POWERHOUSE ENERGY GROUP PLC

COMPANY NUMBER: 03934451

Annual Report and Financial Statements
For The Year Ended 31 December 2019

COMPANY INFORMATION

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Forward-looking statements

This report includes forward-looking statements. Whilst these forward-looking statements are made in good faith, they are based upon the information available to Powerhouse Energy Group PLC at the date of this report and upon current expectations, projections, market conditions and assumptions about future events. These forward-looking statements are subject to risks, uncertainties and assumptions about the Company and should be treated with an appropriate degree of caution.

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HIGHLIGHTS

Commercial Activities

- Collaboration contract signed with Peel to develop Distributed Modular Generation (DMG®) at Protos and ten further sites. Peel have committed that the DMG process will be the key component and a cornerstone of their "Plastic Parks".
- The relationship with Peel for the development of multiple sites across the UK has added to the value proposition for end customers of the DMG Technology.
- In December 2019 a heads of terms was entered into for an all paper acquisition based on a 60:40 valuation premise of the UK development partner Waste2Tricity Limited (W2T). Post year end, in June 2020, Company entered into a binding agreement and issued the Circular to shareholders setting out the logic behind the acquisition of W2T.
- Financing for pipeline of projects led by Peel Environmental and Waste2Tricity (W2T).
- Initiated tenders for the project engineering definition phase and potential EPC execution with a number of quality assured delivery contractors for the first application project at Protos.
- Continued negotiation with major overseas energy and engineering companies for exclusive regional representation in a number of international regions.

Progress to First Commercial Operation

- Contract announced for initial engineering programme for first DMG application enacted by W2T.
- Contracts were signed introducing Peel into the development at a site on Peel's Protos Energy Park in Cheshire as a waste plastic processing facility generating electricity and hydrogen.
- Engineering scope for Protos increased to accommodate production of up to 2 tpd of hydrogen from 35 tonnes of regenerated plastic waste feedstock.
- Planning submission completed by Peel for Protos Energy Park in Cheshire, followed by successful community engagement meetings and council briefings.
- Post year-end, in March 2020 grant of planning permission by Cheshire West and Cheshire Council.
- Post year-end saw the announcement of the commercial terms for Protos and future projects under the Peel Collaboration Agreement resulting in Peel agreeing to act as the developer of Protos and ten further DMG sites in the UK.
- Company will receive an annual license fee of £500,000 for each DMG plant that Peel develops.
- Post year-end Peel agreed an Option to enter into an exclusive agreement for the development of DMG Technology in the UK, once W2T has been acquired by the Company. On exercise of the option, the Company will be due £500,000 as a one-off fee.

HIGHLIGHTS

Technology Development

- Engineering development continued and the DMG waste regeneration design capacity of generic equipment increased to 40 tonnes per day.
- Continued activity in technology risk management allowing removal of significant technology risk items through engineering activities with component suppliers.
- The laboratory scale unit became operational and added to Research Demonstrator capability with the Company broadening capability of third party feedstock trialing, laboratory services and consulting services.

Organisation and Growth

- Appointment of David Ryan as CEO, with strategic focus on activities associated with first application and necessary early commercial priorities.
- Post year end Powerhouse announced the appointment of Myles Kitcher from Peel, as a non-executive director of the Company.

Financial Performance

- Company has continued its focus on prudent cash management during the year with a strategy to avoid dilution via new equity raises.
- Aligned to this strategy the Company undertook a wide operational review to reduce monthly overheads by more than 25% and primarily focus on the immediate development programme.
- All Directors waived salary payments from April 2019 to extend the Company’s cash through the entire first application project period.
- Engineering contractors and service providers demonstrated their commitment to Powerhouse though accepting fees in equity.
- Research and Development grants and VAT refunds helped keep cash flow positive during the year.
- Post year end, Powerhouse has received £100,000 from engineering work and expects income arising from contracts in hand to be of the order of £60,000, related to Protos project work.
- Post year end, the exercise of warrants issued in 2018 has enhanced cash by circa £285,000.

Dr. Cameron Davies, Chairman of Powerhouse Energy PLC, said

“2019 has been a transformative year for Powerhouse with the first commercial plant using our DMG technology now under development. It is gratifying to see a British technology company with a truly global application move into its commercial phase while helping to resolve a major problem in today’s world, namely the need to reduce the volume of waste plastic and simultaneously producing hydrogen in the community to progress the expansion of the hydrogen economy.

The Board is enthusiastic about the prospects for the business as we move forward with Peel, our exclusive development partner in the UK, and also create a robust sustainable base of international licensing revenue through the establishment of similar relationships with blue-chip industrial partners across multiple overseas markets.”

CHAIRMAN'S STATEMENT

I am pleased to present Powerhouse Energy Group's 2019 Annual Report, which demonstrates the significant progress we have made under the leadership of our new Chief Executive Officer, David Ryan.

Our team has focused its efforts on getting the first commercial scale distributed modular generation (DMG®) plant built in the recently established low carbon energy and hydrogen cluster in the North West of England. The plant will use Powerhouse's groundbreaking DMG technology to produce syngas, electricity and hydrogen from unrecyclable plastic waste. This plant will , subject to financing, be built at Peel L&P Environmental's Protos Energy Park where, in March 2020, Cheshire West and Chester Council granted planning permission for Powerhouse's first plastics to hydrogen facility.

Post year end, Peel Environmental agreed to enter an exclusive agreement for the roll out of DMG technology in the UK with a ten-site pipeline to follow Protos. As a condition of this arrangement, Powerhouse has to acquire Waste2Tricity Limited (W2T) which had the exclusive rights to the distribution of DMG technology in the UK. Powerhouse will then have the rights to licence and develop plants which will make important contributions to the efforts by wider society to reverse the damage being caused to the oceans and rivers by unrecyclable plastic waste. At this time of global uncertainty, we believe an important role of business is to seek innovative solutions and create opportunities to reduce environmental harm profitably.

Our relationship with Peel and its associated contracts gives clarity of the delivery of the DMG process to it's end customers in the energy, waste management and financial communities. Peel's strategy for "Plastic Parks" across the UK is aligned to our own ambitions and we look forward to delivering this exciting vision together.

Our DMG technology has seen continuing and substantial interest internationally and we are carefully filtering potential opportunities to engage exclusively with experienced project developers and maximize our future licensing revenues.

I would like to thank our CEO and our team for their hard work during the year paving the way for future rapid growth of the Company as new plants are rolled out to meet the increasing demand for Powerhouse's plastic waste to energy technology, engineering services and licensing.

I would also like to thank our shareholders who have been very supportive of our efforts to keep expenditure on a tight rein in order to concentrate on building the first of many DMG plants.

In conclusion, 2019 was a year of significant progress for the Company against a background where the role of hydrogen, in the UK Government's ambition to achieve net zero carbon emissions by 2050, has been emphasised as one important step towards fuel cell powered heavy goods transport.

Dr Cameron Davies
Non-Executive Chairman
29 June 2020

STRATEGIC REPORT

The strategic report section addresses the Directors' management of the Company and contains certain forward-looking statements. These statements are made by the Directors in good faith based on the information available to them up to the time of the report preparation and approval and such statements should be treated with caution as they address uncertainties.

Business Strategy

Powerhouse Energy Group PLC ("Powerhouse" or 'the Company") designs, delivers and licenses Distributed Modular Generation (DMG®) technology, a proprietary design which converts calorific waste streams into synthetic gas (syn-gas), a valuable intermediate product a that can be used for power generation and as a source of hydrogen for fuel cell vehicles.

The process converts non-recyclable waste plastic or end of life tyres to produce clean syn-gas into these 'end of waste' products:

- Hydrogen
- Electrical power and heat
- Natural gas replacement
- Chemical feedstocks.

Powerhouse Energy will license the proprietary control systems with associated paid services for specific client feedstock analysis and laboratory services, engineering during project development, and then operational support services when projects are in operation.

Growth Through Partnership

In the United Kingdom Powerhouse Energy will be partnered by Peel Environmental as the exclusive development partner and revenues will be principally from operating licenses, with project services paid for under contracted fees arrangements.

For international sales, Powerhouse anticipates securing international exclusivity contracts with major energy and waste management companies resulting in license fees and sales revenues being paid on a country-by-country basis.

In the longer term, Powerhouse will endeavour to increase its portion of project revenues potentially expanding licensing, engineering and management services into manufacturing and delivery with local partners, such expansion will be prudent in line with financial capability.

Testing, Laboratory and Customer Field Trial Services

At our Thornton Energy Park facility, the Company carries out feedstock testing on the Research Demonstrator and associated laboratory equipment to undertake analytical services for potential customers. The results can be used in chemical engineering modelling carried out by Powerhouse. In the longer term and appropriate to the Company's growth, the testing capability will be extended to use a broader range of waste feedstocks and of potential products from the process.

Acquisition of Waste2Tricity

On 26 June 2020 Powerhouse issued a Circular describing the proposed acquisition of Waste2Tricity. The non-cash transaction uses Powerhouse shares to acquire the whole of the issued share capital of W2T, which has been Powerhouse's project developer and marketing company both in the UK and internationally. The all paper acquisition is based on a valuation ratio of 60% Powerhouse to 40% W2T, with the vast majority of Powerhouse shares issued in exchange for W2T shares locked into a no-sale agreement for a minimum of a year. The acquisition is subject to approval of a waiver of the obligation of the Concert Party to make a Rule 9 offer under the Takeover Code and is described in the Circular and is to be voted on at the EGM to be held on 14 July 2020.

The Board's Independent Directors unanimously recommended that the acquisition be approved by Shareholders. David Ryan, the Company's CEO, has a conflict of interest in this deal and has been absented from the Board's decision making and voting on this.

Post the acquisition of W2T, 87.5% of the Powerhouse shares issued to W2T shareholders will be locked down against sale for one year and, post completion, with an Orderly Market Agreement in place for two more years. A relationship agreement with the largest incoming shareholding family will be signed as part of the deal.

Following completion of the Acquisition, W2T will commence the winding up of its international subsidiary in Thailand and will itself be fully subsumed into Powerhouse with the intention that wind up proceedings for W2T can commenced by the end of 2020 or soon thereafter.

OUR PRODUCT

The commercial DMG unit is currently marketed in nominal 25 tonnes per day (tpd) and 40 tpd waste plastic processing sizes, to generate up to 3.8MW of electricity, export 3.4MW of electricity and produce up to 2 tonnes of hydrogen. DMG takes waste plastics that cannot be recycled and regenerates them into clean energy that can be separated into hydrogen for delivery either as clean fuel for fuel cell transport or as a feedstock in other applications in the chemicals and plastics industries.

Design Development
The design of the DMG generic process that had been completed in 2018 was further refined and updated to meet customer needs through 2019. These activities resulted in a further update of the already announced 25 tpd model of the DMG and increased to allow Powerhouse to offer 25 tpd and 40 tpd plants.

The increased throughput to 40 tpd of mixed non-recyclable feedstock will typically generate up to 3.8MWe of electrical power, exporting 3.4 MWe or alternatively export 2 tonnes of road-fuel vehicle quality hydrogen per day whilst also exporting at least 2MWe of electricity.

The design development will continue in response to customer requests for alternative waste feedstock models and alternatives recovering materials from residue from specific feedstocks.

Technology Risk Management
Powerhouse Energy has instigated a detailed and comprehensive engineering and technology risk management programme that has continued through the design phase since completion of the generic design and the DNV-GL technology review. The programme, termed the Technology Risk Management Programme includes review items suggested by DNV-GL and Powerhouse's internally generated technical risk assessments – each of which have specific activities planned to address the risk and will be resolved in the upcoming Protos development.

During the summer of 2019 as part of the Technology Risk Management Programme, at the instigation of one of the key component manufacturers, Powerhouse acted as a consultant to an analogous biomass plant enduring some start-up difficulties related to gas processing to help it optimise its bio-waste pyrolysis operation. As a result of this specific operating experience, Powerhouse has acquired additional physical data to build into the chemical engineering models developed for the process.

These research, engineering and operational experiences have helped in the assessment, removal, mitigation and reduction of the level of risk and, as a result of the knowledge and experience gained, particular risks have been mitigated or removed risk items. The work programme in 2019 removed major risks and provided mitigation measures for the significant risk items and DNV-GL queries. The Technology Risk Management Programme will be further validated by engineering contractors and DNV-GL through 2020.

As the Company proceeds through the Protos development, the Technology Risk Management Programme will be reviewed by the Powerhouse Board, and individual risks addressed through engineering studies allowing the register to be continuously updated. In parallel, DNV GL will be engaged to assess any risks in the Engineering Definition arising from the Engineering Procurement and Construction Management Contractors work programme. The Technology Risk Management Programme has a contingent/fallback suite of actions and these are costed and built into the Company business plan.

Intellectual Property Management
The first stage of patent work has been filed and the family of patent work completed, and statements of invention and claims initiated that are under scrutiny. These current patents under review cover the novel configuration of the equipment, and the operating parameters of this equipment. Further patent applications will arise from the detailed design and control system definition in hand for the first application of the DMG technology.

STRATEGIC REPORT

The most important IP remains the chemical engineering model of the process to create the clean gas – and Powerhouse maintain strict protocols to ensure this information is protected as secret, including limited access to process control on the system.

The key programming, control and maintenance of the systems will be maintained within a non-accessible black box which is updated by Powerhouse, under licence, under strict access protocols using firmware and programmes that have been demonstrated proven to resistance from remote access in accordance with military standard specifications. The control algorithms will be retained with control equipment that remain under the ownership of the Company. In the longer term the control system manufacture is planned to be undertaken by PowerHouse providing additional means of protecting the functional and operational knowledge.

A further stage of IP protection work in terms of extending patent suite aligned to the engineering design is planned through 2020 and budgeted within the Company Business Plan.

The Company has registered DMG® as a registered Brand name, for the Distributed Modular Generation technology.

Regulatory & Planning Landscape

The DMG system is compatible with carbon capture and storage (capture from flue gas and the gas engine exhaust) which will allow further incremental carbon dioxide reductions in future. This potential add-on feature will 'future proof' the low emissions nature of DMG as the offset emissions from electricity generation are forecast to decline as the carbon intensity of the electricity grid falls.

The premise for the application of DMG in the UK is that all process plants are able to be regulated outside the specific conditions of the Industrial Emissions Directive (IED) Chapter IV 'Incineration and Co-Incineration' and as such meet the IED Article 42(1) requirements that allow all advanced thermal conversion processes to be regulated under the Medium Combustion Plant Directive (MCPD) should they be able to demonstrate that the impacts arising from the combustion of cleaned syn-gas are 'as clean as natural gas'.

It is assumed that the first DMG project will be considered as an EPR S5.1a Schedule 13A activity and is regulated as a Small Waste Incineration Process by the local authority. This will continue until the process can be demonstrated to produce syngas that has been cleaned to the extent that it can meet the IED Article 42(1) requirements.

For the first DMG development at the Protos site, the intent is that until the gas has been proven to meet the quality criteria the plant will be considered as an EPR S5.1a Schedule 13A activity and permits will be applied for to the local authority.

Future Product Developments

The Company will develop a product development catalogue and the best opportunities will be identified from the initial new product screening programme and development programmes tabled and included in future plans. The current strategic route of hydrogen economy related technologies, equipment and services will be followed.

Customer's Value Proposition

Powerhouse customers will have differing internal drivers for the application of DMG. Most customers procuring DMG systems, whether operators or developers will require favourable commercial returns for their investment.

Powerhouse maintains several commercial revenue models for customers that provide robust demonstration of the monetization benefits of DMG facilities over their 25 year lifecycle. These financial models are adapted and shared with customers during the pre-sales studies and we also present the key aspects of a typical revenue model for a UK application of DMG technology.

Customer's Waste Plastics Revenues

The market for waste plastics in the UK demands a price for processing waste plastic that is not recycled, this represents more than 70% of the plastic currently in the waste streams. The alternative end destinations for these plastics is either incineration at costs up to £100 per tonne, or landfill at c.£130 per tonne. Operators of the DMG facilities accepting non-recyclable plastic is diverted from incineration or landfill can therefore expect to receive a gate fee for plastic received in the region of c.£80 per tonne and the Company and Peel will undertake further evaluation of these customer revenues in future months.

Customer's Hydrogen Sales

The hydrogen market in the UK is not well developed, hydrogen supplies are scarce and thus the current price of distributed hydrogen is high at £10-£12/kg. The UK government, via its Department for Business, Energy and Industrial Strategy ("BEIS"), is targeting a "production cost" for hydrogen below £5/kg, but distribution costs could add significantly to this. Peel undertook its own detailed studies with consultants on the potential of the hydrogen market concluding that a sale price of £7-8/kg can be assumed for DMG hydrogen, with the expectation that this could be higher in the earlier years and falling in real terms over time as the technology is refined. Powerhouse will undertake further independent research into this market position through 2020.

Customer's Electricity Sales

Current and forecast wholesale and retail electricity prices vary tremendously with many industries paying variable rates with supply demands. Electrical power from DMG facilities can be used on site by customers or sold directly to local businesses saving costs on relatively expensive national grid pricing. A flat wholesale price of £50/MWh is an indicative assumption for the 25-year lifecycle period.

Customer's Heat Sales

Where the customer or neighbouring businesses have a need for heat or cooling, then heat recovery and heat export systems from the DMG plant may be included providing another potential revenue stream.

License Fees to Powerhouse

Along with these customer benefits assumptions above, these customer financial models include an annual license fee to Powerhouse of £500,000.

MARKET CONTEXT

Hydrogen Market

The Company is committed to supporting the development of a hydrogen economy, primarily through the product development strategy to produce low cost hydrogen through its new proprietary technology. Powerhouse's DMG hydrogen technology is the first move in this strategy to facilitate the adoption of fuel cell heavy goods transportation, and in the longer term, flexing of the national grid gas specifications to enable DMG produced gasses as well as bio-gas to be added.

Hydrogen for Fuel Cell Electric Vehicles

Hydrogen will play an increasing role in moving the global economy away from a hydrocarbon centered one and towards the planned electric vehicle transport future, particularly for heavy goods vehicles and public service vehicles such as trains and buses. Many experts and government departments expect that hydrogen will become one of the major sources of energy consumption and storage over the coming decades. The DMG technology development has been focused on a solution to the lack of availability of distributed hydrogen.

Peel L&P, who have the Option to become the UK exclusive project developer of waste plastic to hydrogen units, are committed to developing the nascent UK hydrogen for fuel cell electric vehicle ("FCEV") market specifically for truck and bus fleets.

The UK, EU and the UK, Japan, South Korea, have introduced statutory legislation and regulations aimed at decarbonising road transport and there are various initiatives in place to build a hydrogen refueling infrastructure to support fuel cell electric vehicles. The UK government has identified hydrogen fuel cell electric vehicles as a key component to meet net zero emissions targets by 2050.

Powerhouse and Peel will endeavour to make sure that the UK Government understands that the DMG waste to hydrogen offers an alternative method of hydrogen production and that as the minimum, hydrogen from plastics has parity with distributed electrolysis in terms of any plans for subsidy and tax loading. Energy from Waste facilities in UK are exempt from Carbon Taxes, probably as they have a public health function. The DMG technology is an Energy from Waste process and therefore our customers would be treated in the same manner as conventional Energy from Waste operations. The companies also stress the beneficial impact of DMG technology as a solution to end of life, unrecyclable plastics

Hydrogen for Industrial Feedstocks

Hydrogen is used as a feedstock in several large industries such as the refining and chemicals. Powerhouse's technology for hydrogen production does not support major refinery consumers but is suitable for medium sized facilities. DMG plants are able to meet a nascent demand for a technology that can produce power and hydrogen on a local scale while cleaning up non-recyclable waste plastic and reducing landfill volumes simultaneously.

Interest has been shown from the developing world, most notably Asia and Africa, where waste to power solutions such as DMG will not only help clean up contaminated plastic waste but substitute for diesel power generation in creating a source of distributed electricity for off grid communities.

Powerhouse is an active member of the UK Hydrogen and Fuel Cell association and Peel is a leading member of the North West Hydrogen Alliance.

Waste Plastic Market

Powerhouse's DMG technology is an innovative method for handling end of life plastics and the Company has continued to experience significant interest in the product to handle this waste plastic.

UK Waste Plastic Market
In the domestic market, the 2019 'WRAP' report estimates that 2.4Mtonnes of plastic packaging was placed on the UK market. The amount of plastic packaging collected by UK local authorities is estimated to have increased by 10% since 2014 and almost all local authorities collect plastic bottles, with around four out of five collecting at least some types of pots, tubs and trays (PTTs), but only 10% accepting all types of plastic film. All the non-recyclable plastic materials can be regenerated to energy and hydrogen in DMG plants.

The route for 'recycling' by export has been closed as China and other governments have banned the import of plastics and other waste materials The loss of these historic export markets mean that domestic recycling must increase significantly in order to meet Government set stretched targets.

Investment in increased plastics recycling infrastructure must be able to weather economic volatility and be adaptable to changes in market need.

Peel estimates in the locale of Protos that 800,000 tonnes per annum of non-recyclable plastics arising from the residual waste stream is going to either landfill disposal or inefficient incineration facilities. This is sufficient feedstock for 60 DMG units within two hours of the Protos site alone, if material is redirected from landfill. Powerhouse and Peel are engaging in discussions with major consumer goods producers, all of whom are following developments on Protos with interest.

International Waste Plastic Markets
There is a global consensus towards reducing waste and increasing sustainable energy sources. Powerhouse has reviewed several international market practices and while all have their own not dissimilar approaches to the UK, the single theme that they have in common is that non-recyclable plastic waste is a growing problem for all. So, Powerhouse expects similar customer uptake in those markets. Powerhouse's engagement in international markets will rely on experienced local partners either as project developers and asset owners, or alternatively, through industrial partners engaging with Powerhouse in the design, delivery and operation of DMG plants.

As an example, Powerhouse is currently engaged in a feasibility study with a utility company for applications in Spain. There is currently less than a 20% recycling rate in Spain with no gate fee for plastic, so the market is not yet established for the recycling of plastics. Thus, plastic in the waste stream is going direct to landfill or in some instances to incinerators, yet the government is moving to ban incineration. There is evidence of some of the waste being exported and this route will be banned in the future. This represents an opportunity for our Spanish partner and Powerhouse to become part of a recycling revolution in waste treatment using the DMG technology.

STRATEGIC REPORT

SALES

Peel Partnership for UK

Strategic Setting

At an early stage, the Powerhouse Board identified that a key success factor for DMG technology would be the development of partnerships with suitably resourced companies which share its vision for clean energy from previously untreatable plastic waste. In 2019, Powerhouse successfully completed its alignment with a major development partner for the UK in Peel Environmental (www.peelenvironmental.co.uk). The belief shown by Peel in not just our technology but also in how it could transform the provision of clean energy and power at its industrial sites across the UK has greatly encouraged the Company as it had to clearly meet the exacting quality, technical and commercial thresholds that Peel requires of its partners.

The Board believes that this collaboration with Peel will be significantly beneficial as Peel's size and standing will help move Powerhouse away from any perceptions of being a small standalone technical IP business and towards a business with enabling and innovative green technology that one of the largest industrial site landowners and developers in the UK is keen to develop projects with. Under the terms of the agreements, Peel will seek the project funding for the already announced 11 projects and for the pipeline of projects to follow.

Background to Peel Partnership

The Peel Group is one of the leading infrastructure, transport and real estate investors in the UK, with collective investments owned and under management of more than £5 billion. Established by the current chairman, John Whittaker, the Peel Group has grown through an ethos of long-term investment in visionary regeneration projects, primarily in the North of England. The Group is family-owned, and its principal investments encompass land and property, transport and logistics, energy, retail and leisure.

Peel has a corporate commitment to sustainable targets and was the first property company to achieve Net Zero Carbon status using the UK Green Building Council's 2019 definition for buildings in the UK.

Peel L&P Environmental, a division of Peel L&P, is an experienced partner for Powerhouse in the waste and energy sectors and the Board concluded that a collaboration with the Peel group offered a significant strategic advantage compared to seeking project developers.

Peel has spent the last three years working closely with Powerhouse, reviewing the technology in parallel with its industrial and local authority client base. In 2019 they engaged an internationally recognised independent engineering consultancy, to formally undertake a due diligence review of the technology and subsequently the independent consultancy undertook a study to demonstrate that the DMG process is fully compliant with the legislative emission levels for operation in UK and throughout the European Union.

Peel plans to replicate the Protos development model throughout the UK and other sites are already in pre-planning for application later in 2020. Peel will incorporate the DMG application into its" Plastic Parks" vision and will develop the process for the local provision of hydrogen.

Peel's targets for shared facilities are local authorities with their waste management pressures and also blue-chip industrials.

Peel's 'Plastic Parks' vision foresees a nationwide implementation of developments where non-recyclable waste plastics are recycled and regenerated. These parks are intended to each have a Powerhouse DMG plant to divert plastic from landfill and produce hydrogen and clean power. Peel's plans involve bringing together potential counterparties for waste management, power generation and hydrogen production with a net negative CO_2 contribution for each site.

The two companies' relationship was strengthened post year end when the Peel L&P Environmental Managing Director, Myles Kitcher, joined the Powerhouse Board of directors.

Peel Collaboration Agreement

In the second half of 2019, Powerhouse announced that it had entered into a Collaboration Agreement ("CA") with Peel Environmental to develop an initial minimum of eleven sites in the UK for DMG facilities, including the first full scale commercial site application at Protos Energy Park in Cheshire. Subject to the W2T acquisition, the collaboration will see Peel initially develop the Protos Energy Park followed by at least ten further DMG sites.

Post year end, the specific commercial terms for the Protos project and subsequent projects were defined in a supplemental commercial agreement, under which the Company will receive engineering fees during the delivery of each project and, subsequent to successful commissioning, will also receive £500,000 per annum license fee per project.

Peel Option for Exclusivity for DMG In Plastics to Hydrogen Applications

Post year-end in March 2020, Powerhouse and Peel agreed an Option to enter into an exclusive agreement for the development of DMG Technology in the UK, once W2T has been acquired by the Company. On exercise of the option, the Company will be due £500,000 as a one-off fee for granting Peel exclusive rights to develop the DMG plants in the UK and Peel will lead the development and the funding strategy for all future UK projects. Peel will establish special purpose investment vehicles to fund each project with an anticipated total capital commitment of circa, £200m, to meet the agreed pipeline of 11 initial projects.

The UK exclusivity deal is dependent on the Powerhouse acquisition of Waste2Tricity Limited.

After the proposed acquisition, and when Peel exercise the option, Powerhouse will receive a one-off fee of £500,000. This arrangement will allow Peel to lead the consultation with various potential clients for UK based DMG plants. Powerhouse will receive an annual license fee of £500,000 for each DMG plant developed, payable when the unit becomes operational with potential additional fees earned by the Company from engineering services that may be delivered on the projects.

The Board believes that the positive engagement between Powerhouse and Peel and their close strategic fit will result in an effective and sustainable roll out of DMG technology across the UK.

Pipeline of UK Prospects

The pipeline of prospects developed by Powerhouse over the last twelve months has now been transferred to Peel which is integrating these potential clients into the roll out programme. These prospective clients include international waste companies, local authorities, and companies in the plastics and consumer goods production sectors. These are now being further developed by Peel with pre-project planning activities on the next intended sites already underway.

International Sales

The international business development activities will focus on developing regional and territory-by-territory partnership agreements to roll out DMG technology. Powerhouse will continue these international business development activities by marketing DMG to potential industrial partners, by building relationships, reviewing project opportunities and signing exclusive marketing agreements.

Strong interest has been expressed in DMG development partnerships internationally.

In Europe commercial feasibility assessments are being undertaken for the Iberian peninsula and project specific studies are underway in Greece.

In Australia the Company has a target project pipeline and Oceania Engineering Services are targeting the initiation of engineering studies for the first Australian project.

In Thailand where considerable prior work has been carried out, Powerhouse proposes to negotiate a new marketing agreement with a local entity paying for exclusivity of delivery in Thailand and focused on rolling out DMG technology in that country.

In Japan a series of potential partner Memorandums of Understanding have been developed and specific technical due diligence undertaken, with Toyota Tsusho and Itochu completing their exploratory due diligence in 2020. However potential Japanese partners have indicated that investment decisions will only be made subsequent to the commissioning of the first operational plant.

Noting this, the Company has focused through 2019 on the delivery of the first operational project. Wider business development activities will be initiated through second half of 2020 to secure partners for developments internationally and enable rapid roll out to meet the expected demand.

PROJECT PROGRESS

Protos Project – Ellesmere Port

The first application of the Powerhouse DMG technology is to be built at the Protos Site, a Peel L&P energy park development on a 54-hectare site known as 'Protos' near Ellesmere Port, Cheshire, England. The site is the first development by Peel L&P under the Collaboration Agreement.

The planning permission for the application was submitted in September 2019 and, on 3 March 2020, the Cheshire West and Chester planning committee approved the planning application for the DMG Technology to be utilised on the Protos Site.

Contractor Selection Process

Powerhouse spent much of 2019 engaging with the contractor community with a view to identifying interested Engineering Procurement and Construction (EPC) Contractors who could deliver the DMG facilities, in the UK and internationally.

The contracts familiarisation included various contractors undertaking their own technical due diligence of the DMG technology and ultimately a tender for the Protos Engineering Definition and outline execution consideration for Protos.

The final contractor selection list of six quality assured, financially capable and experienced contractors was transferred to Peel. Relationships with contractors who are not selected by Peel will continue to be developed for international projects.

Protos Engineering Progress

In the second half of 2019, Peel engaged project development consultants to deliver the development of the DMG plant at Protos on Peel's behalf. The consultants will oversee the overall site and engineering works including civil engineering design, groundworks and buildings as well as being the contracting party on behalf of Peel.

As part of this scope they have appointed an engineering contractor, with extensive international experience, to undertake the engineering definition for the Protos site to address all aspects of the facility design, seek equipment costs and hence allow all contract costs to be finalised. Formal announcement of consultancies and contractors will be made by Peel in due course. the energy and infrastructure sectors.

Through the first half of 2020 Powerhouse has been working extensively with Peel their appointed project management consultants and the plant engineering contractor on the engineering definition stage. Powerhouse is responsible for validation and direction of the design to ensure the Protos project meets the design criteria. At the end of the engineering definition phase Peel will be in a position to place costed execution contracts, allowing funders and investors to complete their activities to financial close.

Protos Execution Through to Operation

The execution phase of the project is currently being planned with specific roles and responsibilities for all aspects of the construction, commissioning and operation to be finalized. Powerhouse expects to receive fees from its involvement in commissioning including overseeing the training of the operational staff during this phase.

Powerhouse expects to undertake an ongoing remote and onsite monitoring and periodic servicing role in operations with the expectation that this will be an inbuilt requirement of the license agreement with Peel's special purpose vehicle (SPV) for which Powerhouse will receive £500,000 in annual fees.

FINANCE

Financial Strategy

The Company chose to follow a strategy to minimise new equity raises for 2019, wherever practical, and to closely manage cash and activities with the primary focus being placed on securing the delivery of the first DMG plant. In order to achieve this, the Company undertook an operational review to reduce monthly overhead by over 25%.

As part of this strategy and in order to progress the necessary technology risk management activities, as well as the pre-contract projects work, engineering contractors and service providers were asked and agreed to take some of their payments in Powerhouse equity. This demonstration of faith in the Company by service consultants engendered a shared belief in the technology and garnered a collegiate team structure. To underline their support of this strategy, the Powerhouse directors deferred any salary payments due from April 2019 to extend finances through the entire first application project period.

Financial Position

The Company ended the financial year with a cash balance of £103,580. The prudent management of cash as is required in such a nascent technology company will continue throughout 2020 in managing expenditure against income and available cash.

Post year end, Powerhouse expects income arising from contracts to be of the order of £160,000, related to Protos project work, research and development services, and the exercise of warrants issued in 2018 which will bring in an additional circa £285,000.

The Company has carefully managed its research and development activities and in 2019 applied for £195,708 in R&D tax credits for its 2018 activities. These amounts have been received post year end.

Financial Performance

The Company entered its first commercial contract for revenues in 2019, with invoices raised, and settled, in 2020 for £100,000 after performance obligations were completed.

Post year end the Company can look forward to executing further engineering services on the Protos development thus generating revenues and, subject to the successful completion of the acquisition of W2T, Powerhouse and Peel should complete the exclusivity Agreement with Peel securing the associated fee arrangements presented in the revenue model to be followed in future years.

Fundraises

The Company chose to minimise new cash raises while finalizing the Peel situation and the first project, and hence no fundraises were made in 2019. The Company raised £3.4M in 2018.

ORGANISATIONAL DEVELOPMENT

Organisational Development Strategy

The Company intends to expand its operational teams in a phased manner, aligned to project progress including the Protos project development and other subsequent projects, with teams set up to maintain and develop the delivery and supply chain relationships necessary to enable it to deliver and provide licensing support to multiple projects simultaneously. Powerhouse plans to invest prudently in operational personnel, management systems and equipment to ensure the required delivery of the services but will not look to increase staffing levels until demonstrably necessary for the growth of the business.

Board Strengthening

In February 2019, the Group's Chief Executive Officer, Keith Allaun, resigned from his role and we were pleased to appoint David Ryan as Chief Executive Officer. We thank Keith for his service and wish him well in his new endeavours.

David brings 39 years of experience in energy and international capital-intensive project delivery, together with successfully leading the founding, growth, and ultimately sale of an engineering business to an international contracting buyer. He is committed to delivering Powerhouse's high-quality waste to hydrogen DMG technology to meet customer requirements in a way that will maximise shareholder value. He is setting up business management systems aligned to the development of Powerhouse as a customer focused, revenue generating company delivering quality services that will lead to Powerhouse becoming a profitable technical delivery organisation.

Post year end, and in recognition of their strategic importance of Peel L&P to the development of Powerhouse in UK, we were pleased to welcome Myles Kitcher, Managing Director, Natural Resources & Energy, Peel L&P Holdings, to the Board in a non-executive role. Myles brings his extensive experience from sustainable industrial property development and management to lead the Protos project roll-out in the UK.

Following the proposed acquisition of W2T, it is anticipated that current chairman of W2T, Timothy Yeo, will join the Powerhouse Board as a non- executive director. Mr. Yeo has wide experience in government, serving in the Environment and Health Departments, and subsequently as Shadow Secretary of State for Trade and Industry in the Shadow Cabinet. He is currently the chairman of the New Nuclear Watch Institute, Honorary Ambassador of Foreign Investment Promotion for South Korea and since 2007 has been a non-executive director of Getlink SE, operator of the Channel Tunnel.

Advisory Panel

Powerhouse also announces it has dissolved its Advisory Panel, established in May 2017, with immediate effect and the Company would like to thank each panel member for offering their input pro-bono during its existence. It is anticipated that a Technical Advisory Committee with a focus on reclaimed hydrogen energy technology will be established in due course, made up of staff and industry specialists. In the meantime, with the Company in project focus, staff and expert external consultant input is directed at project management and technology risk management as described above.

Personnel

The management of Powerhouse is conscious that the Company's plans will demand a staffing plan to grow the business. Powerhouse operates with a close team made up of specialist experts and consultancy personnel to address specific activities. The team has shown dedication to the Company strategy by deferring fees and payments.

This staffing strategy has enabled the Company to professionally manage its necessary functions without incurring large fixed costs at this stage.

The staffing plan to be implemented will address the timely recruitment of well qualified younger professionals into engineering, business development, operations and finance roles. The individuals will only be recruited as budget allows and, in a fashion, that the individuals can be provided with a corporate alignment and training programme in order for them to become part of the future operational management team.

Management Systems
In the coming months the Company's management and IT systems will be enhanced as they begin to address the delivery of engineering and operational support for projects. Powerhouse anticipates it will achieve ISO 9001 and 14001 for these systems as part of the requirement to have repeatable quality assured process systems.

Offices & Research Facilities
Powerhouse currently operates out of the Thornton Energy Centre, near Chester in North West England where the laboratory facilities and research demonstrator, the principal test-bed for the underlying engineering and testing, are located. The Thornton office will also serve as a project support office for Protos. At the appropriate time, the Company will consider moving to dedicated business premises, however, such a move will only be initiated when the demands of budget, personnel, systems and customer interfaces can all be satisfied by a single location, and will not be as a result of any decision based around image perception.

CORPORATE SOCIAL RESPONSIBILITY

Our Commitment

The strategy of Powerhouse is based on sound ethical and environmental principles by addressing two of society's most pressing problems, the eradication of unrecyclable plastic waste and the production of clean hydrogen energy for fuel cell vehicles such as buses and trucks with the resultant improved air quality around our communities.

Consistent with the Company's commitment to operating with an inclusive, transparent and respectful culture. Powerhouse places particular emphasis on operating to the highest ethical and environmental standards.

The Company's objectives include observing the highest level of health and safety standards, developing its staff to their highest potential and being a good corporate citizen in the countries of operations.

The Company directors take personal ownership of maintaining high standards of business conduct throughout the organisation and for delivering these Corporate Social Responsibilities.

Stakeholder Engagement

The Board is mindful of the duties of directors under S.172 of the Companies Act 2006. The directors act in a way they consider, in good faith, to be most likely to promote the success of the Company for the benefit of its shareholders. In doing so, they each have regard to a range of matters when making decisions for the long-term success of the Company. The directors promote a culture within Powerhouse of treating everyone fairly and with respect and this extends to all principal stakeholders including shareholders, employees, consultants, suppliers, customers and the communities where it is active.

Environment Policies

As it moves into an operating environment the Company will redefine its commitments to the environment and to sustainable growth in new policies to be issued in the near future.

Staff

Powerhouse will commence strengthening its operational engineering and administration team through 2020. It is fully committed to promoting a working environment of equal opportunities for all without discrimination or harassment and regardless of part-time working, gender, sexual orientation, age, race, ethnicity, nationality, religion or disability.

The Company will report against this commitment in future annual reports.

Health Safety and Environment

The health and wellbeing of its staff and associates is considered in the evolving working practices as the Company grows. Our commitment covers the ways in which work is carried out from offices, home, laboratories, R&D facilities and operational sites.

The Company's research and development activities were delivered HSE incident free through 2019 and continued incident free performance is a key performance indicator for 2020.

The Product Emissions in Operation

The Company is committed to developing technology for projects with as emissions that are safe and low meeting all environmental and regulatory requirements.

The application of the Company's technology in waste to hydrogen plants produces residues are in two forms, solids and hydrocarbon paste. The ash like residue is generally inert material and proven as such on Protos and will be sold for use in road fill. Typically, the output is around 3-4 tonnes per day from 40 tonnes but varies with the type of customer feedstock. The gas clean up residue is a hydrocarbon rich paste that is generally taken by road tarmac type producers and, specifically for the first project may be directed to nearby Stanlow refinery and added to its processing capability.

Local Community Engagement

In 2019 Powerhouse supported Peel with involvement in the local community forums for the Protos plant as well as the planning permission consultation process.

Throughout the planned site works at Protos, and other projects as they come to fruition, Powerhouse will fully engage with local communities to inform and educate them on the DMG technology and listen to their concerns.

Industry and Educational Engagement

Our close relationship with the University of Chester has included our ongoing student sponsorship, involvement in mentoring and career events.

Wider afield Powerhouse demonstrates commitment to future engineers and technical specialists providing support and presentation to students at universities and professional bodies.

PRINCIPAL RISKS AND UNCERTANTIES

The Company is subject to various operational risks and the following issues are particularly relevant to the Company's business activities:

Business Risk

Technology Risk
The Company is running a detailed Technology Risk Management Programme derived from its own test and design activities and informed by the DNV GL Technical Assurance process. The strategy of selecting mainly proven components with extensive operating hours in similar service in other plants significantly reduces the risk profile for its DMG system.

As described in the Product section above, through 2019 Powerhouse continued to address the remaining identified technical risks. These will be worked through under the detailed design and commissioning period of the DMG at Protos. Powerhouse will also engage DNV-GL to provide independent technical assurance validation in accordance with the second stage of the DNV-GL Technology Validation process.

Research and Development Activity Risks
The Powerhouse research and development equipment has been subject to formal design and functional safety reviews with all activities being subject to risk assessments in accordance with the Company Health & Safety Management processes.

Powerhouse operates its research and development laboratory equipment and testing programmes to the best industry standards and in line with the high demands expected by the Company Health & Safety Management procedures. The Company's operating systems will be revised as it moves towards construction, commissioning and operation.

Manufacturing
The current execution route for the delivery of DMG plant and componentry in the UK will rely on proven delivery contractors undertaking procurement through their quality assured vendor selection systems. These systems will monitor all vendors including any specific vendors selected by Powerhouse. All equipment and components will be subject to detailed technical validation in the engineering phase and factory acceptance test programmes prior to release with detailed component proving pre-commissioning and commissioning phases to fall under the control of the Engineering Procurement and Construction Management contractor.

Execution Risk
The DMG design has been completed to minimise construction risk by the use of skidded components with limited hook up demands.

The execution strategy for Protos is reliant on experienced design and construction contractors delivering the process, under guidance of an experienced management team. The quality will further be assured to meet specification by Powerhouse validating and undertaking quality assurance surveillance through the execution.

The Company has undertaken a contractor familiarisation exercise to be able to align contractors with the other DMG processes as and when new orders arise.

Regulatory Risks
The Company aided Peel in its preparation of planning permission material. The rapid and uncontroversial approval of the planning application provides comfort that planning permission for other DMG plants, with their low visual and environmental impacts, will be forthcoming. Powerhouse is already engaged with developing the planning and permits for two further sites in Ellesmere Port.

In the UK, the application of the DMG once on a dedicated site does not require an Environment Agency permit, but instead a permit granted by the relevant Local Authority.

In undertaking the various air quality assessments necessary for permit application, the international independent consultancy Fichtner has demonstrated that the DMG process is fully compliant with the appropriate legislative emission levels for operation in the UK and throughout the European Union.

From the overseas project screening and feasibility studies the Company has gained confidence that planning and permitting for projects can be achieved in a timely fashion and specific locations will be desktop tested through 2020 arising from studies for Spain and Australia.

Competition Risk
There are a number of large scale waste gasification companies in operation, however few are active in or able to cope with black/grey plastics and rubber, or are targeting the market of smaller throughput, distributed, multiple sites where Powerhouse is active. The Company considers that, for a competitor to achieve the operating parameters and accumulated data that require considerable trial and error over many thousands of hours of operation and as such represents a significant barrier to entry.

There are also a number of active plastics to liquid companies, many using specific feedstocks, and the application of these processes is currently seen as complementary to the DMG process as this technology can accept the waste plastics rejected by these plants, incinerators or plastics recyclers.

Market Adoption Risk
The Company acknowledges that it currently does not have the depth of operation to deliver multiple projects on a worldwide basis and is mitigating this risk by engaging in these current markets through regional industrial partnerships.

There is significant interest in the DMG process worldwide, and the Company considers that the adoption of the technology is wholly dependent on Powerhouse demonstrating successful operation in the early plants.

Potential waste operator customers are being pushed into technologies such as DMG by the regulatory drive of international authorities to reduce landfilling via taxes and charges resulting in the waste feedstock having an inherent cost.

The DMG cost of production of hydrogen is attractive for hydrogen customers and market adoption will be dependent on the international take-up of hydrogen, mainly in the HGV FCEV market.

IP Protection Risk
As described in the Product section above, Powerhouse is adopting a dual route of IP protection via a family of patents and maintaining secrecy over the control algorithms and chemical engineering models for the process. The Company has undertaken the necessary checks to ensure freedom to operate within the process areas addressed by the DMG technology.

Staffing Risks
The Company has put in place staff retention measures including training, employee share option schemes and other measures. The management has extensive links into the UK and international energy professional community and will use these links to secure staff through coming growth period.

Financial Risk

- Cashflow risk

The Company manages its cash to ensure creditors are paid in a timely way and in avoiding, where possible, long term spend commitments. Cashflow forecasts are produced regularly to monitor planned forward spend and to assess funding needs in the short, mid and long term. The Company has managed, and will continue to manage, outgoings and operating costs within budget and during 2019 project engineering operating costs have been covered by revenues ultimately received for engineering services.

The Company's current cash balances are aligned with contracted service and post year end cash inflows from R&D tax credits, warrant exercises and Peel's Exclusivity fees are expected to meet all outstanding costs associated with the proposed acquisition of W2T and also the Company's planned expenditure and ongoing costs into the fourth quarter of 2020. Further revenues are expected through the year from operations.

When appropriate, the Company will consider the introduction of new equity capital or other sources of funding.

Other financial risks are considered as follows:

- Foreign Currency Risk

The execution of the first project does not expose the company to any foreign currency risk. The Company does not hold any cash in foreign currencies and there are not yet any planned international projects, therefore foreign currency value fluctuations are insignificant. When international contracts begin to be considered, the Board would examine the likely exposures of each such situation and determine what action to take to mitigate such risks.

- Interest Rate Risk

The Company does not have any corporate or project related debt outstanding and deposit rates are currently negligible, so the Board considers that there is currently no significant risk of any exposure to interest rate variations.

- Other Financial Risks

The Company considers price risk, liquidity risk and credit risk to be negligible in relation to their performance and financial position at this early stage of its development. Prior to entering into collaboration arrangements with the likes of Peel, or outsourced service providers to Powerhouse, the Board are cognizant of the fact that, prior to agreeing to allow the Company to enter into such arrangements, it is incumbent on them to ensure that they take a view on the standing and ability to deliver of any such partners and associates so as to avoid business disruption.

External Risks

The Company is subject to various risks originating from external events including political, economic, legal, business and financial conditions. The assessment of these risks, their evaluation and mitigation are essential parts of the Company's planning and internal control system.

The following risk factors, which are not exhaustive, are particularly relevant to our current business activities:

COVID-19

The Company has not been significantly affected by the global pandemic to date as the majority of work planned has been desk engineering.

The R&D facilities at Thornton Science Park were temporarily closed in March 2020 in line with government guidelines. Fortunately, Powerhouse did not have any pressing activities and the Company has moved its research activities, feedstock testing and customer trialing services into the third quarter 2020 under revised operating protocols.

STRATEGIC REPORT

The Protos project has been largely unaffected by the pandemic as the majority of ongoing work is desktop-based Engineering. However, it is expected that construction working practices will need to be updated to reflect government guidelines.

The company and contractor staff have undertaken certificated training on Coronavirus Covid-19 measures to follow and social distancing requirements.

The Contractors will be building into their delivery programmes the necessary safety precautions inherent in their Covid-19 safe operating practices to deliver Protos and these will be confirmed at contract award.

Political Risk - Brexit

The Company is not subject to the various serious implications as a result of Brexit. The main risk the Company may face as a result of Brexit is the increase in potential tariffs when trying to obtain equipment or licenses.

Regulatory Risk

The Company observes various changes in new governments' regulations within different geographies diligently to ensure that any regulatory changes are followed to mitigate any significant risks. This puts the Company in a position to adapt developing projects to keep up to date with the different necessary regulations.

I look forward to the next exciting year in the development of Powerhouse as it grows to become a profitable and growing Company.

David Ryan
Chief Executive Officer
29 June 2020

DIRECTORS' REPORT

The Directors present their report together with the audited financial statements for the year ended 31 December 2019 for Powerhouse Energy Group Plc ("Powerhouse Energy" or the "Company"). The financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union and will be laid before the shareholders of the Company at the Annual General Meeting.

Principal Activities

Powerhouse Energy is a company incorporated in England and Wales with company number 03934451. The Company is a public limited company which trades on the AIM market of the London Stock Exchange. The address of the registered office is 15 Victoria Mews, Mill Field Road, Cottingley Business Park, Bingley BD16 1PY.

Powerhouse Energy designs, delivers and licenses plastic regeneration processes to generate hydrogen and electrical energy systems and provides associated customer engineering and testing services.

The Company has a Distributed Modular Generation ("DMG") product platform for the regeneration of plastic to power and hydrogen. The Company engineers, sells, licenses and supports operations of the DMG process for applications in UK and throughout the world.

Business Strategy

The Company Business strategy is described in the Strategic Report.

Business Review

The review of the year and the Directors' strategy are set out in the Strategic Report.

Key Performance Indicators

At the current stage of corporate and technology development the Directors consider that performance is measured against the commercialisation and business development milestone activities reported in the Strategic Report.

Review of Future Developments

The Board intends to continue its corporate development strategies as described in the Chairman's Statement and the Strategic Report.

Management of Capital

The Company manages its capital according to Budgets with the aim of ensuring it can continue as a going concern. Capital sources include debt and equity instruments.

Board members review cash balances available for ongoing spend on a weekly basis against Budget and income forecasts in assessing needs forward and timing for any future equity raises.

Subsidiaries

The Company's only UK subsidiary is non-trading and not material. There are also long-term restrictions on the operations of the Company's subsidiaries in the US and Switzerland. With these restrictions in place, the Company is also unable to exert control over the subsidiaries. As such the Company has claimed exemptions applicable to it under Companies Act section 405 (2) and 405 (3b) and IFRS 10 to not present any Consolidated financial statements for the year ended 31 December 2019.

Results and Dividends for the Year

The Company financial statements for the year ended 31 December 2019 are set out on pages 47 – 69. The Company loss for the year after taxation amounted to £1,510,226 (2018: Loss of £2,350,638). The net liabilities of the Company are £12,982 (2018 assets: £804,102) with the movement in the year set out in the Statement of Changes in Equity.

The Company has not paid a dividend during the year ended 31 December 2019 (2018: £nil) and the Directors do not recommend the payment of a dividend at 31 December 2019 (2018: £nil).

Research and Development

Research and development related costs incurred during the year, relating to the DMG product, amounted to £419,333 (2018: £673,299). This excludes amounts expended on client projects that are expected to be recovered.

Financial Risk

Financial risk management and exposure are set out in the Strategic Report.

Events after the Reporting Period

There have been no significant events since the balance sheet date other than those discussed in this Directors' Report, the Strategic Report and note 25 to the Company financial statements.

Directors

The Directors who held office during the period and up to the date of the Annual Report are as follows:
Dr Cameron Davies
Keith Allaun (resigned 1 February 2019)
David Ryan
Brent Fitzpatrick
James Greenstreet

Post year end Myles Kitcher was appointed as a Non-Executive Director on 18 March 2020.

Company Secretary
Brent Fitzpatrick

DIRECTORS' REPORT

A brief biography of the current Directors can be found below:

Executive Director:

David Ryan, Chief Executive Officer
David Ryan has had a 39 year Professional Engineering career solely within the energy industry, he brings a breadth of project experience and has run major energy projects, set up and developed a blue chip engineering company serving energy companies and the investment community and run the international organisation of a multinational conglomerate. His experience in managing finances and growth of a start up business has been brought to bear on operational improvements.

Non-Executive Directors:

Dr Cameron Davies, Non-Executive Chairman
Dr Davies is a capable business leader who has successfully grown revenues and profits in a quoted alternative energy company. As founder, CEO, and Executive Director of AIM-quoted Alkane Energy plc) he led that company through each phase of its development. He built Alkane from its initial concept to the point of providing over 160MW of connected power generation, and a successful exit for his shareholders via a c. £60 million sale to Balfour Beatty Infrastructure Partners in October 2015.

Dr Davies was awarded a PhD in Applied Geochemistry from Imperial College London. During his career Dr Davies has evaluated numerous gasification technologies and projects. He is a Fellow of the Geological Society of London, a member of the European Petroleum Negotiators Group and the Petroleum Exploration Society of Great Britain.

Brent Fitzpatrick, Non-Executive Director
Mr. Fitzpatrick has over 20 years' experience as a corporate finance consultant. In the last 15 years he has been instrumental in advising a number of companies on their acquisitions and subsequent flotations.

Mr. Fitzpatrick was Non-Executive Chairman of Global Marine Energy plc- an AIM listed oil services company and Non-Executive Chairman of Risk Alliance plc, an insurance broker consolidator. Mr. Fitzpatrick is also an adviser to ECO Capital, a global clean tech fund and is a member of the Audit Committee Institute.

James Greenstreet, Non-Executive Director
Mr. Greenstreet has over 20 years of corporate and structured finance experience. Having started his career at Arthur Andersen, he joined BAE Systems in 1994 to work in the corporate finance team.

After leaving BAE, Mr. Greenstreet held corporate finance positions at IBM and XL Capital, once more focusing on asset and lease finance. In 2001 he co-founded Orbis Capital a successful corporate and structured finance business. Over the past 10 years Mr. Greenstreet has been instrumental in sourcing, structuring, packaging and managing transactions for a number of high-profile clients across a wide range of sectors.

Myles Kitcher, Non-Executive Director
Myles Kitcher was appointed as a Non-Executive Director on 18 March 2020. Myles is Managing Director of Powerhouse's development partner for Protos, Peel L&P Environmental and the leading force behind Protos - Peel's flagship destination for energy, innovation and industry where the first application of Powerhouse DMG technology is to be built. Myles is a Chartered Surveyor with extensive experience in both the public and private sectors managing the development process for a number of large waste infrastructure projects.

Prior to joining the Peel Group, Myles worked for Lancashire County Council where he held senior positions within the planning and waste management functions of the authority.

All the directors retire in line with the terms of the articles of the Company and being eligible, will offer themselves for re-election at the Annual General Meeting at the appropriate time.

Directors' Service Contracts

Details of the Directors' service contracts and their respective notice terms are detailed in the Remuneration Committee report.

Directors' Interests

The interests of the Directors at 15 June 2020, being the latest practicable date before the publication of the Annual Report, in the ordinary shares of the Company, together with their interests at 31 December 2019 were as follows:

	Number of ordinary shares	
	15 June 2020	**31 December 2019**
Cameron Davies	1,200,000	1,200,000
David Ryan	11,075,000	11,075,000
Brent Fitzpatrick	103,459	103,459
James Greenstreet	1,000,000	1,000,000
Myles Kitcher	-	N/A

Significant Shareholders

As at 15 June 2020, being the latest practicable date before the publication of the Annual Report, the Company is aware of the following significant interests in its ordinary, voting share capital:

Shareholder name	Number	%
Hargreaves Lansdown (Nominees) Limited A/C 15942	242,057,725	11.69
Hargreaves Lansdown (Nominees) Limited A/C VRA	190,762,999	9.21
Hargreaves Lansdown (Nominees) Limited A/C HLNOM	186,961,843	9.03
Interactive Investor Services Nominees Limited A/C SMKTISAS	123,583,908	5.97
Interactive Investor Services Nominees Limited A/C SMKTNOMS	110,777,768	5.35
Barclays Direct Investing Nominees Limited	101,753,396	4.91
Pershing Nominees Limited A/C PERNY	83,400,078	4.03
Vidacos Nominees Limited A/C CLRLUX	83,389,082	4.03
HSDL Nominees Limited A/C MAXI	69,294,606	3.35
Vidacos Nominees Limited A/C IGUKCLT	66,662,331	3.22
Lawshare Nominees Limited A/C SIPP	62,876,966	3.04

DIRECTORS' REPORT

Corporate Governance

The Company complies with the AIM Rules for Companies, including AIM Rule 26, concerning the disclosure of information. It also complies with the provisions of the Quoted Companies Alliance Corporate Governance Code ("QCA Code"). More details are provided in the Corporate Governance Report in this document.

Payment to Suppliers

The Company does not have a standard or code which deals specifically with the payment of suppliers. Total creditor days for the Company for the year ended 31 December 2019 were 36 days (2018: 15 days).

Risk Management and Principal Risks

The principal risks to the Company, including financial risks and exposures and descriptions of how they are managed is explained in detail in the Strategic Report on page 7 and in Note 21 to the financial statements.

Going Concern Basis

The financial statements have been prepared on a going concern basis, notwithstanding the Company having a total comprehensive loss of £1.51m (2018: £2.35m) and net operating cash outflows of £0.72m (2018: £1.91m). However, the Directors believe the going concern basis to be appropriate for the following reasons:

The Directors have prepared working capital projections which show that, along with cash balances in hand at 31 December 2019, the signed agreements for all Directors and certain contractors to waive any future remuneration or fees for themselves, fees expected to arise from the commercial contracts agreed or being negotiated, and support from one of its shareholders, the Company will have sufficient funding to be able to continue as a going concern.

In relation to the support of one of its shareholders, the Directors have been provided with a letter of support, where the said shareholder has indicated to the Directors that he intends, for at least 12 months from the date of the approval of these financial statements, to make available a maximum sum of £700,000. In addition, the Directors are also of the opinion that they can raise further funds as and when required.

The Directors consider that the above matters should enable the Company to continue in operational existence for the foreseeable future by meeting its liabilities as they fall due for payment. If the support of shareholders ceased or the Company was unable to raise further funds it would need to seek alternative finance in order to be able to remain as a going concern.

The financial statements do not include the adjustments that would result if the Company is unable to continue as a going concern.

Political and Charitable Donations

The Company has not made any political or charitable donations in the year ended 31 December 2019 (2018: nil).

Auditors

Jeffreys Henry LLP were re-appointed as auditors at the Company's 2019 AGM. A resolution is to be proposed at the 2020 AGM for the re-appointment of Jeffreys Henry LLP as auditors to the Company, at a rate of remuneration to be determined by the Audit Committee.

Each of the persons being a Director at the date of approval of this report confirms that:

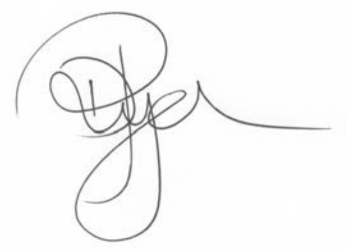
- So far as the Director is aware there is no relevant audit information of which the Company's auditor is unaware; and

DIRECTORS' REPORT

- The Director has taken all the steps that he ought to have taken as a Director in order to make himself aware of any relevant audit information and to establish that the Company's auditor is aware of that information.

This confirmation is given, and should be interpreted, in accordance with the provisions of s.418 of the Companies Act 2006.

Approved by the Board of Directors and signed on behalf of the Board on 29 June 2020.



David Ryan
Director

CORPORATE GOVERNANCE REPORT

Introduction

Since September 2018 all AIM companies have been required to comply with a recognised corporate governance code and to disclose how the implementation of the governance code has been applied or to explain any areas of departure from its requirements. Powerhouse carefully reviewed and then resolved to apply the Quoted Companies Alliance Corporate Governance Code ("QCA Code") published in April 2018 which is constructed around 10 broad principles.

We have considered how we apply each principle to the extent that the Board judges these to be appropriate for our circumstances, and below we provide an explanation of the approach taken in relation to each. Our compliance with the QCA Code is based on the Company's current practices and intended governance improvements.

The QCA Code makes clear it is the prime responsibility of the Chairman to ensure the Company applies the QCA Code to best advantage of all stakeholders of the Company. This report sets out our approach to the QCA Code and governance. Our compliance with the 10 principles is also available to view on the Company's website: www.powerhouseenergy.net

Under the QCA regulations we have the option to cross refer to disclosures made on the website rather than repeat them all in this annual report. The principal disclosures such as the Remuneration Committee and Directors' report will continued to be included in this annual report. However, for a full assessment of the Company you are encouraged to review the website for both the regulatory disclosures, and as we progress, more information on the activities of the Company.

QCA Principles

Principle 1 - Establish a strategy and business model which promote long-term value for shareholders

Details of the Company's strategy and business model are set out in the Strategic Report of this document where we describe progress to date, our commercial partnerships, our DMG development programme and plans for the future. Key challenges facing the Company and how they will be addressed are set out in the Strategic Report in the section headed Principal Risks and Uncertainties.

Principle 2 - Seek to understand and meet shareholder needs and expectations

Powerhouse is committed to open communication with all its shareholders. The Company believes it is important to explain business development and financial results to its shareholders and to ensure that suitable arrangements are in place so that the issues and concerns of major shareholders are heard and understood.

Copies of the Annual Report and Accounts are issued to all shareholders who have requested them and copies are available on the Company's website at www.powerhouseenergy.net. The Company's interim results are also made available on the Company's website. The Company makes full use of its website to provide information to shareholders, other stakeholders, potential customers, and other interested parties.

Shareholders are given the opportunity to raise questions at the Annual General Meeting ("AGM") and the Directors are available both before and after the meeting for further discussion with shareholders. As a matter of policy, the level of proxy votes (for, against and vote withheld) lodged on each resolution is declared at the meeting. In the event there were a significant number of votes against a resolution, the directors would seek to communicate with the shareholder concerned to discuss their issues. In order to comply with best practice and the Government's social distancing guidelines relating to Covid-19, the Company is holding its 2020 AGM as a closed meeting to ensure the safety of staff and shareholders. However, to ensure a level of engagement with shareholders, the meeting will be available to shareholders to attend, if necessary through electronic means, and details of how to participate will be set out in the notice of AGM.

The CEO is primarily responsible for shareholder liaison. The Company's shareholder base is currently largely comprised of retail shareholders. The CEO attends and presents at shareholder events from time to time where investors have the opportunity to discuss the Company's progress and performance. Trading updates and press releases are issued as appropriate.

The Board receives regular share register analysis reports to monitor the Company's shareholder base and help identify the types of investors on the register.

Principle 3 - Take into account wider stakeholder and social responsibilities and their implications for long-term success

The Company regards its shareholders, employees, industry bodies and regulators, consultants and advisors, business partners and suppliers as forming part of the wider stakeholder group. The Company recognises the contribution of each of these stakeholder groups and seeks to build meaningful and mutually beneficial relationships with them all. Please refer to the Corporate Governance statement on the Company's website for further details of its approach to stakeholder management. There are also details of the Company's approach to corporate social responsibility in the Strategic Report of this Annual Report and Financial Statements.

Principle 4 - Embed effective risk management, considering both opportunities and threats, throughout the organisation

Risk assessment and evaluation is an essential part of the Company's planning and an important aspect of the Company's internal control system. The business and management of the Company are the collective responsibility of the Board. At each Board meeting, the Board considers and reviews the trading performance of the Group. Matters reserved for the Board's review and approval include the approval of the annual budget, major capital expenditure, investment proposals, the interim and annual results and a review of the overall system of internal control and risk management.

The Board regularly considers the risk register and the mitigation and removal measures on a risk-by-risk basis focusing on those deemed most critical. The comprehensive risk register is presented on a regular basis to the Board.

For further details of the Company's approach to risk and its management, please refer to the Principal Risks and Uncertainties section of the Strategic Report.

Principle 5 – Maintain the board as a well-functioning, balanced team led by the chair

The Board, chaired by Dr Cameron Davies, comprises one executive and four non-executive directors and it oversees and implements the Company's corporate governance programme. The executive director is David Ryan. The non-executive directors are Dr Cameron Davies, Brent Fitzpatrick, James Greenstreet and Myles Kitcher.

As chairman, Dr Davies is responsible for the Company's approach to corporate governance and the application of the principles of the QCA Code. Dr Davies, Brent Fitzpatrick and James Greenstreet are the Company's independent directors and, as such, are independent of management and any business or other relationships which would interfere with the exercise of their independent judgment.

Each board member commits sufficient time to fulfill their duties and obligations to the Board and the Company. They attend board meetings and join ad hoc board calls and offer availability for consultation when needed. The contractual arrangements between the directors and the Company specify the minimum time commitments which are considered sufficient for the proper discharge of their duties. However, in exceptional circumstances all board members understand the need to commit additional time.

Board packs include information on business developments, progress and risks faced as well as financial performance and are circulated ahead of board meetings. Key issues are highlighted and explained, providing board members with sufficient information to enable a relevant discussion in the board meeting. From time to time, members of the Company's senior management present to the Board to update them on issues and developments.

The Board is supported by its Audit Committee and its Remuneration Committee.

Board and committee meetings
Attendances of Directors at Board and committee meetings convened in 2019, and which they were eligible to attend, are set out below:

Director	Board Meetings Attended	Remuneration Committee Attended	Audit Committee Attended
Number of meetings in year	8	0	1
Dr Cameron Davies	8	0	1
Keith Allaun*	0	N/A	N/A
David Ryan	8	N/A	N/A
Brent Fitzpatrick	7	0	1
James Greenstreet	4	0	1

*Mr Allaun resigned from the Board on 1 February 2019.

Principle 6 – Ensure that between them the directors have the necessary up-to-date experience, skills and capabilities.

The Board comprises one executive director and four non-executive directors, three of whom are independent. Details of the directors are set out in the Directors' Report of this Annual Report and Financial Statements.

The Chairman believes that the Board should always have a suitable mix of skills and competencies covering all essential disciplines bringing a balanced perspective that is beneficial both operationally and strategically.

The nature of the Company's business requires the Directors to keep their skillset up to date. Periodic advice on regulatory matters is given by the Company's professional advisers.

The Board is supported by senior management and by its key partners and professional advisers. The advice provided to the Board is often commercially sensitive and used by the Board to inform their decisions but typically will not be disclosed.

The Company Secretary is a non-executive director of the Company and reports directly to the Chairman on governance matters.

The Board is supported and advised by a Chief Financial Officer, a chartered accountant with extensive experience, who works closely with the Board and is managing financial procedures and controls.

Principle 7 - Evaluate board performance based on clear and relevant objectives, seeking continuous improvement

Board performance effectiveness process

The assessment of the Board's performance has to date been largely focused on the achievement of the Company's financial and strategic goals. To date, the Company has not highlighted the processes by which it evaluates Board performance whilst it has been focusing on commercialising its technology and the development of revenue generating partnerships. However, as the Company has entered commercial operation it intends to address this.

Each Board member is subject to a review by the Remuneration Committee based on their professional contribution as well as their contribution to the performance of the Company.

The terms and conditions of the arrangements, including remuneration are currently set by the entire Board of Powerhouse. The Board intends to highlight its process of review and progress against Company objectives. The Board will consider proportionate use of external consultants to carry out this role.

Board appointments and succession planning

- ***Board appointments***

The Remuneration Committee meets as and when necessary to consider the appointment of new directors. Board members all have appropriate notice periods so that if a board member indicates his intention to step down, there is sufficient time to appoint a replacement, whether internal or external.

Board appointments are made after consultation with advisers in all cases. The Nomad undertakes due diligence on all new potential board candidates.

Each director is required to offer themselves for re-election at least once every three years as per the Company's articles of association.

- ***Succession planning***

Succession planning has been undertaken to date on an informal basis by the Chief Executive Officer in consultation with the Board. The Board is satisfied that this is appropriate for this stage in the Company's development. The Board will implement a more formal succession planning scheme through 2020.

Principle 8 – Promote a corporate culture that is based on ethical values and behaviours

Consistent with Principle 3 above, the Company operates with an inclusive, transparent and respectful culture. The Board places particular emphasis on operating to the highest ethical and environmental standards. HS&E is a specific agenda item at every board meeting.

The Company' objectives include observing the highest level of health and safety standards, developing our staff to their highest potential and being a good corporate citizen in our chosen countries of operations.

The Company is committed to employment policies which follow best practice, based on equal opportunities for all employees, irrespective of ethnic origin, religion, political opinion, gender, marital status, disability, age or sexual orientation.

Principle 9 – Maintain governance structures and processes that are fit for purpose and support good decision-making by the board.

The Board is confident that its processes and culture are appropriate for the Company's current size and complexity, but is aware that it must continue to review its practices as the Company evolves and grows.

CORPORATE GOVERNANCE REPORT

The Chief Executive Officer has overall responsibility for managing the day to day operations of the Company and the Board as a whole is responsible for implementing the Company's strategy. Management systems and procedures will be implemented in 2020 in parallel with project execution and licencing readiness activities.

The Company has established an Audit Committee and a Remuneration Committee with formally delegated duties and responsibilities.

Audit Committee
The duties of the Audit Committee include reviewing, in draft form, the Company's annual and half-yearly report and accounts and providing advice to the board. Members of the Audit Committee are also responsible for reviewing and supervising the financial reporting process and internal control systems of Powerhouse. The Audit Committee is comprised of the Non-Executive Directors of the Board.

Remuneration Committee
The Remuneration Committee is responsible for reviewing the scale and structure of the executive Directors' remuneration and the terms of their service contracts with the Company, including share option schemes and any bonus arrangements. The terms and conditions of the arrangements, including remuneration, with non-executive Directors are set by the entire Board of Powerhouse.

AIM Compliance
The Directors believe that compliance with the AIM Rules for Companies is a matter for the Board as a whole. Therefore, the AIM Compliance Committee which was originally established to ensure procedures, resources and controls were in place to ensure compliance with the AIM Rules and comprised all members of the Board, no longer stands as a separate entity. The function of the AIM Compliance Committee is managed by the Board and the Board continues to consult the Company's Nominated Adviser on an ongoing basis.

The appropriateness of the Company's governance structures will be reviewed annually in light of further developments of accepted best practice and the development of the Company.

Principle 10 – Communicate how the company is governed and is performing by maintaining a dialogue with shareholders and other relevant stakeholders

The Company maintains a regular dialogue with stakeholders including shareholders to enable interested parties to make informed decisions about the Company and its performance. Regular communication enables the Board to receive shareholders' views by various means as set out in Principle 2 above.

The Company regularly releases appropriate price sensitive information regarding its activities and progress to the market. The Chief Executive Officer and other management team members regularly participate in industry forums and investor conferences to keep stakeholders apprised of Company developments.

The Board discloses the result of general meetings by way of announcement and discloses the proxy voting numbers to those attending the meetings. In order to improve transparency, the Board has committed to announcing proxy voting results in future and disclosing them on the Company's website. In the event that a significant portion of voters have voted against a resolution, an explanation of what actions it intends to take to understand the reasons behind the vote will be included.

Brent Fitzpatrick
Director and Company Secretary
On behalf of the Board
29 June 2020

REMUNERATION COMMITTEE REPORT

Introduction

The Remuneration Committee comprises Dr Cameron Davies, Brent Fitzpatrick and James Greenstreet and is chaired by Brent Fitzpatrick.

The Remuneration Committee is responsible for reviewing the scale and structure of the Executive Directors' remuneration and the terms of their service contracts with the Company, including share option schemes and any bonus arrangements. The remuneration of Non-Executive Directors is a matter for the Executive Directors. No director is involved in any decision as to his or her own remuneration or benefits.

Remuneration Policy

The Remuneration Committee is aware that the remuneration package should be sufficiently competitive to attract, retain and motivate individuals capable of achieving the Group's objectives and thereby enhancing shareholder value.

Service Contracts

William Cameron Davies, Nigel Brent Fitzpatrick and James John Pryn Greenstreet have service contracts which can be terminated by providing three months' written notice. Myles Kitcher has a service contract which can be terminated without provision of notice. David John Ryan has a service contract which can be terminated by providing six months' written notice. Prior to his resignation, Robert Keith Allaun held a service contract which could be terminated by providing six months' written notice. Mr Allaun resigned from the Company on 1 February 2019.

David John Ryan's services to 31 March 2019 were provided via Nayr Consultants Limited, an engineering consultancy.

Basic Salary and Benefits

The remuneration of the Directors of the Company paid for the year or since date of appointment, if later, to 31 December 2019 is:

	2019 £ Salary/Fee	**2019 £ Pension**	**2019 £ Share based payments**	**2019 £ Other benefits**	**2019 £ Total**	2018 £ Total
William Cameron Davies	50,000*	-	12,378	-	62,378	80,945
Robert Keith Allaun*	70,000	-	-	-	70,000	239,842
David John Ryan**	133,500*	12,750	12,997	-	159,247	51,988
Nigel Brent Fitzpatrick	30,000*	-	7,426	-	37,426	59,708
James John Pryn Greenstreet	30,000*	-	7,426	-	37,426	59,708

**The Directors implemented a fee waiver for their services from 1 April 2019 with compensation applying once certain conditions are met. These are expected to materialize during 2020 and as such the amounts disclosed above include provision for the expected compensation.*

Share options held by the Directors are detailed in note 22 in the Notes to the Accounts. Total remuneration includes share based payments arising from the issue of options amounting to £40,229 (2018: £195,398) and details are set out in note 22 in the Notes to the Accounts. There have been no awards of shares to Directors under long term incentive plans.

REMUNERATION COMMITTEE REPORT

Bonus Schemes

All Executive Directors were eligible for consideration of participation in the Company's previous bonus scheme although no bonus payments were made. However, a new bonus scheme will be developed in 2020 as the Company enters a revenue generating and growth period.

No bonuses are payable in respect of the year ended 31 December 2019 (2018: nil).

Share Options

No share options were issued to Directors during the year.

David John Ryan was the highest paid Director in the year. There were no shares received or receivable by him in respect of qualifying services under long term incentive schemes.

For details of the total number of options outstanding at 31 December 2019 please refer to Note 22 of the Notes to the Accounts.

Remuneration Committee Meetings and Attendance

Please see the table in the Corporate Governance Report in this document for attendance by the members of the Remuneration Committee.

On behalf of the Directors of Powerhouse Energy Group plc

N. B. Fitzpatrick

Brent Fitzpatrick
Chairman of Remuneration Committee
29 June 2020

REPORT OF THE AUDIT COMMITTEE

Composition

The Audit Committee, which comprises Dr Cameron Davies, Brent Fitzpatrick and James Greenstreet, with Brent Fitzpatrick acting as Chairman, determines and examines any matters relating to the financial affairs of the Group including the terms of engagement of the Group's auditors and, in consultation with the auditors, the scope of the audit.

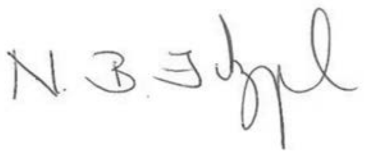
Role and Responsibilities

The Audit Committee is responsible for monitoring the integrity of the Company's financial statements, reviewing significant financial reporting issues, reviewing the effectiveness of the Group's internal control and risk management systems. In addition, it considers the financial performance, position and prospects of the Group and the Company and ensures they are properly monitored and reported on. It oversees the relationship with the Auditor (including advising on their appointment, agreeing the scope of the audit and reviewing the audit findings).

The Board and the Audit Committee do not consider it appropriate for the current size of the Group to establish an internal audit function. However, this will be kept under review.

Attendance at Audit Committee Meetings

Please see the table in the Corporate Governance Report in this document for attendance by the members of the Audit Committee.



Brent Fitzpatrick

Chairman of the Audit Committee
29 June 2020

STATEMENT OF DIRECTORS' RESPONSIBILITIES

The directors are responsible for preparing the Annual Report and the financial statements in accordance with applicable law and regulations.

Company law requires the directors to prepare financial statements for each financial year. Under that law the directors are required to prepare group financial statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union (EU) and have also chosen to prepare the Company financial statements under IFRSs as adopted by the EU. Under company law the directors must not approve the accounts unless they are satisfied that they give a true and fair view of the state of affairs of the company and of the profit or loss of the company for that period. In preparing these financial statements, International Accounting Standard 1 requires that directors:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- prepare the Financial Statements on the going concern basis unless it is inappropriate to presume that the Company will continue in business;
- state whether applicable IFRSs as adopted by the European Union have been followed, subject to any material departures disclosed and explained in the financial statements.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Responsibility Statement

We confirm that to the best of our knowledge that:

- the financial statements, prepared in accordance with International Financial Reporting Standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the Company;
- the strategic report includes a fair review of the development and performance of the business and the position of the Company together with a description of the principal risks and uncertainties that it faces; and
- the annual report and financial statements, taken as a whole, are fair, balanced and understandable and provide the information necessary for shareholders to assess the Company's performance, business model and strategy.

Dr Cameron Davies
Director
On behalf of the Board
29 June 2020

INDEPENDENT AUDITOR'S REPORT

TO THE MEMBERS OF POWERHOUSE ENERGY GROUP PLC

Opinion

We have audited the financial statements of Powerhouse Energy Group Plc (the 'Company') for the year ended 31 December 2019 which comprise the statement of comprehensive income, the statement of financial position, the statement of cash flows, the statement of changes in equity and notes to the financial statements, including a summary of significant accounting policies.

The financial reporting framework that has been applied in the preparation of the financial statements is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union and, as applied in accordance with the provisions of the Companies Act 2006.

In our opinion:

1. the financial statement give a true and fair view of the state of the Company's affairs as at 31 December 2019 and of the Company's loss for the year then ended;
2. the financial statement have been properly prepared in accordance with IFRSs as adopted by the European Union;
3. the financial statement have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions Relating to Going Concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the directors' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the Company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) we identified, including those which had the greatest effect on: the overall audit strategy, the allocation of resources in the audit; and directing the efforts of the engagement team.

These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Going concern assumption In continuing to apply the going concern basis for the Annual Report and accounts for the period ended 31 December 2019, the Directors should be satisfied that they have a reasonable expectation that the Company will continue in operational existence for the foreseeable future, being at least twelve months from the date of issue of the accounts. In reaching this conclusion, the future prospects of the Company must be considered. At 31 December 2019 the Company's cash balance is £104k. The going concern assumption is dependent upon the growth of the current business and future capital raises.	**Our audit procedures:** We obtained and reviewed the Directors' assessment and cash flow forecasts, including challenging the liquidity position and discussed with the Directors about their future fund raising plan. We reviewed the basis and reasonableness of the key assumptions and assessed the sensitivities of the underlying assumptions, specifically focusing on the assumptions of operating costs reduction and impact of future fund raise. We reviewed documentation in respect of potential liability waivers and letter of support and assessed the impacts on the Company's liquidity. Overall we were satisfied that the Company remained able to meet its obligations as they fell due for at least twelve months from the date of approval of the financial statements.
Correct calculation of share-based payments The share-based payment charge recognised in profit or loss for the year is £693,142 (2018: £553,959). All share-based payments are equity-settled and are made up of share issues, share option issues and share warrant issues. These share based payments have been reviewed for the purpose of calculating an appropriate share based payment charge. The fair value of services was used to value share-based payments where the fair value of services may be directly calculated. Where the fair value of services may not be directly calculated, the Black-Scholes model was used. The vesting period of share options and warrants are fixed.	**Our audit procedures:** We have understood and assessed the methodology utilised to estimate the Company's share-based payment charge calculations and checked that the calculation of the provision was mathematically accurate.
Exemption from preparing consolidated financial statements The Company has claimed exemptions applicable to it under Companies Act section 405 (2) and 405 (3b) and IFRS 10 to not present any Consolidated financial statements for the year ended 31 December 2019. This is on the basis that the Company's only UK subsidiary is non-trading and not material and there being long-term restrictions on the operations of the Company's subsidiaries in the US and Switzerland.	**Our audit procedures:** We have reviewed and discussed with the Directors applicable legislation and accounting standard and assessed that based on the Directors' explanation, the Company satisfies the conditions under Companies Act section 405 (2) and 405 (3b) and IFRS 10 to not present any Consolidated financial statements for the year. We also verified via third party sources that these conditions were in effect during and as at the year end.

Our Application of Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgment, we determined materiality for the financial statements as a whole as follows:

	2019 Company financial statements	**2018 Company financial statements**
Overall materiality	£12,000	£26,000
How we determined it	2.5% of gross assets	The average of 10% of loss before tax and 2.5% of gross assets
Rationale for benchmark applied	We believe that as the Company has not yet made any revenue since incorporation as it continues to develop its DMG Waste-to-Energy System, gross assets is the most appropriate benchmark, in line with generally accepted auditing benchmarks.	We believe that loss before tax is the primary measure used by the shareholders in assessing the performance of the Company, and is a generally accepted auditing benchmark.

We agreed with the management that we would report to them misstatements identified during our audit above £600 (2018: £1,300) as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

An Overview of the Scope of our Audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgments, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. As in all of our audits we also addressed the risk of management override of internal controls, including evaluating whether there was evidence of bias by the directors that represented a risk of material misstatement due to fraud.

How we Tailored the Audit Scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the Company, the accounting processes and controls, and the industry in which they operate.

We performed an audit of the financial information of Powerhouse Energy Group PLC. Our engagement team performed all audit procedures.

Other Information

The directors are responsible for the other information. The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Opinions on Other Matters Prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and the directors' report have been prepared in accordance with applicable legal requirements.

Matters on Which We are Required to Report by Exception

In the light of the knowledge and understanding of the Company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report or the directors' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept by the Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Responsibilities of Directors

As explained more fully in the directors' responsibilities statement set out on page 41, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Company or to cease operations, or have no realistic alternative but to do so.

Auditor's Responsibilities for The Audit of The Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at:

www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Use of this Report

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Mark Tenzer (Senior Statutory Auditor)
For and on behalf of Jeffreys Henry LLP
Chartered Accountants
Statutory Auditor

Finsgate
5-7 Cranwood Street
London EC1V 9EE
29 June 2020

STATEMENT OF COMPREHENSIVE INCOME
For The Year Ended 31 December 2019

	Note	**31 December 2019 £**	31 December 2018 £
Revenue	2	**-**	-
Administrative expenses	4	**(1,705,184)**	(2,495,256)
Operating loss		**(1,705,184)**	(2,495,256)
Net finance costs	5	**(750)**	(178)
Loss before taxation		**(1,705,934)**	(2,495,434)
Income tax credit	6	**195,708**	144,796
Total comprehensive loss		**(1,510,226)**	(2,350,638)
Loss per share from continuing operations (pence)	7	**(0.08)**	(0.15)
Diluted loss per share from continuing operations (pence)	7	**not applicable**	not applicable

The notes numbered 1 to 26 are an integral part of the financial information.

STATEMENT OF FINANCIAL POSITION
As At 31 December 2019

	Note	2019 £	2018 £
ASSETS			
Non-current assets			
Intangible fixed assets	8	**16,514**	-
Tangible fixed assets	9	**229**	1,679
Investments	10	**1**	1
Total non-current assets		**16,744**	1,680
Current Assets			
Contract costs	11	**114,418**	-
Trade and other receivables	12	**46,244**	63,996
Corporation tax recoverable	6	**195,708**	144,796
Cash and cash equivalents	13	**103,580**	840,692
Total current assets		**459,950**	1,049,484
Total assets		**476,694**	1,051,164
LIABILITIES			
Current liabilities			
Trade and other payables	14	**(489,676)**	(247,062)
Loans	17	**-**	-
Total current liabilities		**(489,676)**	(247,062)
Net (liabilities)/assets		**(12,982)**	804,102
EQUITY			
Share capital	18	**12,922,727**	12,395,943
Share premium	18	**48,778,651**	48,773,510
Accumulated deficit	19	**(61,714,360)**	(60,365,351)
Total (deficit)/surplus		**(12,982)**	804,102

The financial statements of Powerhouse Energy Group Plc, Company number 03934451, were approved by the Board of Directors and authorised for issue on 29 June 2020 and signed on its behalf by:

David Ryan
Director

The notes numbered 1 to 26 are an integral part of the financial information.

STATEMENT OF CASHFLOWS
For The Year Ended 31 December 2019

	2019	2018
	£	£
Cash flows from operating activities		
Operating Loss	**(1,705,184)**	(2,495,256)
Adjustments for:		
Share based payments	**693,142**	553,959
Depreciation	**1,450**	1,179
Changes in working capital:		
Decrease/(Increase) in contract costs	**(114,418)**	-
Decrease/(Increase) in trade and other receivables	**17,752**	24,499
Increase/(Decrease) in trade and other payables	**242,614**	6,206
Tax credits received	**144,796**	-
Net cash used in operations	**(719,848)**	(1,909,413)
Cash flows from investing activities		
Purchase of intangible fixed assets	**(16,514)**	(257)
Purchase of tangible fixed assets	**-**	(257)
Net Cash flows from investing activities	**(16,514)**	(257)
Cash flows from financing activities		
Proceeds from issue of shares	**-**	3,402,469
Net finance costs	**(750)**	(178)
Loans repaid	**-**	(1,402,155)
Net cash flows from financing activities	**(750)**	2,000,136
Net increase/(decrease) in cash and cash equivalents	**(737,112)**	90,466
Cash and cash equivalents at beginning of year	**840,692**	750,226
Cash and cash equivalents at end of year	**103,580**	840,692

The notes numbered 1 to 26 are an integral part of the financial information.

STATEMENT OF CHANGES IN EQUITY
For The Year Ended 31 December 2019

	Ordinary Share capital £	Share premium £	Deferred shares (0.5p) £	Deferred shares (4.5p) £	Deferred shares (4.0p) £	Accumulated deficit £	Total £
Balance at 1 January 2018	5,684,357	48,681,792	1,942,483	781,808	389,494	(58,281,622)	(801,688)
Transactions with equity parties:							
- Share issue	1,078,432	-	-	-	-	-	1,078,432
- Share issue	323,723	-	-	-	-	-	323,723
- Share issue	576,277	-	-	-	-	-	576,277
- Share issue in lieu of services	89,474	20,526	-	-	-	-	110,000
- Share issue	494,035	-	-	-	-	-	494,035
- Share issue	100,000	-	-	-	-	-	100,000
- Share issue in lieu of services	62,525	1,475	-	-	-	-	64,000
- Share issue	30,000	-	-	-	-	-	30,000
- Share issue in lieu of services	60,000	-	-	-	-	-	60,000
- Share issue – exercise options	83,333	69,717	-	-	-	-	153,050
- Share issue	650,000	-	-	-	-	-	650,000
- Share issue	50,000	-	-	-	-	-	50,000
- Roundings	2	-	-	-	-	-	2
- Share based payments	-	-	-	-	-	266,909	266,909
Total comprehensive loss	-	-	-	-	-	(2,350,638)	(2,350,638)
Balance at 31 December 2018	9,282,158	48,773,510	1,942,483	781,808	389,494	(60,365,351)	804,102
Transactions with equity parties:							
- Share issue in lieu of services	145,695	1,874	-	-	-	-	147,569
- Share issue in lieu of services	192,408	3,267	-	-	-	-	195,675
- Share issue in lieu of services	188,681	-	-	-	-	-	188,681
Share based payments	-	-	-	-	-	161,217	161,217
Total comprehensive loss	-	-	-	-	-	(1,510,226)	(1,510,226)
Balance at 31 December 2019	9,808,942	48,778,651	1,942,483	781,808	389,494	(61,714,360)	(12,982)

The following describes the nature and purpose of each reserve within equity:

Share premium Amount subscribed for share capital in excess of nominal value

Accumulated deficit Accumulated deficit represents the cumulative losses of the company and all other net gains and losses and transactions with shareholders not recognised elsewhere

The notes 1 to 26 are an integral part of the financial information.

NOTES TO THE ACCOUNTS
For The Year Ended 31 December 2019

1. ACCOUNTING POLICIES

Powerhouse Energy Group PLC is a Company incorporated in England and Wales. The Company is a public limited company quoted on the AIM market of the London Stock Exchange. The address of the registered office is 15 Victoria Mews, Mill Field Road, Cottingley Business Park, Bingley BD16 1PY. The principal activity of the Company is to continue the development and commercial delivery of the Distributed Modular Generation (DMG) technology, a proprietary design which converts calorific waste streams into synthetic gas (syn-gas). The following accounting policies have been applied consistently in dealing with items which are considered material in relation to the financial information.

1.1. Basis of preparation

This financial information is for the year ended 31 December 2019 and has been prepared in accordance with International Financial Reporting Standards ("IFRS") adopted for use by the European Union and the Companies Act 2006. These accounting policies and methods of computation are consistent with the prior year, unless otherwise stated.

The Company's only UK subsidiary is non-trading and not material. There are also long-term restrictions on the operations of the Company's subsidiaries in the US and Switzerland. With these restrictions in place, the Company is also unable to exert control over the subsidiaries. As such the Company has claimed exemptions applicable to it under Companies Act section 405 (2) and 405 (3b) and IFRS 10 to not present any Consolidated financial statements for the year ended 31 December 2019.

1.2. Judgements and estimates

The preparation of financial statements in conformity with IFRS requires management to make judgements, estimates and assumptions that affect the application of policies and reported amounts in the financial statements.

Areas involving a higher degree of judgements or complexity, or areas where assumptions or estimates are significant to the financial statements such as the impairment of investments, share based payments (share options and warrants) and going concern are disclosed within the relevant notes.

1.3. Going concern

The financial statements have been prepared on a going concern basis, notwithstanding the Company having a total comprehensive loss of £1.51m (2018: £2.35m) and net operating cash outflows of £0.72m (2018: 1.91m). However, the Directors believe the going concern basis to be appropriate for the following reasons:

The Directors have prepared working capital projections which show that, along with cash balances in hand at 31 December 2019, the signed agreements for all Directors and certain contractors to waive any future remuneration or fees for themselves, fees expected to arise from the commercial contracts agreed or being negotiated, and support from one of its shareholders, the Company will have sufficient funding to be able to continue as a going concern.

In relation to the support of one of its shareholders, the Directors have been provided with a letter of support, where the said shareholder has indicated to the Directors that he intends, for at least 12 months from the date of the approval of these financial statements, to make available a maximum sum of £700,000. In addition, the Directors are also of the opinion that they can raise further funds as and when required.

The Directors consider that the above matters should enable the Company to continue in operational existence for the foreseeable future by meeting its liabilities as they fall due for payment. If the support of shareholders ceased or the Company was unable to raise further funds it would need to seek alternative finance in order to be able to remain as a going concern.

The financial statements do not include the adjustments that would result if the Company is unable to continue as a going concern.

1.4. Foreign currency translation

The financial information is presented in sterling which is the Company's functional currency.

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are revalued to the exchange rate at date of settlement or at reporting dates (as appropriate). Exchange gains and losses resulting from such revaluations are recognised in the Statement of Comprehensive Income.

Foreign exchange gains and losses are presented in the Statement of Comprehensive Income within administrative expenses.

1.5. Revenue

The Company provides engineering services for the application of the DMG Technology, the intellectual property which the Company owns. Revenue from providing services is recognised in the accounting period in which services are rendered. For fixed-price contracts, revenue is recognised based on the actual service provided to the end of the reporting period as a proportion of the total services to be provided to the extent to which the customer receives the benefits. This is determined based on the actual labour hours spent relative to the total expected labour hours.

Where contracts include multiple performance obligations as specified by the work scope, the transaction price will be allocated to each performance obligation based on estimated expected cost plus margin.

Estimates of revenues, costs or extent of progress toward completion of services are revised if circumstances change. Any resulting increases or decreases in estimated revenues or costs are reflected in profit or loss in the period in which the circumstances that give rise to the revision become known by management.

In case of fixed-price contracts, the customer pays the fixed amount based on a payment schedule. If the services rendered by the Company exceed the payment, a contract asset is recognised. If the payments exceed the services rendered, a contract liability is recognised.

If a contract includes an hourly fee, revenue is recognised in the amount to which the Company has a right to invoice.

1.6. Leases

The Company leases property under rental contracts for a 12 month fixed period. Rentals payable under the leases are charged in the profit and loss account on a straight line basis over the lease term.

1.7. Finance expenses

The effective interest method is a method of calculating the amortised cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial liability, or, where appropriate, a shorter period, to the net carrying amount on initial recognition.

1.8. Income tax expense

The tax expense for the period comprises current and deferred tax.

UK corporation tax is provided at amounts expected to be paid (or recovered) using the tax rates and laws that have been enacted or substantively enacted by the balance sheet date.

Deferred tax is recognised in respect of all temporary differences that have originated but not reversed at the balance sheet date where transactions or events that result in an obligation to pay more tax in the future or a right to pay less tax in the future have occurred at the balance sheet date. Temporary differences are differences between the Company's taxable profits and its results as stated in the financial statements that arise from the inclusion of gains and losses in tax assessments in periods different from those in which they are recognised in the financial statements.

A net deferred tax asset is regarded as recoverable and therefore recognised only to the extent that, on the basis of all available evidence, it can be regarded as more likely than not that there will be suitable taxable profits from which the future reversal of the underlying temporary differences can be deducted.

Deferred tax is measured at the average tax rates that are expected to apply in the periods in which the temporary differences are expected to reverse, based on tax rates and laws that have been enacted or substantively enacted by the balance sheet date. Deferred tax is measured on a non-discounted basis.

1.9. Property, plant and equipment
Property, plant and equipment is stated at cost less accumulated depreciation. Cost represents the cost of acquisition or construction, including the direct cost of financing the acquisition or construction until the asset comes into use.

Depreciation on property, plant and equipment is provided to allocate the cost less the residual value by equal instalments over their estimated useful economic lives of 3 years, once the asset is complete.

The expected useful lives and residual values of property, plant and equipment are reviewed on an annual basis and, if necessary, changes in useful life or residual value are accounted for prospectively.

1.10. Intangible assets
Costs associated with patent applications are capitalised in the year of spend and amortised over their estimated useful lives commencing from the date of patent approval.

1.11. Other non-current assets
Other non-current assets represent investments in subsidiaries. The investments are carried at cost less accumulated impairment. Cost was determined using the fair value of shares issued to acquire the investment.

1.12. Financial assets
The Company classifies financial assets as loans and receivables within current assets, except for maturities greater than 12 months after the balance sheet date. These are classified as noncurrent assets. Assets are initially recognised at fair value plus transaction costs. Loans and receivables are subsequently carried at amortised cost using the effective interest rate method.

1.13. Contract costs
The Company recognises costs incurred in fulfilling contracts with customers that are directly associated with the contract as an asset if those costs are expected to be recoverable. Contract costs are amortised on a basis consistent with the transfer of goods and services to which the asset relates.

1.14. Trade and other receivables
Trade receivables are initially recognised at fair value. Subsequently they are carried at amortised cost less any provision for impairment.

1.15. Cash and cash equivalents
Cash and cash equivalents comprise cash balances and call deposits and are recognised and subsequently carried at fair value.

1.16. Trade and other payables
Trade payables are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Trade and other payables are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method.

1.17. Financial liabilities
Loans are financial obligations arising from funding received and used to support the operational costs of the Company. These are initially recognised at fair value. Loans are subsequently carried at amortised cost using the effective interest method.

Notes to the Accounts for the Year Ended 31 December 2019

1.18. Adoption of new and revised standards

(i) New and amended standards adopted by the Company

New and amended standards for the current period and effective from 1 January 2019 have been applied by the Company, including:

- Annual Improvements to IFRS Standards 2015-2017 Cycle
- Prepayment Features with Negative Compensation (Amendments to IFRS 9)
- Long-term Interests in Associates and Joint Ventures (Amendments to IAS 28)
- Plan Amendment, Curtailment or Settlement (Amendments to IAS 19)
- IFRS 16 'Leases'

There are no transition adjustments relating to the adoption of these standards.

(ii) Standards issued but not yet effective

There were a number of standards and interpretations which were in issue at 31 December 2019 but were not effective at 31 December 2019 and have not been adopted for these Financial Statements. The Directors have assessed the full impact of these accounting changes on the Company. To the extent that they may be applicable, the Directors have concluded that none of these pronouncements will cause material adjustments to the Company's financial statements. They may result in consequential changes to the accounting policies and other note disclosures. The new standards will not be early adopted by the Company and will be incorporated in the preparation of the Company financial statements from the effective dates noted below.

<u>Effective from 1 January 2020:</u>

- Definition of a Business (Amendments to IFRS 3)
- Definition of Material (Amendments to IAS 1 and IAS 8)
- Amendments to References to the Conceptual Framework in IFRS Standards

<u>Effective from 1 January 2021:</u>

- IFRS 17 'Insurance Contracts'

There are no other IFRSs or IFRIC interpretations that are not yet effective that would be expected to have a material impact on the Company.

1.19. Impairment

(i) Impairment review

At each balance sheet date, the carrying amounts of assets are reviewed to determine whether there is any indication that those assets have suffered an impairment loss. An impairment loss is recognised whenever the carrying amount of an asset or its cash generating unit exceeds its recoverable amount. Impairment losses recognised in respect of cash generating units are allocated first to reduce the carrying amount of any goodwill allocated to cash generating units and then to reduce the carrying amount of the other assets in the unit on a pro-rata basis. A cash generating unit is the group of assets identified on acquisition that generate cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The recoverable amount of assets or cash generating units is the greater of their fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash generating unit to which the asset belongs.

(ii) Reversals of impairments

An impairment loss in respect of goodwill is not reversed. In respect of other assets, an impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount.

An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

1.20. Share based payments
Share based payments are made to employees and third parties and all are equity settled.

(i) Third party provision of services
a) Via issue of shares
Contractors receive remuneration in the form of share-based payments, whereby services are provided and settled by the issue of shares. The cost of equity settled transactions is determined at the fair value of the services provided, based upon invoiced amounts or formal agreements in place with suppliers.

b) Via issues of share warrants
The Company also issues share warrants to third parties in relation to services provided by suppliers. The cost of equity settled transactions is determined at the fair value of the services provided, based upon invoiced amounts or formal agreements in place with suppliers. Where no fair value of services can be directly obtained, the fair value at the grant date is determined using the Black and Scholes valuation model. At each reporting date the Company revises its estimates of the number of options that are likely to be exercised with any adjustment recognised in the income statement.

(ii) Directors and employees
c) Via issues of share options
The Company has issued share options to Directors and employees through approved and unapproved option plans. The fair value of options issued is determined at the date of grant and is recognised as an expense in the Income Statement. The fair value at the grant date is determined using the Black and Scholes valuation model. At each reporting date the Company revises its estimates of the number of options that are likely to be exercised with any adjustment recognised in the income statement.

Where share-based payments give rise to the issue of new share capital, the proceeds received by the Company are credited to share capital and share premium when the share entitlements are exercised.

1.21. Segmental reporting
An operating segment is a component of the Company:

- that engages in business activities from which it may earn revenues and incur expenses (including revenues and expenses relating to transactions with other components of the Company);
- whose operating results are reviewed regularly by the Company's chief decision maker to make decisions about resources to be allocated to the segment and assess its performance; and
- for which discrete financial information is available.

1.22. Research and development
An internally generated intangible asset arising from development is only recognised where all of the following have been demonstrated: (i) the technical feasibility of completing the asset; (ii) the intention to complete the asset and the ability to use or sell it; (iii) the availability of resources to complete the asset; and (iv) the ability to reliably measure the cost attributable to the asset during its development.

In all other instances research and development expenditure is recognised as an expense as incurred. Development costs previously recognised as an expense are not recognised as an asset in a subsequent period.

2. Revenue

During the year, the Company has carried out work and incurred costs on a customer contract. As at the year end, performance obligations requisite for revenue recognition had not yet been satisfied and hence no revenue has been recognized in these financial statements. The costs associated with the contract are recognized as a contract costs asset and held on the balance sheet (see note 11).

3. Staff costs

	2019 £	2018 £
Directors' fees	**313,500**	289,711
Wages and salaries	**-**	26,207
Social security costs	**40,365**	29,987
Pensions	**12,750**	1,026
Other staff costs	**-**	7,081
	366,615	354,012

The number of average monthly employees (including Directors not paid via payroll) are as follows:

	2019 £	2018 £
Management	**4**	5
Research and development	**-**	1
Total	**4**	6

The total number of employees as at 31 December 2019 (including Directors not paid via payroll) was 4 (2018: 5).

4. Administrative expenses

Included in administrative expenses are:	2019 £	2018 £
Lease charges	**17,480**	16,989
Research and development costs	**419,333**	673,299
Depreciation	**1,450**	1,179
Share issue fees	**-**	116,218
Share based payments	**693,142**	553,959
Auditor's remuneration for audit services:		
Fees payable to the Company's auditor for the audit of the Company's annual financial statements	**20,000**	20,000
Fees payable to the Company's auditor and their associates for other services:	**1,000**	1,000
Non-audit fees paid to auditors		
Taxation advisory and compliance services	**19,571**	14,480

There are no other fees paid to the Company's auditor other than those disclosed above.

5. Net finance costs

	2019 £	2018 £
Bank and other interest payable	**945**	178
Interest receivable	**(195)**	-
	750	178

6. Income tax and deferred tax

As the Company incurred a loss, no current tax is payable (2018: £nil). In addition, as there is no certainty about future profits from which accumulated tax losses could be utilised, accordingly no deferred tax asset has been recognised. The Company has submitted a claim for research and development tax credits relating to the 2019 tax year and amounting to £195,708 (2018: £144,796) which has been recognised in the accounts. Accumulated tax losses amount to an estimated £11 million (2018: £9.5 million) and reflect tax losses submitted in tax returns and arising during the period less any relief taken for research and development credits. The tax credit rate is lower (2018: lower) than the standard rate of tax. Differences are explained below.

	2019	2018
	£	£
Current tax		
Loss before taxation	**1,705,934**	2,495,434
Tax credit at standard UK corporation tax rate of 19% (2018: 19%)	**324,128**	474,132
Effects of:		
Expenses not deductible for tax purposes	**(7,644)**	-
Research and development tax credits claimed	**195,708**	144,796
Deferred tax asset not recognised	**(316,484)**	(474,132)
Income tax credit	**195,708**	144,796

7. Loss per share

	2019	2018
Total comprehensive loss (£)	**(1,510,226)**	(2,350,638)
Weighted average number of shares	**1,900,547,410**	1,541,719,887
Loss per share in pence	**(0.08)**	(0.15)
Diluted loss per share in pence	**not applicable**	not applicable

As at 31 December 2019 and 2018, the share options and warrants in issue are not considered to have any dilutive effect in accordance with IAS 33.

Shares issued since the year end are disclosed in note 25.

8. Intangible fixed assets

	Patent costs
	£
Cost	
At 1 January 2019	-
Additions	16,514
At 31 December 2019	16,514
Accumulated amortisation	
At 1 January 2019	-
Charge for the year	-
At 31 December 2019	-
Carrying amount	
At 31 December 2019	16,514
At 31 December 2018	-

9. Tangible fixed assets

	Property, plant and equipment £
Cost	
At 1 January 2019	6,868
Additions	-
At 31 December 2019	6,868
Accumulated depreciation	
At 1 January 2019	5,189
Charge for the year	1,450
At 31 December 2019	6,639
Carrying amount	
At 31 December 2019	229
At 31 December 2018	1,679

10. Investments

Investments relate to costs of investments in subsidiary undertakings, namely in Powerhouse Energy, Inc, Pyromex AG and Powerhouse Energy UK Limited. Powerhouse Energy, Inc. is incorporated in California in the United States of America and the Company holds 100 per cent of the common stock and voting rights of the subsidiary. Pyromex AG is based in Zug, Switzerland and the Company holds 100 per cent of the shares and voting rights of the subsidiary. Powerhouse Energy UK Limited is a wholly owned UK based dormant company.

	2019 £	2018 £
Investment - Cost	**48,947,155**	48,947,155
Accumulated impairment	**(48,947,154)**	(48,947,154)
	1	1

The registered address of Powerhouse Energy Inc is 145 N Sierra Madre Blvd Pasadena, CA 91107, USA.

The registered address of Pyromex AG is Chollerstrasse 3, CH-6300, Zug, Switzerland.

The registered address of Powerhouse Energy UK Limited is 15 Victoria Mews, Mill Field Road, Cottingley Business Park, Bingley BD16 1PY.

11. Contract costs

	2019 £	2018 £
Contract costs	**114,418**	-
	114,418	-

Contract costs assets relate to costs arising on engineering contracts where the Company has not yet completed performance obligations which are typically met by the submission of reports, the transfer of data or on longer contracts via the completion of milestones in accordance with the relevant contract.

Revenue is expected to be recognised and be settled in full in relation to the contact costs assets during the next 12 months.

12. Trade and other receivables

	2019 £	2018 £
Other receivables	23,410	31,288
Prepayments and accrued income	22,834	32,708
	46,244	63,996

13. Cash and cash equivalents

	2019 £	2018 £
Cash balances	103,580	840,692
	103,580	840,692

14. Trade and other payables

	2019 £	2018 £
Trade payables	98,660	74,053
Other creditors and accruals	391,016	157,907
Other taxes	-	15,102
	489,676	247,062

Capital commitments not accrued for at the year end amounted to £nil (2018: £Nil).

15. Financial assets and financial liabilities

Financial assets	2019 £	2018 £
Financial assets at amortised cost:		
- Other financial assets at amortised cost	356,370	208,792
- Cash and cash equivalents	103,580	840,692
	459,950	1,049,484

Financial liabilities	2019 £	2018 £
Liabilities at amortised cost		
- Trade and other payables	489,676	247,062
	489,676	247,062

16. Leases

Future minimum rentals payable under non-cancellable leases are as follows:

	2019 £	2018 £
Amounts payable:		
Within one year	**1,429**	1,429
	1,429	1,429

17. Loans

	2019 £	2018 £
At 1 January	**-**	1,402,155
New loans raised	**-**	-
Loans repaid	**-**	(1,402,155)
Interest expense	**-**	-
Interest paid	**-**	-
	-	-
Loans classified as:		
Current	**-**	-
Non-current	**-**	-

18. Share capital & share premium

<u>(i) Number of shares</u>

	0.5 p Ordinary shares	**0.5 p Deferred shares**	**4.5 p Deferred shares**	**4.0 p Deferred shares**
Shares at 1 January 2018	1,136,872,014	388,496,747	17,373,523	9,737,353
Issue of shares	719,559,607	-	-	-
Shares at 31 December 2018	**1,856,431,621**	**388,496,747**	**17,373,523**	**9,737,353**
Issue of shares	105,356,804	-	-	-
Shares at 31 December 2019	**1,961,788,425**	**388,496,747**	**17,373,523**	**9,737,353**

Notes to the Accounts for the Year Ended 31 December 2019

(ii) Value in £

	0.5 p Ordinary shares	0.5 p Deferred shares	4.5 p Deferred shares	4.0 p Deferred shares	Share Capital	Share Premium
	£	£	£	£	£	£
At 1 January 2018	5,684,357	1,942,483	781,808	389,494	8,798,142	48,681,792
Issue of shares	3,597,801	-	-	-	3,597,801	91,718
At 31 December 2018	**9,282,158**	**1,942,483**	**781,808**	**389,494**	**12,395,943**	**48,773,510**
Issue of shares	526,784	-	-	-	526,784	5,141
At 31 December 2019	**9,808,942**	**1,942,483**	**781,808**	**389,494**	**12,922,727**	**48,778,651**

All ordinary shares of the Company rank pari-passu in all respects.

None of the deferred shares carry any voting rights or any entitlement to attend general meetings of the Company. They carry only a right to participate in any return of capital once an amount of £100 has been paid in respect of each ordinary share.

On 5 February and 25 April 2018, the Company issued 215,686,275 and 64,744,645 ordinary shares of 0.5p respectively at the agreed price of 0.5p in final settlement of the outstanding loan balance due to Hillgrove of £1,402,155.

On 25 April 2018 the Company issued 115,255,355 ordinary shares of 0.5p each at a price of 0.5p amounting to £576,277 before issue costs.

On 23 May 2018 and 14 June 2018, the Company issued 10,000,000 and 7,894,737 ordinary shares of 0.5p each at a price of 0.5p and 0.76p respectively in settlement of services provided.

On 13 July 2018 the Company issued 98,907,004 ordinary shares of 0.5p each at a price of 0.5p each amounting to £494,035 before issue costs.

On 3 August 2018 the Company issued 20,000,000 ordinary shares of 0.5p each at a price of 0.5p each amounting to £100,000 before issue costs.

On 14 August 2018 the Company issued 797,607 and 11,707,317 ordinary shares of 0.5p each at a price of 0.5015p and 0.5125p each respectively in settlement of services provided.

On 17 August 2018 the Company issued 6,000,000 ordinary shares of 0.5p each at a price of 0.5p each amounting to £30,000 before issue costs.

On 22 October 2018 the Company issued 12,000,000 ordinary shares of 0.5p each at a price of 0.5p each in settlement of services provided.

On 26 October 2018 the Company issued 16,666,667 ordinary shares of 0.5p each at a price of 0.6p each amounting to £100,000 before issue costs.

On 10 December 2018 the Company issued 130,000,000 ordinary shares of 0.5p each at a price of 0.5p each amounting to £650,000 before issue costs.

On 14 December 2018 the Company issued 10,000,000 ordinary shares of 0.5p each at a price of 0.5p each amounting to £50,000 before issue costs.

Notes to the Accounts for the Year Ended 31 December 2019

On 1 April 2019 the Company issued 23,023,750, 4,306,802 and 1,808.333 ordinary shares of 0.5p each at prices of 0.5p, 0.5015p and 0.6p each respectively in settlement of services provided.

On 15 July 2019 the Company issued 35,215,000 and 3,266,667 ordinary shares of 0.5p each at prices of 0.5p and 0.6p each respectively in settlement of services provided.

On 21 November 2019 the Company issued 37,736,252 ordinary shares of 0.5p each at a price of 0.5p each in settlement of services provided.

19. Accumulated deficit

	2019	2018
	£	£
As at 1 January	**(60,365,351)**	(58,281,622)
Loss for the year	**(1,510,226)**	(2,350,638)
Share based payments	**161,217**	266,909
At 31 December	**(61,714,360)**	(60,365,351)

20. Share based payments

The expense recognized for share based payments during the year is shown in the following table:

	2019	2018
	£	£
Share based payment charge recognised in Profit or Loss		
Expense arising from equity-settled share-based payment transactions:		
- Share options for Directors and employees	**40,229**	168,399
- Warrants for third party services	**-**	33,885
- Shares issued for third party services	**652,913**	351,675
Total share based payment charge in Income Statement	**693,142**	553,959
Other share based payment movement		
Exercise of share options for Directors and employees	**-**	(53,050)
Shares issued for third party services	**(531,925)**	(234,000)
Total share based payment	**161,217**	266,909

The was one modification made in 2018 for an award of warrants as disclosed in note 20.2. for the warrants awarded for third party services on 4 July 2017.

The were no liabilities recognised in relation to share based payment transactions.

20.1 Share options for Directors and employees

The Company has put in place various options schemes for Directors and employees as follows:

On 8 December 2014, the Company granted 11,000,000 options over ordinary shares to the Board, under the Powerhouse Energy Group plc Unapproved Share Option Plan 2011. The options may be exercised between the grant date and the tenth anniversary of the grant date and will lapse if not exercised during that period.

On 7 March 2016, the Company granted 15,000,000 options over ordinary shares to the Board, under the Powerhouse Energy Group plc Unapproved Share Option Plan 2011. The options may be exercised between the grant date and the fifth anniversary of the grant date and will lapse if not exercised during that period.

On 6 March 2018, the Company granted 32,100,000 options over ordinary shares to employees, including a Board member, under the Powerhouse Energy Group PLC 2018 EMI Option Scheme. The options vest to the employees over a period of 24 months and are exercisable between the relevant vesting dates and the tenth anniversary of the grant date and will lapse if not exercised during that period. These options had all been exercised or forfeited by 31 December 2019.

On 6 March 2018, the Company granted 60,000,000 options over ordinary shares to Board members (apart from Robert Keith Allaun who was awarded share options under the Powerhouse Energy Group PLC 2018 EMI Option Scheme as explained above), under the Powerhouse Energy Group PLC 2018 non-employee Share Option Plan. The options vest to the Board members over a period of 24 months and are exercisable between the relevant vesting dates and the tenth anniversary of the grant date and will lapse if not exercised during that period.

The movement of share options in the year are as follows:

	2019 Number	**2019 WAEP(pence)**	2018 Number	2018 WAEP (pence)
Outstanding at 1 January	**99,333,333**	**0.83**	26,000,000	1.49
Granted during the year	**-**	**-**	92,100,000	0.6
Forfeited during the year	**(24,333,333)**	**1.03**	(2,100,000)	0.6
Exercised during the year	**-**	**-**	(16,666,667)*	0.6
Outstanding at 31 December	**75,000,000**	**0.77**	99,333,333	0.83
Exercisable at 31 December	**67,083,333**	**0.79**	60,583,329	0.98

*The weighted average share price at the date of exercise of these options was 0.44p.

The weighted average remaining contractual life for the share options outstanding as at 31 December 2019 was 7.1 years (2018: 7.8 years)

No share options were granted during the year. The weighted average fair value of share options granted in 2018 was 0.32p.

The range of exercise prices for options outstanding at the year end was 0.6p to 2.5p (2018: 0.6p to 2.5p).

The number of options outstanding at 31 December 2019 are as follows:

Date of grant	**Granted**	**Share price on grant**	**Exercised**	**Forfeited**	**At 31 Dec 2019**	**Exercise price**	**Exercise period**
8 Dec 2014	11,000,000	1.875p	-	(5,000,000)	6,000,000	2.5p	9 Dec 2014 until 8 Dec 2024
7 Mar 2016	15,000,000	0.55p	-	(6,000,000)	9,000,000	0.75p	8 Mar 2016 until 7 Mar 2021
6 Mar 2018	32,100,000	0.57p	(16,666,667)	(15,433,333)	-	0.6p	7 Mar 2018 until 6 Mar 2028
6 Mar 2018	60,000,000	0.57p	-	-	60,000,000	0.6p	7 Mar 2018 until 6 Mar 2028
Total	118,100,000		(16,666,667)	(26,433,333)	75,000,000		

No share options expired in the year.

Notes to the Accounts for the Year Ended 31 December 2019

The estimated fair value of the options issued was calculated by applying the Black-Scholes option pricing model. The assumptions used in the calculation were as follows:

	8 December 2014	**7 March 2016**	**6 March 2018**
Options in issue 31 December 2019	6,000,000	9,000,000	60,000,000
Exercise price	2.5p	0.55p	0.6p
Expected volatility	127.56%	127.56%	70.00%**
Contractual life	10 years	5 years	10 years
Risk free rate	2%	2%	1.49%
Estimated fair value of each option	1.79p	0.45p	0.32p*

* the calculation applies a 25% discount for small companies
** expected future volatility of 70% based on historic volatility and the volatilities of similar sized companies.

20.2 Warrants for third party services
The Company has issued warrants in respect of services provided by consultants as part of their service arrangements. It has also issued warrants to participating shareholders in respect of certain fund raises. No share based payment charge is recognised for warrants issued to participating shareholders as they are outside of the scope of IFRS 2.

Details of warrants which have been issued are as follows:

On 4 July 2017, the Company granted 5,000,000 warrants to a consultant. The options may be exercised between the grant date and the third anniversary of the grant date and will lapse if not exercised during that period. At the date of grant the share price was 0.85p and the warrants have an exercise price of 1p per share. During 2018, the Board approved a reduction in the exercise price to 0.5p. The impact of the modification of the exercise price has been recognised in the share based payment charge for the year. The incremental fair value resulting from this was £14,268 as measured using the Black-Scholes model. They adjusted inputs are as disclosed below.

On 13 July 2018 and 3 August 2018, the Company granted one warrant for every two shares subscribed for to subscribers in fund raises confirmed on those dates. The July grant also included warrants granted to the Company's broker as part of its service arrangement in relation to the fund raise. Warrants of 54,343,852 (of which 4,940,350 were granted to the company's broker) and 10,000,000 respectively were granted. The options may be exercised between the grant date and the second anniversary of the grant date and will lapse if not exercised during that period. At the date of grant the share price was 0.44p and 0.31p respectively, and the warrants have an exercise price of 0.5p per share.

On 10 December 2018, the Company granted 7,800,000 to the Company's broker as part of its service arrangement in relation to the fund raise arising on that date. The options may be exercised between the grant date and the second anniversary of the grant date and will lapse if not exercised during that period. At the date of grant the share price was 0.57p and the warrants have an exercise price of 0.5p per share.

<u>Warrants in respect of services provided:</u>

The movement of warrants issued for share based payments in the year are as follows:

	2019 Number	**2019 WAEP (pence)**	2018 Number	2018 WAEP (pence)
Outstanding at 1 January	**17,740,350**	**0.5**	5,000,000	1*
Granted during the year	**-**	**-**	12,740,350	0.5
Forfeited during the year	**-**	**-**	-	-
Exercised during the year	**-**	**-**	-	-
Outstanding at 31 December	**17,740,350**	**0.5**	17,740,350	0.5
Exercisable at 31 December	**17,740,350**	**0.5**	17,740,350	0.5

* The exercise price of all the outstanding warrants outstanding at 1 January 2018 was modified in the year as explained above.

Notes to the Accounts for the Year Ended 31 December 2019

The weighted average remaining contractual life for the share warrants outstanding as at 31 December 2019 was 0.7 years (2018: 1.7 years)

No share warrants were granted during the year. The weighted average fair value of share warrants granted in 2018 was 0.15p.

The exercise price for warrants outstanding at the year end was 0.5p (2018: 0.5p).

The number of warrants, which have been included for share based payment purposes, outstanding at 31 December 2019 are as follows:

Date of grant	Granted	Share price on grant	Exercised	Forfeited	At 31 Dec 2018	Exercise price	Exercise period
4 July 2017	5,000,000	0.85p	-	-	5,000,000	0.5p	5 July 2017 until 4 July 2020
13 July 2018	4,940,350	0.44p	-	-	4,940,350	0.5p	14 July 2018 until 13 July 2020
10 Dec 2018	7,800,000	0.57p	-	-	7,800,000	0.5p	11 Dec 2018 until 10 Dec 2020
Total	**17,740,350**		**-**	**-**	**17,740,350**		

The Company is required to assess the fair value of instruments issued in respect of services received, with such value charged to the Income Statement. The estimated fair value of the warrants issued during the year was calculated by applying the Black-Scholes option pricing model. The assumptions used in the calculation were as follows:

Warrants issued for services	4 July 2017	13 July 2018	10 Dec 2018
In issue 31 December 2019	5,000,000	4,940,350	7,800,000
Exercise price	0.5p**	0.5p	0.5p
Expected volatility***	70.00%	70.00%	70.00%
Contractual life	3 years	2 years	2 years
Risk free rate	1.31%	1.27%	1.27%
Estimated fair value of each option*	0.39p**	0.11p	0.18p

* the calculation applies a 25% reduction for small companies
** after modification of exercise price as explained above
*** expected future volatility of 70% based on historic volatility and the volatilities of similar sized companies

<u>Warrants issued to participating shareholders</u>

Warrants issued to participating shareholders are outside the scope of IFRS 2 and no share based payment charges have been recognised on them. On initial recognition the warrants' cost was deducted from equity as it represents the cost of shares issued to investors. As the agreements had a fixed-for-fixed requirement, they are also recognised as equity at the same time. As such, there is nil net impact on equity and has not been included in the statement of changes in equity.

The number of warrants issued to participating shareholders, which have not been included for share based payment purposes, outstanding at 31 December 2019 are as follows:

Date of grant	Granted	Share price on grant	Exercised	Forfeited	At 31 Dec 2019	Exercise price	Exercise period
13 July 2018	49,403,502	0.44p	-	-	49,403,502	0.5p	14 July 2018 until 13 July 2020
3 Aug 2018	10,000,000	0.31p	(10,000,000)	-	-	0.5p	-
Total	**59,403,502**		**(10,000,000)**	**-**	**49,403,502**		

The estimated fair value of the warrants issued was calculated by applying the Black-Scholes option pricing model. The assumptions used in the calculation were as follows:

Warrants issued to participating shareholders	13 July 2018
In issue 31 December 2019	49,403,502
Exercise price	0.5p
Expected volatility**	70.00%
Contractual life	2 years
Risk free rate	1.27%
Estimated fair value of each option*	0.11p

* the calculation applies a 25% reduction for small companies
** expected future volatility of 70% based on historic volatility and the volatilities of similar sized companies

<u>All warrants</u>

The number of all warrants outstanding at 31 December 2019 are as follows:

Date of grant	Granted	Share price on grant	Exercised	Forfeited	At 31 Dec 2019	Exercise price	Exercise period
4 July 2017	5,000,000	0.85p	-	-	5,000,000	0.5p	5 July 2017 until 4 July 2020
13 July 2018	54,343,852	0.44p	-	-	54,343,852	0.5p	14 July 2018 until 13 July 2020
3 Aug 2018	10,000,000	0.31p	(10,000,000)	-	-	0.5p	-
10 Dec 2018	7,800,000	0.57p	-	-	7,800,000	0.5p	11 Dec 2018 until 10 Dec 2020
Total	**77,143,852**		**(10,000,000)**	**-**	**67,143,852**		

20.3 Share issue third party services

The Company issued shares to settle services to some of its service providers. The fair value of the share based payments charge were based on invoiced amounts or amounts agreed to be paid under a formal agreement of the Company.

21. Material risks

The Company is subject to various risks relating to political, economic, legal, social, industry, business and financial conditions. Risk assessment and evaluation is an essential part of the Company's planning and an important aspect of the Company's internal control system. The Company's approach to these risks is detailed in the Strategic Report.

Requirement for further funds

In assessing the going concern, the Directors have reviewed cash flow forecasts for 12 months following the date of these accounts. The current cash reserves and funding plans forward are considered sufficient to enable the Company to meet its liabilities as they fall due. Please refer to note 1.3 for further information regarding going concern.

22. Directors' remuneration and share interests

The Directors who held office at 31 December 2019 had the following interests, including any interests of a connected party in the ordinary shares of the Company:

	Number of ordinary shares of 0.5p each	Percentage of voting rights
William Cameron Davies	1,200,000	<0.1
David John Ryan	11,075,000	0.56
James John Pryn Greenstreet	1,000,000	<0.1
Nigel Brent Fitzpatrick	103,459	<0.1

The remuneration of the Directors of the Company paid or payable for the year or since date of appointment, if later, to 31 December 2019 is:

	2019 £ Salary/Fee	**2019 £ Pension**	**2019 £ Share based payments**	**2019 £ Other Benefits**	**2019 £ Total**	2018 £ Total
William Cameron Davies*	**50,000***	**-**	**12,378**	**-**	**62,378**	80,945
Robert Keith Allaun	**70,000**	**-**	**-**	**-**	**70,000**	239,842
Nigel Brent Fitzpatrick*	**30,000***	**-**	**7,426**	**-**	**37,426**	59,708
James John Pryn Greenstreet*	**30,000***	**-**	**7,426**	**-**	**37,426**	59,708
David John Ryan*	**133,500***	**12,750**	**12,997**	**-**	**159,247**	51,988

*The Directors implemented a fee waiver for their services from 1 April 2019 with compensation applying once certain conditions are met. These are expected to materialize during 2020 and as such the amounts disclosed above include provision for the expected compensation.

Total remuneration includes share based payments arising from the issue of options amounting to £40,229 (2018: £195,398). There have been no awards of shares to Directors under long term incentive plans during the year.

William Cameron Davies, Nigel Brent Fitzpatrick and James John Pryn Greenstreet have service contracts which can be terminated by providing three months' written notice. David John Ryan has a service contract which can be terminated by providing six months' written notice. Prior to his resignation, Robert Keith Allaun held a service contract which could be terminated by providing six months' written notice.

Robert Keith Allaun's services amounting to £Nil (2018: £11,250) were provided via Critical Point Solutions Limited and relate wholly to his services as a Director of the Company. He was employed directly by the Company for his 2019 services and for the remainder of his 2018 services. Mr Allaun resigned from the Company on 1 February 2019.

David John Ryan's service contract commenced on 1 February 2019 with payments applying from 1 April 2019. His services to 31 March 2019 were provided via Nayr Consultants Limited, an engineering consultancy. Details of amounts paid are provided in Note 23 Related Parties. This does not include any amount for services as a Director of the Company.

Share options held by the Directors who served during the year are as follows:

	Options at 1/1/19	Forfeited	Exercised	Options at 31/12/19	Exercise price	Earliest and latest date of exercise
Options granted 8 Dec 2014						
William Cameron Davies	-	-	-	-	-	-
Robert Keith Allaun	5,000,000	(5,000,000)	-	-	2.5p	9/12/14 - 8/12/24
Nigel Brent Fitzpatrick	3,000,000	-	-	3,000,000	2.5p	9/12/14 - 8/12/24
James John Pryn Greenstreet	3,000,000	-	-	3,000,000	2.5p	9/12/14 – 8/12/24
David John Ryan	-	-	-	-	-	-

	Options at 1/1/19	Forfeited	Exercised	Options at 31/12/19	Exercise price	Earliest and latest date of exercise
Options granted 7 March 2016						
William Cameron Davies	-	-	-	-	-	-
Robert Keith Allaun	6,000,000	(6,000,000)	-	-	0.75p	8/3/16 – 7/3/21
Nigel Brent Fitzpatrick	5,000,000	-	-	5,000,000	0.75p	8/3/16 – 7/3/21
James John Pryn Greenstreet	4,000,000	-	-	4,000,000	0.75p	8/3/16 – 7/3/21
David John Ryan	-	-	-	-	-	-

	Options at 1/1/19	Forfeited	Exercised	Options at 31/12/19	Exercise price	Earliest and latest date of exercise
Options granted 6 March 2018						
William Cameron Davies	15,000,000	-	-	15,000,000	0.6p	1/10/18 – 6/3/28
Robert Keith Allaun	13,333,333	(13,333,333)	-	-	0.6p	7/3/18 – 6/3/28
Nigel Brent Fitzpatrick	12,000,000	-	-	12,000,000	0.6p	7/3/18 – 6/3/28
James John Pryn Greenstreet	12,000,000	-	-	12,000,000	0.6p	7/3/18 – 6/3/28
David John Ryan	21,000,000	-	-	21,000,000	0.6p	7/3/18 – 6/3/28

Highest Paid Director
David John Ryan was the highest paid Director in the year. There were no shares received or receivable by him in respect of qualifying services under long term incentive schemes.

23. Related parties

Nayr Consultants Limited, an engineering consultancy services company, wholly owned by David John Ryan and his associates, provided engineering services to the Company during the year amounting to £56,000 (2018: £154,133). Amounts outstanding at year end for services provided and included in creditors and accruals amounted to £Nil (2018: £31,000).

Engsolve Limited, an engineering solutions company, is a related party due to a Director's family member being part of its key management personnel. Engsolve provided engineering services to the Company during the year amounting to £239,137 (2018: £361,187). Amounts outstanding at year end for services provided and included in these accounts amounted to £26,449 (2018: £6,614).

Transactions with other related parties were conducted on an arms' length basis and amounted to £nil (2018: £nil).

24. Segmental reporting

The Company comprises a single operating segment being a development company operating solely within the United Kingdom. As such the statement of comprehensive income and the statement of financial position may be used as a report on the segment. No revenue has been generated up to the reporting date of these accounts as the equipment was being developed and tested.

25. Events after the reporting period

On 29 January 2020, the Company issued 52,228,139 ordinary shares of 0.5p each in the Company ("Ordinary Shares") to various service providers for the settlement of fees. Of these new Ordinary Shares, 47,732,518 were issued at 0.5p and 4,495,621 were issued at 0.717p in accordance with terms agreed.

On 29 January 2020, the Company issued 5,500,000 ordinary shares of 0.5p each in the Company ("Ordinary Shares") further to the exercise of warrants for proceeds amounting to £27,500.

On 28 February 2020, the Company issued 25,440,350 ordinary shares of 0.5p each in the Company ("Ordinary Shares") further to the exercise of warrants for proceeds amounting to £127,202.

On 19 March 2020, the Company issued 3,750,000 ordinary shares of 0.5p each in the Company ("Ordinary Shares") further to the exercise of warrants for proceeds amounting to £18,750.

On 7 April 2020, the Company issued 7,800,000 ordinary shares of 0.5p each in the Company ("Ordinary Shares") further to the exercise of warrants for proceeds amounting to £39,000.

On 16 April 2020, the Company issued 2,500,000 ordinary shares of 0.5p each in the Company ("Ordinary Shares") further to the exercise of warrants for proceeds amounting to £12,500.

On 22 April 2020, the Company issued 5,500,000 ordinary shares of 0.5p each in the Company ("Ordinary Shares") further to the exercise of warrants for proceeds amounting to £27,500.

On 27 May 2020, the Company issued 4,100,000 ordinary shares of 0.5p each in the Company ("Ordinary Shares") further to the exercise of warrants for proceeds amounting to £20,500.

On 9 June 2020, the Company issued 2,003,502 ordinary shares of 0.5p each in the Company ("Ordinary Shares") further to the exercise of warrants for proceeds amounting to £10,017.

On 23 June 2020, the Company issued 1,750,000 ordinary shares of 0.5p each in the Company ("Ordinary Shares") further to the exercise of warrants for proceeds amounting to £8,750.

On 26 June 2020, the Directors of the Company issued a circular to shareholders detailing the proposed acquisition of the whole of the share capital of Waste2tricity Limited on a share for share basis. The acquisition is subject to approval of a waiver of the obligation of the Concert Party to make a Rule 9 offer under the Takeover Code. The issue is planned to be voted on at a General Meeting to be held on 14 July 2020.
If approved, the transaction would result in the issue of 1,437,440,277 shares in the Company to Waste2tricity Limited shareholders. Waste2tricity Limited has operated as the project developer of the Company's technology and holds certain UK development rights. Following discussions with commercial and funding parties, the Directors consider the acquisition in the interest of the Company in order to facilitate the commercial roll out of the Company technology.
As the two companies have been working closely together for a number of years, the transaction is not expected to significantly impact how Powerhouse operates going forward except in respect of the positive impact the transaction is expected to have on forward roll out of the technology.

In March 2020, an outbreak of Covid-19 caused widespread disruption to the global economy. We have not yet seen a material disruption to our business as a result of the Covid-19 outbreak, however events are rapidly evolving and the Company is closely monitoring the situation as it develops.

26. Ultimate controlling party

There is no controlling party of the Company.