insurance, any claims for reinstatement, employee benefits and claims for money, out of pocket expenses, any claims for emotional distress, defamation and humiliation, that Executive might now have or may subsequently have against the Company Entities or any of them, whether known or unknown, suspected or unsuspected, by reason of any matter or thing, arising out of or in any way connected with, directly or indirectly, any acts or omissions of any of the Company Entities arising out of Executive’s employment and termination from employment which have occurred prior to the Effective Date of this General Release, **except** those matters specifically set forth herein, **except** for any health, welfare, pension or retirement benefits which may have vested on Executive’s behalf, if any, **except** for any rights regarding vested equity held by Executive, and **except** for any rights Executive has under any applicable policies of Directors and Officers liability insurance. Notwithstanding the foregoing, Executive may file a charge with, testify, assist, or participate in an investigation, hearing or proceeding conducted by the Equal Employment Opportunity Commission or state fair employment practices agency as to the employment laws enforced by such agencies; provided, however, that Executive understands and agrees that he is waiving and releasing his rights to monetary damages under such laws by reason of his agreement to the above-stated general release language.

2. Age Discrimination in Employment Act/Older Workers Benefit Protection Act Release. Executive waives and releases all rights, remedies, claims and causes of action, known and unknown, he has or may have against the Company Entities for any matter related to his employment and the termination of that employment under the Age Discrimination in Employment Act of 1967, 29 U.S.C. § 621, *et seq.*, as amended by the Older Worker Benefit Protection Act, 29 U.S.C. § 623, by reason of any matter or thing arising out of, or in any way connected with, directly or indirectly, any acts or omissions which have occurred prior to and including the Effective Date of this General Release. In other words, by signing this General Release, Executive will have none of the legal rights against the aforementioned that Executive would otherwise have under these laws.

3. Consideration Period. The Company hereby notifies Executive of his right to consult with his chosen legal counsel before signing this General Release. The Company shall afford, and Executive acknowledges receiving, not less than twenty-one (21) calendar days in which to consider this General Release to ensure that Executive's execution of this General Release is knowing and voluntary. In signing below, Executive expressly acknowledges that he has been afforded the opportunity to take at least twenty-one (21) days to consider this General Release and that his execution of same is with full knowledge of the consequences thereof and is of his own free act and will.

Notwithstanding the fact that the Company has allowed Executive twenty-one (21) days to consider this General Release, Executive may elect to execute this General Release prior to the end of such 21-day period. If Executive elects to execute this General Release prior to the end of such 21-day period, then by his signature below, Executive represents that his decision to accept this shortening of the time was knowing and voluntary and was not induced by fraud, misrepresentation, or any threat to withdraw or alter the benefits provided by the Company herein, or by the Company providing different terms to any similarly-situated employee executing this General Release prior to end of such 21-day consideration period. The parties agree changes, whether material or immaterial, to this General Release shall not restart the running of the twenty- one (21) day time period.

4. Revocation Period. Both the Company and Executive agree and recognize that, for a period of seven (7) calendar days following Executive's execution of this General Release, Executive may revoke this General Release by providing written notice revoking the same, within this seven (7) day period, delivered by hand or by certified mail, addressed to Gerry Vinci, Chart Industries, Inc., One Overton, 3625 Cumberland Blvd., SE, Atlanta, GA 30339, delivered or postmarked within such seven (7) day period. In the event Executive so revokes this General Release, each party will receive only those entitlements and/or benefits that he/it would have received regardless of this General Release.

5. Acknowledgments. Executive acknowledges that Executive has carefully read and fully understands all of the provisions of this General Release, that Executive has not relied on any representations of the Company or any of its representatives, directors, officers, employees and/or agents to induce Executive to enter into this General Release, other than as specifically set forth herein and that Executive is fully competent to enter into this General Release and has not been pressured, coerced or otherwise unduly influenced to enter into this General Release and that Executive has voluntarily entered into this General Release and the same is Executive's own free act and will.

6. Governing Law; Jurisdiction. This General Release shall be governed under the laws of the State of Delaware, without giving effect to its conflict of law principles.

7. Effective Date. This General Release shall become effective only upon (a) execution of this General Release by Executive after the expiration of the twenty-one (21) day consideration period described in Section 3 of this General Release, unless such consideration period is shortened as provided in Section 3 of this General Release; and (b) the expiration of the seven (7) day period for revocation of this General Release by Executive described in Section 4 of this General Release. The date on which this General Release so becomes effective is referred to herein as the "*Effective Date.*"

CAUTION!

PLEASE READ BEFORE SIGNING. THIS DOCUMENT CONTAINS A RELEASE OF ALL ACTUAL AND POTENTIAL CLAIMS AGAINST THE COMPANY AND ITS AFFILIATES. YOU ARE ADVISED TO CONSULT WITH AN ATTORNEY PRIOR TO SIGNING THIS DOCUMENT.

IN WITNESS WHEREOF, Executive and the Company agree as set forth above: DATE OF EXECUTION BY

EXECUTIVE: AGREED TO AND ACCEPTED BY:

(not to be signed prior to the Date of Retirement)

SCOTT W. MERKLE EXECUTION WITNESSED BY:

DATE OF EXECUTION BY COMPANY: AGREED TO AND ACCEPTED BY
CHART INDUSTRIES, INC.

_____ BY: __ TITLE: __

EXECUTION WITNESSED BY:

**CHART INDUSTRIES, INC.
2017 OMNIBUS EQUITY PLAN**

NONQUALIFIED STOCK OPTION AGREEMENT

THIS NONQUALIFIED STOCK OPTION AGREEMENT (the “Agreement”) is entered into as of this [[grantdatewords]] (the “Grant Date”), between Chart Industries, Inc., a Delaware corporation (the “Company”), and [[FIRSTNAME]] [[LASTNAME]] (the “Participant”).

WITNESSETH:

WHEREAS, the Compensation Committee of the Board of Directors of the Company (the “Committee”) administers the Chart Industries, Inc. 2017 Omnibus Equity Plan (the “Plan”); and

WHEREAS, the Committee has determined that it would be in the best interests of the Company and its stockholders to grant nonqualified stock options to the Participant upon the terms and conditions set forth in this Agreement.

NOW, THEREFORE, the Company and the Participant agree as follows:

1. Interpretation. Unless otherwise specified in this Agreement, capitalized terms shall have the meanings attributed to them under the Plan. The terms and provisions of the Plan, as it may be amended from time to time, are hereby incorporated herein by reference. In the event of a conflict between any term or provision contained herein and a term or provision of the Plan, the applicable terms and provisions of the Plan will govern, except with respect to Section 4(b) of this Agreement.

2. Grant of the Option. As of the Grant Date, the Company grants to the Participant, under the terms and conditions of this Agreement, the right to purchase all or any part of an aggregate of ([[SHARESGRANTED]]) Shares, which right will vest over a period of time in accordance with Section 4 (the “Option”), subject to adjustment as set forth in Section 3.4 of the Plan. The Option is intended to be a nonqualified stock option.

3. Option Price. The purchase price of the Shares subject to the Option shall be, and shall never be less than, the Fair Market Value of the Shares on the Grant Date. The Fair Market Value of a Share on the Grant Date is [[grantprice]] (the “Option Price”). The Option Price is subject to adjustment as described in Section 3.4 of the Plan.

4. Vesting.

a. Service-Based. Subject to the Participant’s continued Employment as of such dates (except as otherwise provided herein with respect to death, Disability, Retirement or Change in Control), the Option shall vest and become exercisable with respect to twenty-five percent (25%) of the Shares initially covered by the Option on each of the first, second, third and fourth anniversaries of the Grant Date.

b. Change in Control.

i. Company Remains Surviving Entity or Awards Assumed by Successor.

A. Upon the occurrence of a Change in Control as defined in the Plan in which either (i) the Company remains the surviving entity or (ii) the Company is not the surviving entity, but this Agreement is Assumed (as defined in Section 4(b)(i)(C) below) by the entity (or any successor or parent thereof) that effects such change in control (the “Post-CIC Entity”), the Option shall continue to vest and become exercisable in accordance with the terms of this Agreement

unless, during the two-year period commencing on the date of the Change in Control:

1. the Participant's employment or service is involuntarily terminated by the Company or the Post-CIC Entity, as applicable, for reasons other than for Cause (as defined in Section 4(d)(iii)); or
 2. the Participant terminates the Participant's employment or service for Good Reason (as defined in Section 4(d)(iv)).
- B. If a Participant's employment or service is terminated as described in Section 4(b)(i)(A)(1) or (2) above ("Protected Termination"), the Option shall become fully vested and remain exercisable until the earlier of (A) the end of the original term of the Option as provided in the Plan or (B) the second anniversary of the date the Protected Termination occurs; provided, that any Participant who is to incur a Protected Termination in connection with Participant's employment or service for Good Reason must:
1. provide the Company with a written notice of Participant's intent to incur a Protected Termination of employment or service for Good Reason within sixty (60) days after the Participant becomes aware of the circumstances giving rise to Good Reason; and
 2. allow the Company thirty (30) days to remedy such circumstances to the extent curable.
- C. For purposes of this Section 4, an Award shall be considered assumed by the Post-CIC Entity ("Assumed") if all of the following conditions are met:
1. The Option is converted into a replacement award in a manner that complies with Code Section 409A;
 2. the replacement awards contain provisions for scheduled vesting and treatment on Protected Termination of employment (including the definitions of Cause and Good Reason, if applicable) that are no less favorable to the Participant than the Option, and all other terms of the replacement awards (other than the security and number of shares represented by the replacement awards) are substantially similar to, or more favorable to the Participant than, the terms of the Option; and
 3. the security represented by the Option is of a class that is publicly held and widely traded on an established stock exchange.
- ii. Awards Not Assumed by Successor.
- A. Upon the occurrence of a Change in Control in which the Company is not the surviving Company, if the Option is not Assumed by the Post-CIC Entity, the Option shall become fully vested and exercisable on the date of the Change in Control, and the following provisions of this Section 4(b)(ii) shall apply.
-

- B. The Participant shall receive a payment equal to the difference between the consideration (consisting of cash or other property (including securities of a successor or parent corporation)) received by holders of Shares in the Change in Control transaction and the exercise price of the applicable Stock Option or SAR, if such difference is positive. Such payment shall be made in the same form as the consideration received by holders of Shares. If the Option has an exercise price that is higher than the per share consideration received by holders of Shares in connection with the Change in Control, the Option shall be cancelled for no additional consideration.
- C. The payments contemplated by Sections 4(b)(ii)(B) shall be made at the same time as consideration is paid to the holders of Shares in connection with the Change in Control, provided such payments are made no later than the fifth anniversary of the Change in Control.

c. Termination of Employment

- i. General Rule. If the Participant's Employment is terminated for any reason other than those reasons specifically addressed in Section 4(c), and except as otherwise provided in Section 4(b), the Unvested Portion of the Option shall be canceled and the Participant shall have no further rights with respect thereto and the Vested Portion of the Option shall remain exercisable for the period set forth in Section 5(a) of this Agreement.
- ii. Death or Disability. If the Participant's Employment terminates as a result of death or Disability, the Option shall, to the extent not then vested and not previously canceled, immediately become fully vested and exercisable.
- iii. Retirement. If the Participant's Employment terminates as a result of Retirement and the Participant will have continued vesting of unvested stock options that would have otherwise vested in the year following the year in which the Participant retires. The remaining unvested options are forfeited.

d. Special Terms.

- i. At any time, the portion of the Option which has become vested and exercisable as described above is referred to as the "Vested Portion," and the portion of the Option which is then unvested is referred to as the "Unvested Portion."
 - ii. The term "Retirement" or variations thereof means a voluntary termination of Employment with the Company, its Subsidiaries and its Affiliates after either (i) attaining age 60 and completing 10 years of service with such entities or (ii) attaining age 65 and completing 5 years of service with such entities.
 - iii. "Cause" shall mean, with respect to the Participant, the meaning ascribed to such term in any employment, severance, or change in control agreement entered into by the Participant. If the Participant has not entered into any employment, severance, or change in control agreement with a definition of Cause, then "Cause" means (i) the Participant's willful failure to perform duties which, if curable, is not cured promptly, or in any event within ten (10) days, following the first written notice of such failure from the Company, (ii) the Participant's commission of, or plea of guilty or no contest to a (x) felony or (y) crime involving moral turpitude, (iii) willful
-

malfeasance or misconduct by the Participant which is demonstrably injurious to the Company or its Subsidiaries or Affiliates, (iv) material breach by the Participant of any non-competition, non-solicitation or confidentiality covenants, (v) commission by the Participant of any act of gross negligence, corporate waste, disloyalty or unfaithfulness to the Company which adversely affects the business of the Company or its Subsidiaries or Affiliates, or (vi) any other act or course of conduct by the Participant which will demonstrably have a material adverse effect on the Company, a Subsidiary or Affiliate's business; and

- iv. "Good Reason" means, with respect to the Participant, the meaning ascribed to such term in any employment, severance, or change in control agreement entered into by the Participant. If the Participant has not entered into any employment, severance, or change in control agreement with a definition of Good Reason, then "Good Reason" means without the Participant's consent, (i) a material diminution in the Participant's authority, position or duties, or a material adverse change in reporting lines, (ii) Participant's principal place of employment with the Company or Post-CIC Entity is relocated a material distance (which for this purpose shall be deemed to be more than 50 miles) from such Participant's principal place of employment immediately prior to the Change in Control, (iii) any reduction in the Participant's base salary and (excluding any general salary reduction affecting similarly situated employees of the Company as a result of a material adverse change in the Company's prospects or business), or (iv) the Participant is excluded, following a Change in Control (other than through Participant's voluntary action(s)), from full participation in any benefit plan or arrangement maintained for similarly situated employees of the Company or Post-CIC Entity, and such exclusion materially reduces the benefits that otherwise would have been available to the Participant, in each case which is not cured within thirty (30) days following the Company's receipt of written notice from the Participant describing the event constituting Good Reason.
- v. "Disability" shall mean, with respect to the Participant, a medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than 12 months which: (i) renders the Participant unable to engage in substantial gainful activity or (ii) results in the Participant receiving income replacement benefits for at least three months under an accident and health plan sponsored by the Participant's employer.

5. Exercise of Option.

- a. Period of Exercise. Except as otherwise provided in Section 4(b)(i)(B) above, and subject to the provisions of the Plan and this Agreement, the Participant (or his or her successor, as appropriate) may exercise all or any part of the Vested Portion of the Option at any time prior to the earliest to occur of:
 - i. the tenth anniversary of the Grant Date;
 - ii. the first anniversary of the Participant's termination of Employment due to death or Disability;
 - iii. the fifth anniversary of the Participant's termination of Employment due to Retirement;
 - iv. thirty (30) days following the date of the Participant's termination of Employment by the Participant without Good Reason (other than Retirement) or by the Company or its Affiliates for Cause; and
-

- v. ninety (90) days following the date of the Participant's termination of Employment for reasons other than the reasons described in Section 5(a)(ii), 5(a)(iii) and 5(a)(iv) above.

b. Method of Exercise.

- i. Subject to Section 5(a), the Vested Portion of the Option may be exercised by delivering written notice of intent to so exercise to the Company at its principal office; provided that, the Option may be exercised with respect to whole Shares only. Such notice shall specify the number of Shares for which the Option is being exercised and shall be accompanied by full payment of the Option Price. Payment of the Option Price may be made at the election of the Participant: (w) in cash or its equivalent (e.g., by check); (x) to the extent permitted by the Committee, in Shares having a Fair Market Value as of the payment date equal to the aggregate Option Price for the Shares being purchased and satisfying such other requirements imposed by the Committee, provided that such Shares have been held by the Participant for more than six months (or such other period as established from time to time by the Committee); (y) partially in cash and, to the extent permitted by the Committee, partially in such Shares; or (z) if there is a public market for the Shares on the payment date, subject to such rules as may be established by the Committee, through the delivery of irrevocable instructions to a broker to sell Shares obtained upon the exercise of the Option and to deliver promptly to the Company an amount out of the proceeds of such sale equal to the aggregate Option Price for the Shares being purchased. No Participant shall have any rights to dividends or other rights of a stockholder with respect to Shares subject to an Option until the Participant has given written notice of exercise of the Option, paid the full Option Price for such Shares and, if applicable, satisfied any other requirements imposed by the Committee.
- ii. Notwithstanding any other provision of the Plan or this Agreement to the contrary, the Option may not be exercised prior to the completion of any registration or qualification of the Option or the Shares under applicable state and federal securities or other laws, or under any ruling or regulation of any governmental body or national securities exchange that the Committee determines, in its sole discretion, to be necessary or advisable.
- iii. Upon the Committee's determination that the Option has been validly exercised as to any of the Shares, the Company shall issue certificates in the Participant's name for such Shares. However, the Company shall not be liable to any person or entity for damages relating to any delays in issuing the certificates, any loss of the certificates or any mistakes or errors in the issuance of the certificates or in the certificates themselves.
- iv. In the event of the Participant's death, the Vested Portion of the Option shall remain exercisable by the Participant's successor to the extent set forth in Section 5(a). No beneficiary, executor, administrator, heir or legatee of the Participant shall have greater rights than the Participant under this Agreement or otherwise.

6. Designation of Beneficiary. By properly executing and delivering a Designation of Beneficiary Form to the Company, the Participant may designate an individual or individuals as his or her beneficiary or beneficiaries with respect to his or her interest under the Plan. If the Participant fails to properly designate a beneficiary, his or her interests under this Agreement will pass to the person or persons in the first of the following classes (who shall be deemed a beneficiary or beneficiaries) in which there are any survivors: (i) spouse at the time of death; (ii) issue, per stirpes; (iii) parents; and (iv) the estate. Except as the Company may determine in its sole and exclusive discretion, a properly completed

Designation of Beneficiary Form shall be deemed to revoke all prior designations upon its receipt and approval by the designated representative.

7. Non-Transferability of Option. The Option (and any portion thereof) may not be assigned, alienated, pledged, attached, sold or otherwise transferred or encumbered by the Participant other than by beneficiary designation pursuant to this Agreement or the laws of descent and distribution, and any such purported assignment, alienation, pledge, attachment, sale, transfer or encumbrance shall be void and unenforceable. No permitted transfer of the Option shall be effective to bind the Company unless the Committee is furnished with written notice thereof and a copy of such evidence as the Committee may deem necessary or appropriate to establish the validity of the transfer and the acceptance by the transferee or transferees of the terms and conditions of the Plan and this Agreement. During the Participant's lifetime, the Option is exercisable only by the Participant.

8. Non-Transferability of Shares; Legends. Upon the acquisition of any Shares pursuant to the exercise of the Option, if the Shares have not been registered under the Securities Act of 1933, as amended (the "Act"), they may not be sold, transferred or otherwise disposed of unless a registration statement under the Act with respect to the Shares has become effective or unless the Participant establishes to the satisfaction of the Company that an exemption from such registration is available. The Shares will bear a legend stating the substance of such restrictions, as well as any other restrictions the Committee deems necessary or appropriate. In addition, the Participant will make or enter into such written representations, warranties and agreements as the Committee may reasonably request in order to comply with applicable securities laws or this Agreement.

9. Plan Administration. The Plan is administered by the Committee, which has sole and exclusive power and discretion to interpret, administer, implement and construe the Plan and this Agreement. All elections, notices and correspondence relating to the Plan should be directed to the Secretary at:

Chart Industries, Inc.
2200 Airport Industrial Drive
Suite 100
Ball Ground, GA 30107
Attn.: Secretary

10. Notices. Any notice relating to this Agreement intended for the Participant will be sent to the address appearing in the personnel records of the Company, its Affiliate or its Subsidiary. Either party may designate a different address in writing to the other. Any notice shall be deemed effective upon receipt by the addressee.

11. Successors and Legal Representatives. This Agreement will bind and inure to the benefit of the Company and the Participant and their respective heirs, beneficiaries, executors, administrators, estates, successors, assigns and legal representatives.

12. Withholding. The Participant may be required to pay to the Company or any Affiliate and the Company or any Affiliate shall have the right and is hereby authorized to withhold, any applicable withholding taxes in respect of the Option, its exercise or any payment or transfer under or with respect to the Option and to take such other action as may be necessary in the opinion of the Committee to satisfy all obligations for the payment of such withholding taxes.

13. Integration. This Agreement, together with the Plan, constitutes the entire agreement between the Participant and the Company with respect to the subject matter hereof. No terms of this Agreement shall be construed as amending the Plan in any respect. In the event of any conflict between the provisions of the Plan as in effect on the date hereof and the provisions of this Agreement, the provisions of the Plan shall govern, except with respect to Section 4(b) of this Agreement. This Agreement and the Plan may not be modified, amended, renewed or terminated, nor may any term, condition or breach of any term or condition be waived, except pursuant to the terms of the Plan or Section 21 below or by a writing signed by the person or persons sought to be bound by such modification, amendment, renewal, termination or waiver. Any waiver of any term, condition or breach

thereof will not be a waiver of any other term or condition or of the same term or condition for the future, or of any subsequent breach.

14. Separability. In the event of the invalidity of any part or provision of this Agreement, such invalidity will not affect the enforceability of any other part or provision of this Agreement.

15. Incapacity. If the Committee determines that the Participant is incompetent by reason of physical or mental disability or a person incapable of handling his or her property, the Committee may deal directly with, or direct any issuance of Shares to, the guardian, legal representative or person having the care and custody of the incompetent or incapable person. The Committee may require proof of incompetence, incapacity or guardianship, as it may deem appropriate before making any issuance. In the event of an issuance of Shares, the Committee will have no obligation thereafter to monitor or follow the application of the Shares issued. Issuances made pursuant to this paragraph shall completely discharge the Company's obligations under this Agreement.

16. No Further Liability. The liability of the Company, its Affiliates, and its Subsidiaries under this Agreement is limited to the obligations set forth herein and no terms or provisions of this Agreement shall be construed to impose any liability on the Company, its Affiliates, its Subsidiaries or the Committee in favor of any person or entity with respect to any loss, cost, tax or expense which the person or entity may incur in connection with or arising from any transaction related to this Agreement.

17. Section Headings. The section headings of this Agreement are for convenience and reference only and are not intended to define, extend or limit the contents of the sections.

18. No Right to Continued Employment. Nothing in this Agreement will be construed to confer upon the Participant the right to continue in the Employment of the Company, its Subsidiaries or its Affiliates, or to be employed or serve in any particular position therewith, or affect any right the Company, its Subsidiaries or its Affiliates may have to terminate the Participant's Employment or service with or without cause.

19. Governing Law. This Agreement will be governed by, construed and enforced in accordance with the internal laws of the State of Delaware, without giving effect to its principles of conflict of laws.

20. Signature in Counterparts. This Agreement may be signed in counterparts, each of which shall be an original, with the same effect as if the signatures were upon the same instrument.

21. Amendment. The Committee may waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate this Agreement, but no such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination shall materially adversely affect the rights of the Participant hereunder without the consent of the Participant; provided, however, that the Participant's consent shall not be required to an amendment that is deemed necessary or appropriate by the Company to ensure (a) compliance with (or exemption from) Section 409A of the Code; (b) compliance with the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 or any regulations promulgated thereunder (the "Dodd-Frank Act"); or (c) compliance with the terms of any recoupment or "clawback" policy the Company adopts to comply with the requirements of the Dodd-Frank Act or any regulations promulgated thereunder (even if the terms of that policy are broader than the requirements of the Dodd-Frank Act).

22. Section 409A of the Code. It is intended that this Agreement and the compensation and benefits hereunder meet the requirements for exemption from Code Section 409A set forth in Treas. Reg. Section 1.409A-1(b)(5), as well as any other such applicable exemption, and this Agreement shall be so interpreted and administered. In addition to the general amendment rights of the Company with respect to the Plan, the Company specifically retains the unilateral right (but not the obligation) to make, prospectively or retroactively, any amendment to this Agreement or any related document as it deems necessary or desirable to more fully address issues in connection with exemption from (or compliance with) Section 409A of the Code and other laws. In no event, however, shall this section or any other provisions of this Agreement be construed to require the Company to provide any gross-up for the tax

consequences of any provisions of, or payments under, this Agreement. Except as may be provided in another agreement to which the Company is bound, the Company and its Affiliates shall have no responsibility for tax or legal consequences to the Participant (or the Participant's beneficiaries) resulting from the terms or operation of this Agreement or the Plan.

23. Adjustment of Number of Shares, Etc. Subject to Section 3.4 of the Plan, if, after the Grant Date, the Committee determines that any dividend or other distribution (whether in the form of cash, Shares, other securities or other property), recapitalization, stock split, reverse stock split, reorganization, redesignation, reclassification, merger, consolidation, liquidation, split-up, reverse split, spin-off, combination, repurchase or exchange of Shares or other securities of the Company, issuance of warrants or other rights to purchase Shares or other securities of the Company or other similar corporate transaction or event affects the Shares such that an adjustment is determined by the Committee to be appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under this Agreement, then the Committee may, in such manner as it deems equitable, adjust any or all of (i) the number and type of Shares (or other securities or other property) subject to the Option and (ii) the Option Price. Any such adjustment shall be final, binding and conclusive as to the Participant. Any such adjustment may provide for the elimination of fractional shares if the Committee shall so direct.

By Participant's signature and the signature of the Company's representative below, or by Participant's acceptance of this Award through the Company's online acceptance procedure, this Agreement shall be deemed to have been executed and delivered by the parties hereto as of the Grant Date. Participant hereby acknowledges that the treatment of the Option upon a Change in Control, as set forth in Section 4(b) hereof, differs from and supersedes the treatment set forth in Section 12.2 of the Plan.

Participant Chart Industries, Inc.

[[SIGNATURE]] By: [[SIGNATURE]]

Print Name: [[FIRSTNAME]] [[LASTNAME]] Its: [[TITLE]]

Date: [[SIGNATURE_DATE]] Date: [[SIGNATURE_DATE]]

CHART INDUSTRIES, INC.
2017 OMNIBUS EQUITY PLAN

PERFORMANCE UNIT AGREEMENT

THIS PERFORMANCE UNIT AGREEMENT (the “Agreement”), is entered into as of this [[grantdatewords]] (the “Grant Date”), by and between Chart Industries, Inc., a Delaware corporation (the “Company”), and [[FIRSTNAME]] [[LASTNAME]] (the “Grantee”).

WITNESSETH:

WHEREAS, the Compensation Committee of the Board of Directors of the Company (the “Committee”) administers the Chart Industries, Inc. 2017 Omnibus Equity Plan (the “Plan”); and

WHEREAS, the Committee desires to provide the Grantee with Performance Units under the Plan upon the terms and conditions set forth in this Agreement.

NOW, THEREFORE, the Company and the Grantee agree as follows:

1. Definitions. Unless the context otherwise indicates, the following words used herein shall have the following meanings wherever used in this Agreement:

- a. “Cause” means, with respect to the Grantee, the meaning ascribed to such term in any employment, severance, or change in control agreement entered into by the Grantee. If the Grantee has not entered into any employment, severance, or change in control agreement with a definition of Cause, then “Cause” means (i) the Grantee’s willful failure to perform duties which, if curable, is not cured promptly, or in any event within ten (10) days, following the first written notice of such failure from the Company, (ii) the Grantee’s commission of, or plea of guilty or no contest to a (x) felony or (y) crime involving moral turpitude, (iii) willful malfeasance or misconduct by the Grantee which is demonstrably injurious to the Company or its Subsidiaries or Affiliates, (iv) material breach by the Grantee of any non-competition, non-solicitation or confidentiality covenants, (v) commission by the Grantee of any act of gross negligence, corporate waste, disloyalty or unfaithfulness to the Company which adversely affects the business of the Company or its Subsidiaries or Affiliates, or (vi) any other act or course of conduct by the Grantee which will demonstrably have a material adverse effect on the Company, a Subsidiary or Affiliate’s business.
 - b. “Disability” means, with respect to the Grantee, a medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than 12 months which: (i) renders the Grantee unable to engage in substantial gainful activity or (ii) results in the Grantee receiving income replacement benefits for at least three months under an accident and health plan sponsored by the Grantee’s employer.
 - c. “Good Reason” means, with respect to the Grantee, the meaning ascribed to such term in any employment, severance, or change in control agreement entered into by the Grantee. If the Grantee has not entered into
-

any employment, severance, or change in control agreement with a definition of Good Reason, then “Good Reason” means without the Grantee’s consent, (i) a material diminution in the Grantee’s authority, position or duties, or a material adverse change in reporting lines, (ii) Grantee’s principal place of employment with the Company or Post-CIC Entity is relocated a material distance (which for this purpose shall be deemed to be more than 50 miles) from such Grantee’s principal place of employment immediately prior to the Change in Control, (iii) any reduction in the Grantee’s base salary and (excluding any general salary reduction affecting similarly situated employees of the Company as a result of a material adverse change in the Company’s prospects or business), or (iv) the Grantee is excluded, following a Change in Control (other than through Grantee’s voluntary action(s)), from full participation in any benefit plan or arrangement maintained for similarly situated employees of the Company or Post-CIC Entity, and such exclusion materially reduces the benefits that otherwise would have been available to the Grantee, in each case which is not cured within thirty (30) days following the Company’s receipt of written notice from the Grantee describing the event constituting Good Reason.

- d. “Performance Period” means the period set forth in Exhibit A.
- e. “Performance Requirements” means the performance measure(s) set forth in Exhibit A.
- f. “Performance Unit” means a Restricted Share Unit representing the right to receive a Share after completion of the Performance Period provided that the Performance Requirements have been satisfied.
- g. “Retirement” (or variations thereof) means a voluntary termination of Employment with the Company, its Subsidiaries and its Affiliates after either (i) attaining age 60 and completing 10 years of service with such entities or (ii) attaining age 65 and completing 5 years of service with such entities.

Notwithstanding this Section, and unless otherwise specified in the Agreement, capitalized terms shall have the meanings attributed to them under the Plan.

2. Grant of Performance Units. As of the Grant Date, the Company grants to the Grantee, upon the terms and conditions set forth in this Agreement, ([[SHARESGRANTED]]) Performance Units. If the Grantee is a Section 162(m) Person, the Performance Units are intended to be Section 162(m) of the Code “performance-based compensation.” The Performance Units are granted in accordance with, and subject to, all the terms, conditions and restrictions of the Plan, which is hereby incorporated by reference in its entirety. In the event of a conflict between any term or provision contained herein and a term or provision of the Plan, the applicable terms and provisions of the Plan will govern, except with respect to Section 5 of this Agreement. The Grantee irrevocably agrees to, and accepts, the terms, conditions and restrictions of the Plan and this Agreement on his own behalf and on behalf of any beneficiaries, heirs, legatees, successors and assigns.

3. Restrictions on Transfer of Performance Units. The Grantee and his or her beneficiaries, heirs, legatees, successors and assigns cannot sell, transfer, assign, pledge, hypothecate or otherwise directly or indirectly dispose of the Performance Units (whether with or

without consideration and whether voluntarily or involuntarily or by operation of law) or any interest therein.

4. Termination of Employment.

- a. Retirement, Death or Disability. If the Grantee terminates Employment as a result of Retirement, death or Disability prior to the last day of the Performance Period, the Grantee (or his or her beneficiary or beneficiaries) shall be entitled to a pro-rated number of Shares, calculated by multiplying (x) by (y) where:

- (x) is the number of Shares, if any, that would have been earned by the Grantee as the result of the satisfaction of the Performance Requirements; and
- (y) is the number of months that the Grantee was employed (rounded up to the nearest whole number) during the Performance Period divided by the number of months in the Performance Period.

The distribution or payment of the pro-rated award shall occur (if at all) at the same time as the distribution or payment specified in Section 6.

- b. Reasons Other Than Retirement, Death or Disability. Except as otherwise provided in Section 5, if the Committee determines in its sole and exclusive discretion that the Grantee's Employment has terminated prior to the end of the Performance Period for reasons other than those described in Section 4(a) above, the Grantee will forfeit his or her Performance Units. If the Performance Units are forfeited, the Grantee and all persons who might claim through him or her will have no further interests under this Agreement.

5. Change in Control.

- a. Company Remains Surviving Entity or Awards Assumed by Successor.

- i. Upon the occurrence of a Change in Control as defined in the Plan in which either (i) the Company remains the surviving entity or (ii) the Company is not the surviving entity, but the Performance Units granted pursuant to this Agreement are Assumed (as defined in Section 5(a)(iii) below) by the entity (or any successor or parent thereof) that effects such change in control (the "Post-CIC Entity"), any Performance Units granted pursuant to this Agreement prior to the Change in Control shall continue to vest in accordance with the terms of this Agreement unless, during the two-year period commencing on the date of the Change in Control:

- A. the Grantee's employment or service is involuntarily Terminated by the Company or the Post-CIC Entity, as applicable, for reasons other than for Cause; or
- B. the Grantee Terminates Grantee's employment or service for Good Reason.
-

- ii. If a Grantee's employment or service is terminated as described in Section 5(a)(i)(A) or (B) above (a "Protected Termination"), the Performance Units granted to Grantee pursuant to this Agreement shall immediately be earned or vest in a prorated amount (as described below) and such prorated portion shall, to the extent permitted under Code Section 409A without resulting in adverse tax effects to the Grantee, become immediately payable in accordance with the Award's terms; provided, that if the Grantee intends to incur a Protected Termination of Grantee's employment or service for Good Reason, Grantee must:
 - A. provide the Company with a written notice of Grantee's intent to incur a Protected Termination of employment or service for Good Reason within sixty (60) days after the Grantee becomes aware of the circumstances giving rise to Good Reason; and
 - B. allow the Company thirty (30) days to remedy such circumstances to the extent curable.

For purposes of this Section 5(a)(ii), the "prorated amount" will be based on the actual level of achievement against the Performance Requirements during the Performance Period up to the date of the Change in Control and the number of full months that elapsed during the Performance Period up to, and as of, the date of the Change in Control. The Committee may, in good faith, adjust performance goals to account for the shortened Performance Period.

- iii. For purposes of this Section 5, the Performance Units granted pursuant to this Agreement shall be considered assumed by the Post-CIC Entity ("Assumed") if all of the following conditions are met:
 - A. Such Performance Units are converted into replacement awards that preserve the value of such Performance Units at the time of the Change in Control;
 - B. the replacement awards contain provisions for scheduled vesting and treatment on a Protected Termination of employment (including the definitions of Cause and Good Reason, if applicable) that are no less favorable to the Grantee than the underlying Performance Units, and all other terms of the replacement awards (other than the security and number of shares represented by the replacement awards) are substantially similar to, or more favorable to the Grantee than, the terms of this Agreement; and
 - C. the security represented by the replacement awards, if any, is of a class that is publicly held and widely traded on an established stock exchange.

b. Awards Not Assumed by Successor.

- i. Upon the occurrence of a Change in Control in which the Company is not the surviving Company, a prorated amount (as
-

described below) of any Performance Units granted pursuant to this Agreement that are subject to Performance Requirements and that are not Assumed by the Post-CIC Entity shall immediately vest and become immediately payable in accordance with its terms (subject to Section 5(c)), and this Section 5(b) shall apply.

For purposes of this Section 5(b), the “prorated amount” will be based on the actual level of achievement against the Performance Requirements during the Performance Period up to, and as of, the date of the Change in Control and the number of full months that elapsed during the Performance Period up to the date of the Change in Control. The Committee may, in good faith, adjust performance goals to account for the shortened Performance Period.

- ii. The payments contemplated by this Section 5(b) shall be made at the same time as consideration is paid to the holders of Shares in connection with the Change in Control, provided such payments are made no later than the fifth anniversary of the Change in Control.

6. Distributions. Within 60 days after satisfaction or deemed satisfaction of the Performance Requirements:

- a. with respect to Shares earned under Sections 4 or 5, the Company will deliver to Grantee (or his or her beneficiary or beneficiaries) certificates for the Shares to which Grantee is entitled, subject to any applicable securities law restrictions; and
- b. with respect to Shares otherwise earned under this Agreement, the Company will issue to the Grantee the Shares to which Grantee is entitled, subject to any applicable securities law restrictions, and provided that the Grantee is in active Employment on the last day of the Performance Period.

For purposes of this Section 6, “earned” Shares are those Shares to which the Grantee is entitled based upon the Earned Performance Units (as described in Exhibit A) and the terms of Section 4 or 5, if applicable. Upon distribution of Shares, the recipient and all persons who might claim through him or her shall have no remaining interest under this Agreement.

7. Dividend and Voting Rights. The Grantee will not have any voting rights or be entitled to any dividends with respect to Performance Units unless and until the Performance Requirements are timely satisfied and Shares have actually been issued to the Grantee. No dividends or dividend equivalents will be paid to the Grantee based upon interests in the Performance Units during the Performance Period.

8. Designation of Beneficiary. By properly executing and delivering a Designation of Beneficiary Form to the Company, the Grantee may designate an individual or individuals as his or her beneficiary or beneficiaries with respect to his or her interest under this Agreement. If the Grantee fails to properly designate a beneficiary, his or her interests under this Agreement will pass to the person or persons in the first of the following classes (who shall be deemed a beneficiary or beneficiaries) in which there are any survivors: (i) spouse at the time of death; (ii) issue, *per stirpes*; (iii) parents; and (iv) the estate. Except as the Company may determine in its sole and exclusive discretion, a properly completed Designation of Beneficiary Form shall be

deemed to revoke all prior designations with respect to this Agreement (or, if the form so provides, the Plan) upon its receipt and approval by the designated representative of the Company.

9. Non-Transferability of Shares; Legends. Upon the acquisition of any Shares pursuant to this Agreement, if the Shares have not been registered under the Securities Act of 1933, as amended (the “Act”), they may not be sold, transferred or otherwise disposed of unless a registration statement under the Act with respect to the Shares has become effective or unless the Grantee establishes to the satisfaction of the Company that an exemption from such registration is available. The Shares will bear a legend stating the substance of such restrictions, as well as any other restrictions the Committee deems necessary or appropriate. In addition, the Grantee will make or enter into such written representations, warranties and agreements as the Committee may reasonably request in order to comply with applicable securities laws or this Agreement.

10. Effect of Corporate Reorganization or Other Changes Affecting Number or Kind of Shares. The provisions of this Agreement will be applicable to the performance units, Shares or other securities, if any, which may be acquired by the Grantee related to the Performance Units as a result of any dividend or other distribution (whether in the form of cash, Shares, other securities or other property), recapitalization, stock split, reverse stock split, reorganization, redesignation, reclassification, merger, consolidation, liquidation, split-up, reverse split, spin-off, combination, repurchase or exchange of Shares or other securities of the Company, issuance of warrants or other rights to purchase Shares or other securities of the Company or other similar corporate transaction or event. Subject to Section 3.4 of the Plan, the Committee may appropriately adjust the number and kind of performance units or Shares described in this Agreement to reflect such a change.

11. Plan Administration. The Plan is administered by the Committee, which has sole and exclusive power and discretion to interpret, administer, implement and construe the Plan and this Agreement. All elections, notices and correspondence relating to the Plan should be directed to the Secretary at:

Chart Industries, Inc.
2200 Airport Industrial Drive
Suite 100
Ball Ground, GA 30107
Attn.: Secretary

12. Notices. Any notice relating to this Agreement intended for the Grantee will be sent to the address appearing in the personnel records of the Company, its Affiliate or its Subsidiary. Either party may designate a different address in writing to the other. Any notice shall be deemed effective upon receipt by the addressee.

13. Termination of Agreement. This Agreement will terminate on the earliest of: (a) the last day of the Performance Period if the Performance Requirements are not satisfied; (b) the date of termination of the Grantee’s Employment for reasons referenced in Section 4(b) prior to the last day of the Performance Period; or (c) the date that Shares are delivered to the Grantee (or his or her beneficiary or beneficiaries). Any terms or conditions of this Agreement that the Company determines are reasonably necessary to effectuate its purposes will survive the termination of this Agreement. Without limiting the generality of the foregoing, the termination of this Agreement will not affect any obligation the Grantee may have, as determined by the Committee in its sole discretion, under any recoupment or “clawback” policy adopted by the Company.

14. Successors and Legal Representatives. This Agreement will bind and inure to the benefit of the Company and the Grantee and their respective heirs, beneficiaries, executors, administrators, estates, successors, assigns and legal representatives.

15. Integration. This Agreement, together with the Plan, constitutes the entire agreement between the Grantee and the Company with respect to the subject matter hereof. No terms of this Agreement shall be construed as amending the Plan in any respect. In the event of any conflict between the provisions of the Plan as in effect on the date hereof and the provisions of this Agreement, the provisions of the Plan shall govern, except with respect to Section 5 of this Agreement. This Agreement and the Plan may not be modified, amended, renewed or terminated, nor may any term, condition or breach of any term or condition be waived, except pursuant to the terms of the Plan or Section 23 below or by a writing signed by the person or persons sought to be bound by such modification, amendment, renewal, termination or waiver. Any waiver of any term, condition or breach thereof will not be a waiver of any other term or condition or of the same term or condition for the future, or of any subsequent breach.

16. Separability. In the event of the invalidity of any part or provision of this Agreement, such invalidity will not affect the enforceability of any other part or provision of this Agreement.

17. Incapacity. If the Committee determines that the Grantee is incompetent by reason of physical or mental disability or a person incapable of handling his or her property, the Committee may deal directly with or direct any payment to the guardian, legal representative or person having the care and custody of the incompetent or incapable person. The Committee may require proof of incompetence, incapacity or guardianship, as it may deem appropriate before making any payment. In the event of a payment, the Committee will have no obligation thereafter to monitor or follow the application of the amounts so paid. Payments pursuant to this paragraph shall completely discharge the Company with respect to such payments.

18. No Further Liability. The liability of the Company, its Affiliates and its Subsidiaries under this Agreement is limited to the obligations set forth herein and no terms or provisions of this Agreement shall be construed to impose any liability on the Company, its Affiliates, its Subsidiaries or the Committee in favor of any person or entity with respect to any loss, cost, tax or expense which the person or entity may incur in connection with or arising from any transaction related to this Agreement.

19. Section Headings. The section headings of this Agreement are for convenience and reference only and are not intended to define, extend or limit the contents of the sections.

20. No Right to Continued Employment. Nothing in this Agreement will be construed to confer upon the Grantee the right to continue in the employment or service of the Company, its Subsidiaries or Affiliates, or to be employed or serve in any particular position therewith, or affect any right which the Company, its Subsidiaries or an Affiliate may have to terminate the Grantee's employment or service with or without cause.

21. Governing Law. Except as may otherwise be provided in the Plan, this Agreement will be governed by, construed and enforced in accordance with the internal laws of the State of Delaware, without giving effect to its principles of conflict of laws.

22. Signature in Counterparts. This Agreement may be signed in counterparts, each of which shall be an original, with the same effect as if the signatures were upon the same instrument.

23. Amendment. The Committee may waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate this Agreement, but no such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination shall materially adversely affect the rights of the Grantee hereunder without the consent of the Grantee; *provided, however*, that the Grantee's consent shall not be required to an amendment that is deemed necessary or appropriate by the Company to ensure (a) compliance with (or exemption from) Section 409A of the Code; (b) compliance with the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 or any regulations promulgated thereunder (the "Dodd-Frank Act"); or (c) compliance with the terms of any recoupment or "clawback" policy the Company adopts to comply with the requirements of the Dodd-Frank Act or any regulations promulgated thereunder (even if the terms of that policy are broader than the requirements of the Dodd-Frank Act).

24. Withholding. The Grantee shall be required to pay to the Company or any Affiliate and the Company or any Affiliate shall have the right and is hereby authorized to withhold, any applicable withholding taxes in respect of the Award or payment of Shares thereunder, or any payment or transfer under or with respect to the Award or Shares and to take such other action as may be necessary in the opinion of the Committee to satisfy all obligations for the payment of such withholding taxes. Unless the Grantee makes other arrangements that are satisfactory to the Committee to cover the Company's or its Affiliate's withholding obligations, at any time that taxes are required to be withheld in connection with this Award, the Company shall withhold Shares from this Award with a Fair Market Value equal to the amount required to satisfy the minimum tax withholding obligations applicable to Grantee relating to this Award.

25. Section 409A of the Code. This Agreement, together with the Plan, constitutes the entire agreement between the parties with respect to the subject matter hereof. The parties intend that this Agreement be, at all relevant times, exempt from (or in compliance with) Section 409A of the Code and all other applicable laws, and this Agreement shall be so interpreted and administered. In addition to the general amendment rights of the Company with respect to the Plan, the Company specifically retains the unilateral right (but not the obligation) to make, prospectively or retroactively, any amendment to this Agreement or any related document as it deems necessary or desirable to more fully address issues in connection with exemption from (or in compliance with) Section 409A of the Code and other laws. In no event, however, shall this section or any other provisions of this Agreement be construed to require the Company to provide any gross-up for the tax consequences of any provisions of, or payments under, this Agreement. Except as may be provided in another agreement to which the Company is bound, the Company and its Affiliates shall have no responsibility for tax or legal consequences to the Grantee (or the Grantee's beneficiaries) resulting from the terms or operation of this Agreement or the Plan.

[Signature Page Follows]

By Grantee's signature and the signature of the Company's representative below, or by Grantee's acceptance of this Award through the Company's online acceptance procedure, this Agreement shall be deemed to have been executed and delivered by the parties hereto as of the Grant Date. Grantee hereby acknowledges that the treatment of the Performance Units upon a Change in Control, as set forth in Section 5 hereof, differs from and supersedes the treatment set forth in Section 12.2 of the Plan.

Grantee Chart Industries, Inc.

[[SIGNATURE]] By: [[SIGNATURE]]

Print Name: [[FIRSTNAME]] [[LASTNAME]] Its: [[TITLE]]

Date: [[SIGNATURE_DATE]] Date: [[SIGNATURE_DATE]]

EXHIBIT A
PERFORMANCE REQUIREMENTS

Performance Period

The Performance Period begins on January 1, 2022 and ends on December 31, 2024.

Performance Measure(s)

The Performance Measure is weighted 50% based on Return on Investment, and 50% based on Operating Income:

Return on Investment - Return on Investment (“ROI”) is determined by the following formula:

$$\frac{(\text{Operating Income}) \times (1 \text{ minus the Company's Effective Tax Rate})}{\text{Average Capital}^{\#} \text{ of last 2 years}}$$

[#]Capital = Total Shareholder’s Equity + Noncontrolling Interest + ST Debt + LT Debt minus Cash

Where,

- “Operating Income” is the sum of the last twelve months of Total Sales less Cost of Sales and Operating Expenses (excluding nonrecurring items, such as impairment charges and unusual loss or gain on disposal of assets);
- “Noncontrolling Interest” is, with respect to subsidiaries of the Company that are not fully owned by the Company, the portion of the equity of such subsidiaries that is not owned by the Company;
- “ST Debt” is debt that is due within one year;
- “LT Debt” is debt that is due longer than one year; and
- “Cash” is cash and cash equivalents.

For avoidance of doubt, debt shall include items customarily considered to be debt on the Company’s audited consolidated balance sheet. For example, the following items are considered to be debt on the Company’s consolidated balance sheet: short-term debt; current convertible notes; current portion of long-term debt; long-term debt; and convertible notes conversion feature.

Operating Income – The sum of the last twelve months of Total Sales less Cost of Sales and Operating Expenses (excluding nonrecurring items, such as impairment charges and unusual loss or gain on disposal of assets).

Measurement Period will be January 1, 2022 through December 31, 2022.

The second Measurement Period will be January 1, 2023 through December 31, 2023.

The third Measurement Period will be January 1, 2024 through December 31, 2024.

At the end of each Measurement Period, the Company’s ROI and Operating Income for such period will be calculated by the Committee. The calculations shall be based on the information provided in the Company’s audited consolidated financial statements, subject to any adjustments as described in this Exhibit A. Then, after the end of the third Measurement Period:

- the average annual ROI will be calculated by adding the ROI for each Measurement Period and dividing the sum by three (the “Average Annual ROI”); and
 - the average annual Operating Income will be calculated by adding the Operating Income for each Measurement Period and dividing the sum by three (the “Average Annual Operating Income”).
-

If the performance period is less than three years due to a Change in Control, the Committee shall calculate the ROI and Operating Income for the Measurement Period in which the Change in Control occurs up to the date immediately preceding the date of the Change in Control, with any adjustments necessary to account for the shorter period (including possible measurements of fractional year performance).

The Committee may, in the exercise of its discretion in good faith and in a manner consistent with the purposes of this Agreement, make such adjustments in calculating ROI and Operating Income of the Company (or any of its elements) as it deems necessary or appropriate to account for extraordinary, unusual or non-recurring events affecting the Company. Without limiting the foregoing, the Committee may make appropriate adjustments to ROI and Operating Income (or any of its elements) to reflect a merger, acquisition, disposition, spin-off, bankruptcy or liquidation, material impairment or restructuring charge, gain or loss on sale of non-operating assets, income or loss from discontinued operations, income or expenses related to the adoption or change of accounting principles, income or expenses related to material litigation and disputes, and any other extraordinary, unusual or non-recurring items affecting the Company deemed to be adjustments by the Committee.

Earned Performance Units

The Performance Units subject to the Performance Measure shall become earned performance units (the “Earned Performance Units”), as determined pursuant to the methodologies set forth below:

Earned Performance Units

ROI: The number of Earned Performance Units with respect to ROI (50% of the Performance Measure) is determined as follows:

- a. If the Company does not recognize any revenue for Big LNG during the Performance Period, then based on the Company’s Average Annual ROI during the Performance Period, determine the percentage of Earned Performance Units (the “Non-LNG Earned Percentage”) as follows:

<u>Non-LNG Earned Percentage</u>	<u>Average Annual ROI</u>
Maximum 200%	[MAXIMUM]%
Target 100%	[TARGET]%
Minimum 50%	[MINIMUM]%

“Big LNG” shall mean any liquefied natural gas (“LNG”) projects that are greater than five million tonnes per annum (“MTPA”)

If, however, the Company recognizes revenue for Big LNG during the Performance Period, then the Maximum, Target, and Minimum Average Annual ROI shall be adjusted as follows:

- Multiply the total revenue from Big LNG for each year of the Performance Period by [MARGIN FACTOR]% to determine the adjustment amount for each year of the Performance Period (the “Adjustment Amounts”),
- Add the respective Adjustment Amounts for each year of the Performance Period to the Operating Income forecasted for each year of the Performance Period (previously disclosed to the Compensation Committee as an input for the target Average Annual ROI), and adjust the target Average Annual ROI accordingly (using the other inputs for calculation of target Average Annual ROI as previously disclosed to the Compensation Committee).

Next, determine the percentage of Earned Performance Units (the “LNG Earned Percentage”) as follows:



LNG Earned Percentage **Average Annual ROI**

Maximum	200%	As adjusted pursuant to steps above
Target	100%	As adjusted pursuant to steps above
Minimum	50%	As adjusted pursuant to steps above

With respect to performance levels that fall between these percentiles, the Non-LNG Earned Percentage or the LNG Earned Percentage, as the case may be, will be interpolated on a straight-line basis. In no event will the Non-LNG Earned Percentage or the LNG Earned Percentage exceed 200%.

- b. If the Non-LNG Earned Percentage applies, determine the number of Earned Performance Units under the ROI metric as follows:

Non-LNG Earned Percentage *multiplied by* [(Number of Performance Units granted in award) *multiplied by* (50%)]

If, however, the LNG Earned Percentage applies, determine the number of Earned Performance Units under the ROI metric as follows:

LNG Earned Percentage *multiplied by* [(Number of Performance Units granted in award) *multiplied by* (50%)]

Operating Income: The number of Earned Performance Units with respect to Operating Income (50% of the Performance Measure) is determined as follows:

- a. If the Company does not recognize any revenue for Big LNG during the Performance Period, based on the Company's Average Annual Operating Income during the Performance Period, determine the percentage of Earned Performance Units (the "Non-LNG Earned Percentage") as follows:

Non-LNG Earned Percentage **Average Annual Operating Income**

Maximum	200%	[\$[MAXIMUM]]
Target	100%	[\$[TARGET]]
Minimum	50%	[\$[MINIMUM]]

If, however, the Company recognizes revenue for Big LNG during the Performance Period, then the Maximum, Target, and Minimum Average Annual Operating Income shall be adjusted as follows:

- Multiply the total revenue from Big LNG for each year of the Performance Period by [MARGIN FACTOR]% to determine the adjustment amount for each year of the Performance Period (the "Adjustment Amounts"),
- Add the respective Adjustment Amounts for each year of the Performance Period to the Operating Income amounts noted above, under sub-part a, to determine the new Maximum, Target, and Minimum Average Annual Operating Income figures.

Next, determine the percentage of Earned Performance Units (the "LNG Earned Percentage") as follows:

LNG Earned Percentage **Average Annual Operating Income**

Maximum	200%	As adjusted pursuant to steps above
---------	------	-------------------------------------

Target	100%	As adjusted pursuant to steps above
Minimum	50%	As adjusted pursuant to steps above

With respect to performance levels that fall between these percentiles, the Non-LNG Earned Percentage or the LNG Earned Percentage, as the case may be, will be interpolated on a straight-line basis. In no event will the Non-LNG Earned Percentage or the LNG Earned Percentage exceed 200%.

- b. If the Non-LNG Earned Percentage applies, determine the number of Earned Performance Units under the Operating Income metric as follows:

Non-LNG Earned Percentage *multiplied by* [(Number of Performance Units granted in award) *multiplied by* (50%)]

If, however, the LNG Earned Percentage Applies, determine the number of Earned Performance Units under the Operating Income metric as follows:

LNG Earned Percentage *multiplied by* [(Number of Performance Units granted in award) *multiplied by* (50%)]

Total Shareholder Return (“TSR”) Modifier

The final number of shares earned will equal the product of (1) the Earned Performance Units multiplied by (2) the “Comparative TSR Modifier”, determined in accordance with the table below.

Intermediate values between threshold and target and between target and max levels of Comparative TSR will be determined by straight-line interpolation.

	<u>Comparative TSR Modifier</u>	
	Comparative TSR Achieved	Comparative TSR Modifier*
Threshold	$x \leq 25\text{th percentile}$	0.8
Target	50th percentile	1.0
Max	$x \geq 75\text{th percentile}$	1.2

* In the event Absolute TSR for the applicable Performance Period is a negative percentage, no upward adjustment will be made on account of the Comparative TSR achieved (i.e., the Comparative TSR Modifier will be deemed to be no greater than 1.0), even if the Comparative TSR achieved over the same Performance Period would have otherwise provided for an upward adjustment.

All calculations and determinations shall be made by the Committee in its reasonable discretion. Actual percentile performance will be rounded to the nearest whole percentage point. The maximum potential number of shares earned is equal to 240% of the target number of Performance Share Units granted.

Definitions

- “**Comparative TSR**” shall mean, on a percentile basis, the Absolute TSR of the Company relative to the Absolute TSR of the component companies of the Comparator Group set forth below, in each case measured over the applicable Performance Period, as reasonably determined by the Committee.

- “**Absolute TSR**” shall mean, on a percentage basis, with respect to the Company or any component company of the Comparator Group set forth below, the price appreciation of such entity’s common stock plus the value of reinvested dividends, calculated using the average closing price for the 20 consecutive trading days ending immediately prior to the first day of the relevant period and the 20 consecutive trading days ending and including the last day of the relevant period, as reasonably determined by the Committee.

TSR Comparator Group*

All constituent companies of the Comparator Group as of the beginning of the Performance Period:

- Air Products and Chemicals, Inc.
- Baker Hughes Company
- Barnes Group Inc.
- ChampionX
- Chenier Energy, Inc.
- CIMC Enric Holdings Limited
- CNH Industrial N.V.
- EnPro Industries, Inc.
- ESCO Technologies, Inc.
- Exterran Corporation
- Franklin Electric Co., Inc.
- Harsco Corporation
- IDEX Corporation
- ITT Inc.
- New Fortress Energy LLC
- Nikkiso
- Plug Power Inc.
- SPX Corporation
- Worthington Industries, Inc.

* Comparator Group Adjustments:

- A Comparator Group company acquired by another company or that is delisted on all major stock exchanges shall be removed from the Comparator Group for the entire Performance Period as of the closing date of the acquisition or the effective date of delisting, as applicable.
- A Comparator Group company that acquires another company shall remain in the Comparator Group for the Performance Period.
- A Comparator Group company that files for bankruptcy, liquidation or reorganization during the Performance Period shall remain in the Comparator Group positioned below the lowest performing non-bankrupt Comparator Group company in reverse chronological order by bankruptcy date. This re-ranking would occur continually through the Performance Period.
- A Comparator Group company that moves out of its applicable stock index shall remain in the Comparator Group unless one of the above occurrences applies.
- All determinations with respect to the Comparator Group shall be made by the Committee in its reasonable discretion, including any removal of a component company from the Comparator Group and the relative ranking of the component companies in the Comparator Group, whether in the case of the scenarios described in clauses (a) through (d) of these guidelines or any other corporate transaction or scenario that the Committee deems appropriate to consider.

**CHART INDUSTRIES, INC.
2017 OMNIBUS EQUITY PLAN
RESTRICTED SHARE UNIT AGREEMENT**

THIS RESTRICTED SHARE UNIT AGREEMENT (the “Agreement”), is entered into as of this [[grantdatewords]] (the “Grant Date”), by and between Chart Industries, Inc., a Delaware corporation (the “Company”), and [[FIRSTNAME]] [[LASTNAME]] (the “Grantee”).

WITNESSETH:

WHEREAS, the Compensation Committee of the Board of Directors of the Company (the “Committee”) administers the Chart Industries, Inc. 2017 Omnibus Equity Plan (the “Plan”); and

WHEREAS, the Committee desires to provide the Grantee with Restricted Share Units under the Plan upon the terms and conditions set forth in this Agreement.

NOW, THEREFORE, the Company and the Grantee agree as follows:

1. **Definitions.** Unless the context otherwise indicates, the following words used herein shall have the following meanings wherever used in this Agreement:

- (a) “Cause” means, with respect to the Grantee, the meaning ascribed to such term in any employment, severance, or change in control agreement entered into by the Grantee. If the Grantee has not entered into any employment, severance, or change in control agreement with a definition of Cause, then “Cause” means (i) the Grantee’s willful failure to perform duties which, if curable, is not cured promptly, or in any event within ten (10) days, following the first written notice of such failure from the Company, (ii) the Grantee’s commission of, or plea of guilty or no contest to a (x) felony or (y) crime involving moral turpitude, (iii) willful malfeasance or misconduct by the Grantee which is demonstrably injurious to the Company or its Subsidiaries or Affiliates, (iv) material breach by the Grantee of any non-competition, non-solicitation or confidentiality covenants, (v) commission by the Grantee of any act of gross negligence, corporate waste, disloyalty or unfaithfulness to the Company which adversely affects the business of the Company or its Subsidiaries or Affiliates, or (vi) any other act or course of conduct by the Grantee which will demonstrably have a material adverse effect on the Company, a Subsidiary or Affiliate’s business.
 - (b) “Disability” or variations thereof means, with respect to the Grantee, a medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than 12 months which: (i) renders the Grantee unable to engage in substantial gainful activity or (ii) results in the Grantee receiving income replacement benefits for at least three months under an accident and health plan sponsored by the Grantee’s employer. Notwithstanding the foregoing, a Grantee will not be considered “Disabled” with respect to this Agreement unless his or her disability satisfies the requirements set forth in Section 409A of the Code.
 - (c) “Good Reason” means, with respect to the Grantee, the meaning ascribed to such term in any employment, severance, or change in control agreement entered into by the Grantee. If the Grantee has not entered into any employment, severance, or change in control agreement with a definition of Good Reason, then “Good Reason” means without the Grantee’s consent, (i) a material diminution in the
-

Grantee's authority, position or duties, or a material adverse change in reporting lines, (ii) Grantee's principal place of employment with the Company or Post-CIC Entity is relocated a material distance (which for this purpose shall be deemed to be more than 50 miles) from such Grantee's principal place of employment immediately prior to the Change in Control, (iii) any reduction in the Grantee's base salary and (excluding any general salary reduction affecting similarly situated employees of the Company as a result of a material adverse change in the Company's prospects or business), or (iv) the Grantee is excluded, following a Change in Control (other than through Grantee's voluntary action(s)), from full participation in any benefit plan or arrangement maintained for similarly situated employees of the Company or Post-CIC Entity, and such exclusion materially reduces the benefits that otherwise would have been available to the Grantee, in each case which is not cured within thirty (30) days following the Company's receipt of written notice from the Grantee describing the event constituting Good Reason.

- (d) "Retirement" or variations thereof means, with respect to the Grantee, a voluntary termination of Employment with the Company, its Subsidiaries and its Affiliates, either (i) after attaining age 60 and completing 10 years of service with such entities or (ii) after attaining age 65 and completing 5 years of service with such entities.

Notwithstanding this Section, and unless otherwise specified in the Agreement, capitalized terms shall have the meanings attributed to them under the Plan.

2. Grant of Restricted Share Units. As of the Grant Date, the Company grants to the Grantee, upon the terms and conditions set forth in this Agreement, ([[SHARESGRANTED]]) Restricted Share Units (the "RSUs"). The Restricted Share Units are granted in accordance with, and subject to, all the terms, conditions and restrictions of the Plan, which is hereby incorporated by reference in its entirety. The RSUs give the Grantee the right to receive one (1) Share for each RSU subject to the satisfaction of the vesting requirements set forth in this Agreement. In the event of a conflict between any term or provision contained herein and a term or provision of the Plan, the applicable terms and provisions of the Plan will govern, except with respect to Section 4(d) of this Agreement. The Grantee irrevocably agrees to, and accepts, the terms, conditions and restrictions of the Plan and this Agreement on his or her own behalf and on behalf of any beneficiaries, heirs, legatees, successors and assigns.

3. Restrictions on Transfer of Restricted Share Units. The Grantee and his or her beneficiaries, heirs, legatees, successors and assigns cannot sell, transfer, assign, pledge, hypothecate or otherwise directly or indirectly dispose of the Restricted Share Units (whether with or without consideration and whether voluntarily or involuntarily or by operation of law) or any interest therein.

4. Restriction Period.

- (a) Service-Based. Subject to the Grantee's continued Employment with the Company or its Affiliates as of such dates (except as otherwise provided herein with respect to death, Disability, Retirement or a Change in Control), the RSUs, together with any dividend equivalents credited pursuant to Section 7(b) below, shall Vest with respect to [[VESTING PERCENTAGE]] of the Shares covered by the Award on each of the [[VESTING YEARS]] anniversaries of the Grant Date (each, a "Vesting Date").
- (b) Retirement. If the Grantee's Employment terminates as a result of Retirement, the vesting provisions set forth in Sections 4(a) and 24 of this Agreement shall continue to apply and the Participant will have continued vesting of unvested RSUs

that would have otherwise vested in the year following the year in which the Participant retires. The remaining unvested RSUs are forfeited.

- (c) Death or Disability. If the Grantee dies or the Grantee becomes Disabled, the RSUs together with any dividend equivalents credited pursuant to Section 7(b) below, shall, to the extent not then Vested and not previously forfeited, immediately become fully Vested as of the date of the Grantee's death or Disability.
- (d). Change in Control.
 - (i) Company Remains Surviving Entity or Awards Assumed by Successor.
 - (A) Upon the occurrence of a Change in Control in which either (i) the Company remains the surviving entity or (ii) the Company is not the surviving entity, but the RSUs are Assumed (as defined in Section 4(d)(i)(C) below) by the entity (or any successor or parent thereof) that effects such change in control (the "Post-CIC Entity"), any RSU granted prior to the Change in Control shall continue to vest in accordance with the terms of this Agreement unless, during the two-year period commencing on the date of the Change in Control:
 - (1) the Grantee's employment or service is involuntarily terminated by the Company or the Post-CIC Entity, as applicable, for reasons other than for Cause; or
 - (2) the Grantee Terminates Grantee's employment or service for Good Reason.
 - (B) If a Grantee's employment or service is terminated as described in Section 4(d)(i)(A)(1) or (2) above ("Protected Termination"), any restrictions that apply to the RSUs shall lapse; provided, that if Grantee intends to incur a Protected Termination of Grantee's employment or service for Good Reason, Grantee must:
 - (1) provide the Company with a written notice of his or her intent to incur a Protected Termination of employment or service for Good Reason within sixty (60) days after the Grantee becomes aware of the circumstances giving rise to Good Reason; and
 - (2) allow the Company thirty (30) days to remedy such circumstances to the extent curable.
 - (C) For purposes of this Section 4, an Award shall be considered assumed by the Post-CIC Entity ("Assumed") if all of the following conditions are met:
 - (1) RSUs are converted into replacement awards covering a number of Shares of the Post-CIC Entity, as determined in a manner substantially similar to how the same number of Shares would be treated in the Change in Control transaction; provided that, to the extent that any portion of the consideration received by holders of Shares in the Change in Control transaction is not in the form of the common stock of the Post-CIC Entity, the number of shares covered by the replacement awards shall be based on the average of the high

and low selling prices of the common stock of such Post-CIC Entity on the established stock exchange on the trading day immediately preceding the date of the Change in Control;

- (2) the replacement awards contain provisions for scheduled vesting and treatment on Protected Termination of employment (including the definitions of Cause and Good Reason, if applicable) that are no less favorable to the Grantee than this Agreement, and all other terms of the replacement awards (other than the security and number of shares represented by the replacement awards) are substantially similar to, or more favorable to the Grantee than, the terms of this Agreement; and
- (3) the security represented by the replacement awards, if any, is of a class that is publicly held and widely traded on an established stock exchange.

- (ii) Awards Not Assumed by Successor. Upon the occurrence of a Change in Control in which the Company is not the surviving Company, if this Agreement is not Assumed by the Post-CIC Entity, Grantee shall receive the RSUs that Grantee would have received in the Change in Control transaction had Grantee been, immediately prior to such transaction, a holder of the number of Shares equal to the number of RSUs, payable at the same time as consideration is paid to the holders of Shares in connection with the Change in Control, provided such payments are made no later than the fifth anniversary of the Change in Control.

5. Forfeiture. If the Committee determines in its sole and exclusive discretion that the Grantee's Employment with the Company, its Subsidiaries and Affiliates has terminated prior to the Vesting Dates for reasons other than death, Disability or Retirement or prior to the occurrence of a Change in Control in Section 4(d) above, the Grantee will forfeit any unvested RSUs, together with any dividend equivalents credited pursuant to Section 7(b) below, and any right to receive Shares under this Agreement with respect to such unvested RSUs and the Grantee will have no further interests under this Agreement.

6. Payment and Issuance of Common Shares. The Company will deliver to the Grantee (or his or her beneficiary or beneficiaries) the Vested Shares to which the Grantee is then entitled under this Agreement (including any Shares to which the Grantee is entitled as a result of dividend equivalents credited pursuant to Section 7(b) below) free and clear of any restrictions (except any applicable securities law restrictions) in a lump sum no later than 60 days following the first to occur of (a "Payment Date"): (a) an applicable Vesting Date under Section 4(a) above (which delivery schedule shall also apply to any Grantee who has Retired), (b) the Grantee's death, (c) the Grantee's Disability or (d) a Change in Control of the Company. Any otherwise Vested fractional Shares remaining as of a Payment Date shall be eliminated and cancelled.

7. Stockholder Rights.

- (a) Voting Rights. The Grantee will not have any Stockholder rights, including voting rights, with respect to the RSUs unless and until Shares have actually been issued to the Grantee.
- (b) Dividend Equivalents. If on any date prior to a Payment Date the Company shall pay any cash dividend on the Shares (with a record date after the Grant Date), then the Company shall credit on the books and records of the Company and the Grantee

shall be entitled to receive, on the Payment Date, a number of Shares (rounded down to the next whole Share) equal to: (a) the aggregate number of RSUs credited to the Grantee as of the related dividend record date, multiplied by (b) the per Share amount of such cash dividend and divided by (c) the Fair Market Value of a Share on the dividend record date. In the case of any dividend declared on Shares (with a record date after the Grant Date) that is payable in the form of Shares, the Company shall credit to the Grantee's bookkeeping account and the Grantee shall be granted, as of the Payment Date, a number of additional Shares (rounded down to the next whole Share) equal to: (x) the aggregate number of RSUs credited to the Grantee as of the related dividend record date, multiplied by (y) the number of Shares (including any fraction thereof) payable as a dividend on a Share.

8. Designation of Beneficiary. By properly executing and delivering a Designation of Beneficiary Form to the Company, the Grantee may designate an individual or individuals as his or her beneficiary or beneficiaries with respect to his or her interest under this Agreement. If the Grantee fails to properly designate a beneficiary, his or her interests under this Agreement will pass to the person or persons in the first of the following classes (who shall be deemed a beneficiary or beneficiaries) in which there are any survivors: (i) spouse at the time of death; (ii) issue, *per stirpes*; (iii) parents; and (iv) the estate. Except as the Company may determine in its sole and exclusive discretion, a properly completed Designation of Beneficiary Form shall be deemed to revoke all prior designations with respect to this Agreement (or, if the form so provides, the Plan) upon its receipt and approval by the designated representative of the Company.

9. Non-Transferability of Shares; Legends. Upon the acquisition of any Shares pursuant to this Agreement, if the Shares have not been registered under the Securities Act of 1933, as amended (the "Act"), they may not be sold, transferred or otherwise disposed of unless a registration statement under the Act with respect to the Shares has become effective or unless the Grantee establishes to the satisfaction of the Company that an exemption from such registration is available. The Shares will bear a legend stating the substance of such restrictions, as well as any other restrictions the Committee deems necessary or appropriate. In addition, the Grantee will make or enter into such written representations, warranties and agreements as the Committee may reasonably request in order to comply with applicable securities laws or this Agreement.

10. Effect of Corporate Reorganization or Other Changes Affecting Number or Kind of Shares. The provisions of this Agreement will be applicable to the RSUs, Shares or other securities, if any, which may be acquired by the Grantee related to the RSUs as a result of any dividend or other distribution (whether in the form of cash, Shares, other securities or other property), recapitalization, stock split, reverse stock split, reorganization, redesignation, reclassification, merger, consolidation, liquidation, split-up, reverse split, spin-off, combination, repurchase or exchange of Shares or other securities of the Company, issuance of warrants or other rights to purchase Shares or other securities of the Company or other similar corporate transaction or event. Subject to Section 3.4 of the Plan, the Committee may appropriately adjust the number and kind of RSUs or Shares described in this Agreement to reflect such a change.

11. Plan Administration. The Plan is administered by the Committee, which has sole and exclusive power and discretion to interpret, administer, implement and construe the Plan and this Agreement. All elections, notices and correspondence relating to the Plan should be directed to the Secretary at:

Chart Industries, Inc.
2200 Airport Industrial Drive
Suite 100
Ball Ground, GA 30107

Attn.: Secretary

12. Notices. Any notice relating to this Agreement intended for the Grantee will be sent to the address appearing in the personnel records of the Company, its Affiliate or its Subsidiary. Either party may designate a different address in writing to the other. Any notice shall be deemed effective upon receipt by the addressee.

13. Termination of Agreement. This Agreement will terminate on the earliest of: (a) the last day of the Restriction Period under Section 4 above; (b) the date of termination of the Grantee's Employment for reasons referenced in Section 5 above; or (c) the date that Shares are delivered to the Grantee (or his or her beneficiary or beneficiaries). Any terms or conditions of this Agreement that the Company determines are reasonably necessary to effectuate its purposes will survive the termination of this Agreement. Without limiting the generality of the foregoing, the termination of this Agreement will not affect any obligation the Grantee may have, as determined by the Committee in its sole discretion, under any recoupment or "clawback" policy adopted by the Company.

14. Successors and Legal Representatives. This Agreement will bind and inure to the benefit of the Company and the Grantee and their respective heirs, beneficiaries, executors, administrators, estates, successors, assigns and legal representatives.

15. Integration. This Agreement, together with the Plan, constitutes the entire agreement between the Grantee and the Company with respect to the subject matter hereof. No terms of this Agreement shall be construed as amending the Plan in any respect. In the event of any conflict between the provisions of the Plan as in effect on the date hereof and the provisions of this Agreement, the provisions of the Plan shall govern, except with respect to Section 4(d) of this Agreement. This Agreement and the Plan may not be modified, amended, renewed or terminated, nor may any term, condition or breach of any term or condition be waived, except pursuant to the terms of the Plan or Section 23 below or by a writing signed by the person or persons sought to be bound by such modification, amendment, renewal, termination or waiver. Any waiver of any term, condition or breach thereof will not be a waiver of any other term or condition or of the same term or condition for the future, or of any subsequent breach.

16. Separability. In the event of the invalidity of any part or provision of this Agreement, such invalidity will not affect the enforceability of any other part or provision of this Agreement.

17. Incapacity. If the Committee determines that the Grantee is incompetent by reason of physical or mental disability or a person incapable of handling his or her property, the Committee may deal directly with or direct any payment to the guardian, legal representative or person having the care and custody of the incompetent or incapable person. The Committee may require proof of incompetence, incapacity or guardianship, as it may deem appropriate before making any payment. In the event of a payment, the Committee will have no obligation thereafter to monitor or follow the application of the amounts so paid. Payments pursuant to this paragraph shall completely discharge the Company with respect to such payments.

18. No Further Liability. The liability of the Company, its Affiliates and its Subsidiaries under this Agreement is limited to the obligations set forth herein and no terms or provisions of this Agreement shall be construed to impose any liability on the Company, its Affiliates, its Subsidiaries or the Committee in favor of any person or entity with respect to any loss, cost, tax or expense which the person or entity may incur in connection with or arising from any transaction related to this Agreement.

19. Section Headings. The section headings of this Agreement are for convenience and reference only and are not intended to define, extend or limit the contents of the sections.

20. No Right to Continued Employment. Nothing in this Agreement will be construed to confer upon the Grantee the right to continue in the employment or service of the Company, its Subsidiaries or Affiliates, or to be employed or serve in any particular position therewith, or affect any right which the Company, its Subsidiaries or an Affiliate may have to terminate the Grantee's employment or service with or without cause.

21. Governing Law. Except as may otherwise be provided in the Plan, this Agreement will be governed by, construed and enforced in accordance with the internal laws of the State of Delaware, without giving effect to its principles of conflict of laws.

22. Signature in Counterparts. This Agreement may be signed in counterparts, each of which shall be an original, with the same effect as if the signatures were upon the same instrument.

23. Amendment. The Committee may waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate this Agreement, but no such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination shall materially adversely affect the rights of the Grantee hereunder without the consent of the Grantee; *provided, however*, that the Grantee's consent shall not be required to an amendment that is deemed necessary or appropriate by the Company to ensure (a) compliance with (or exemption from) Section 409A of the Code; (b) compliance with the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 or any regulations promulgated thereunder (the "Dodd-Frank Act"); or (c) compliance with the terms of any recoupment or "clawback" policy the Company adopts to comply with the requirements of the Dodd-Frank Act or any regulations promulgated thereunder (even if the terms of that policy are broader than the requirements of the Dodd-Frank Act).

24. Withholding and Taxes. The Grantee shall be required to pay to the Company or any Affiliate and the Company or any Affiliate shall have the right and is hereby authorized to withhold, any applicable withholding taxes in respect of the Award or payment of Shares thereunder, or any payment or transfer under or with respect to the Award or Shares and to take such other action as may be necessary in the opinion of the Committee to satisfy all obligations for the payment of such withholding taxes. Unless the Grantee makes other arrangements that are satisfactory to the Committee to cover the Company's or its Affiliate's withholding obligations, at any time that taxes are required to be withheld in connection with this Award, the Company shall withhold Shares from this Award with a Fair Market Value equal to the amount required to satisfy the minimum tax withholding obligations applicable to Grantee relating to this Award.

The delivery of Shares under this Agreement shall be accelerated to pay any Federal Insurance Contributions Act ("FICA") tax imposed under Sections 3101, 3121(a), and Section 3121(v)(2) of the Code on compensation deferred under the Plan (the "FICA Amount"), as well as to pay the income tax at source on wages imposed under Section 3401 of the Code or the corresponding withholding provisions of applicable state, local, or foreign tax laws as a result of the payment of the FICA Amount, and to pay the additional income tax at source on wages attributable to the pyramiding Section 3401 of the Code wages and taxes. However, the total payment accelerated under this Section 24 acceleration provision must not exceed the number of whole Shares (rounded up for any fractional Shares) with a Fair Market Value equal to the aggregate of the FICA Amount and the income tax withholding related to such FICA Amount. The first delivery of Shares made with respect to the RSUs that occurs after the acceleration of Shares provided for in this paragraph shall be reduced by the number of Shares that were so accelerated.

25. Section 409A of the Code. This Agreement, together with the Plan, constitutes the entire agreement between the parties with respect to the subject matter hereof. The parties intend that this Agreement be, at all relevant times, compliant with (or exempt from) Section 409A of the Code and all other applicable laws, and, if the Grantee's interests hereunder are subject to Section 409A of the Code, this Agreement shall be so interpreted and administered. In addition to the general amendment rights of the Company with respect to the Plan, the Company specifically retains the unilateral right (but not the obligation) to make, prospectively or retroactively, any amendment to this Agreement or any related

document as it deems necessary or desirable to more fully address issues in connection with compliance with (or exemption from) Section 409A of the Code and other laws. In no event, however, shall this section or any other provisions of this Agreement be construed to require the Company to provide any gross-up for the tax consequences of any provisions of, or payments under, this Agreement. Except as may be provided in another agreement to which the Company is bound, the Company and its Affiliates shall have no responsibility for tax or legal consequences to the Grantee (or the Grantee's beneficiaries) resulting from the terms or operation of this Agreement or the Plan.

26. Six-Month Delay in Payment. Notwithstanding anything in this Agreement to the contrary, if at the time of the Grantee's termination of Employment with the Company, the Grantee's interests hereunder are subject to Section 409A of the Code and the Grantee is a "specified employee" as defined in Section 409A of the Code, and the deferral of the commencement of any payments or benefits otherwise payable hereunder as a result of such termination of Employment is necessary in order to prevent the imposition of any accelerated or additional tax under Section 409A of the Code, then the Company will defer the commencement of the payment of any such payments or benefits hereunder (without any reduction in such payments or benefits ultimately paid or provided to the Grantee) until the date that is six (6) months following the Grantee's termination of Employment with the Company (or the earliest date as is permitted under Section 409A of the Code).

By Grantee's signature and the signature of the Company's representative below, or by Grantee's acceptance of this Award through the Company's online acceptance procedure, this Agreement shall be deemed to have been executed and delivered by the parties hereto as of the Grant Date. Grantee hereby acknowledges that the treatment of the RSUs upon a Change in Control, as set forth in Section 4(d) hereof, differs from and supersedes the treatment set forth in Section 12.2 of the Plan.

Grantee Chart Industries, Inc.

[[SIGNATURE]] By: [[SIGNATURE]]

Print Name: [[FIRSTNAME]] [[LASTNAME]] Its: [[TITLE]]

Date: [[SIGNATURE_DATE]] Date: [[SIGNATURE_DATE]]

**SUBSIDIARIES OF THE COMPANY
AND JURISDICTION OF INCORPORATION OR ORGANIZATION**

AdEdge Exports, Inc.	Georgia
AdEdge Holdings, LLC	Georgia
AdEdge India Water Technologies Private Limited*	India
AdEdge Water Technologies, LLC	Georgia
BlueInGreen, LLC	Arkansas
Chart Asia Investment Company Limited	Hong Kong
Chart Asia, Inc.	Delaware
Chart Australia Pty Ltd	Australia
Chart Cryogenic Distribution Equipment (Changzhou) Company Limited*	China
Chart Cryogenic Engineering Systems (Changzhou) Co., Ltd.	China
Chart D&S India Private Limited	India
Chart Energy & Chemicals, Inc.	Delaware
Chart Ferox, a.s.	Czech Republic
Chart Germany GmbH	Germany
Chart Inc.	Delaware
Chart Industries (Gibraltar) Limited	Gibraltar
Chart Industries Japan Co., Ltd.	Japan
Chart Industries Luxembourg S.à r.l.	Luxembourg
Chart Industries Limited	United Kingdom
Chart Industries (Malaysia) Sdn. Bhd.	Malaysia
Chart International Holdings, Inc.	Delaware
Chart International, Inc.	Delaware
Chart Italy Holdings S.r.l.	Italy
Chart Latin America S.A.S.	Colombia
Chart Lifecycle, Inc.	Delaware
Chart S.à r.l & Co. KG	Germany
Cofimco Industrial Fans India Private Ltd.****	India
Cofimco International (Shanghai) Trading Co, Inc.	China
Cofimco S.r.l.	Italy
Cryogenic Gas Technologies, Inc.	Pennsylvania
Cryo Diffusion S.A.S.	France
Cryo-Lease, LLC	Florida
Earthly Labs, LLC	Delaware
Fema S.r.l.	Italy
Flow Instruments & Engineering GmbH	Germany
GOFA Gocher Fahrzeugbau GmbH	Germany
GTC of Clarksville, LLC	Delaware
Hetsco, Inc.	Delaware
Hetsco Holdings, Inc.	Delaware
Hudson-Cofimco Limited	Hong Kong
Hudson Heat Transfer International, Inc.	Panama
Hudson Parent Corporation	Delaware
Hudson Products Corporation	Texas
Hudson Products de Mexico, S.A. de C.V.*	Mexico
Hudson Products Holdings Inc.	Delaware
Hudson Products Holdings Cooperatief UA	Netherlands
Hudson Products S.r.l.	Italy

Industrie Meccaniche di Bagnolo S.r.l.
L.A. Turbine
Nanjing New Metallurgy Electric Engineering Co., Ltd.**
Prefontaine Properties, Inc.
PT. Thermax***
RCHPH Holdings, Inc.
Skaff, LLC
Skaff Cryogenics, Inc.
Sustainable Energy Solutions, Inc.
Thermax, Inc.
VCT Vogel GmbH
VRV Asia Pacific Private Limited
VRV S.r.l.
VRV Services S.r.l.

Italy
California
China
New Hampshire
Indonesia
Delaware
Delaware
New Hampshire
Utah
Massachusetts
Germany
India
Italy
Italy

*50% of equity interests owned indirectly by the Company.

**80% of equity interests owned indirectly by the Company.

***95% of equity interests owned indirectly by the Company.

****99.8% of equity interests owned indirectly by the Company.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-232049 on Form S-3 and Registration Statement Nos. 333-162740, 333-183031, and 333-219509 on Form S-8 of our reports dated February 24, 2022, relating to the financial statements of Chart Industries, Inc., and the effectiveness of Chart Industries, Inc.'s internal control over financial reporting, appearing in this Annual Report on Form 10-K of Chart Industries, Inc. for the year ended December 31, 2021.

/s/ Deloitte & Touche LLP

Atlanta, Georgia

February 24, 2022

CERTIFICATION

I, Jillian C. Evanko, certify that:

1. I have reviewed this Annual Report on Form 10-K of Chart Industries, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. I am responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under my supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to me by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under my supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report my conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2022

/s/ Jillian C. Evanko

Jillian C. Evanko

Chief Executive Officer and President

CERTIFICATION

I, Joseph R. Brinkman, certify that:

1. I have reviewed this Annual Report on Form 10-K of Chart Industries, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. I am responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under my supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to me by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under my supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report my conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2022

/s/ Joseph R. Brinkman

Joseph R. Brinkman
Vice President and Chief Financial Officer

**Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)**

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of Chart Industries, Inc., a Delaware corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

- a. The Annual Report on Form 10-K for the period ended December 31, 2021 of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- b. The information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company as of, and for, the periods presented in the Form 10-K.

Dated: February 24, 2022

/s/ Jillian C. Evanko

Jillian C. Evanko

Chief Executive Officer and President

This written statement accompanies the Form 10-K pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not, except to the extent required by the Sarbanes-Oxley Act of 2002, be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

**Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)**

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of Chart Industries, Inc., a Delaware corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

- a. The Annual Report on Form 10-K for the period ended December 31, 2021 of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- b. The information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company as of, and for, the periods presented in the Form 10-K.

Dated: February 24, 2022

/s/ Joseph R. Brinkman

Joseph R. Brinkman
Vice President and Chief Financial Officer

This written statement accompanies the Form 10-K pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not, except to the extent required by the Sarbanes-Oxley Act of 2002, be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.