Focused on growing a sustainable integrated gas business for Africa

Annual Report & Accounts 2019

Delivering economic growth and prosperity to Africa through the development of indigenous natural gas resources

Financial Highlights

Revenue +48%

85.6 $m

(2018: $57.8m)

Net cash flow from operating activities +21%

34.9 $m

(2018: $28.8m)

Adjusted funds flow[1] +124%

43.2 $m

(2018: $19.3m)

Net income attributable to shareholders +86%

24.7 $m

(2018: $13.3m)

Cash and short-term investments +5%

138.7 $m

(2018: $131.5m)

Earnings per share +87%

0.71 $

(2018: $0.38)

Gas sales (average) +58%

63.1 MMcfd

(2018: 39.9 MMcfd)

Working capital (including cash) +27%

107.0 $m

(2018: $84.2m)

Company gross conventional natural gas reserves (2P) -10%

265 Bcf

(2018: 293 Bcf)

Net present value (2P) discounted at 10% -4%

283 $m

(2018: $294m)

Glossary

$	US dollar
MMcfd	Million standard cubic feet per day
Bcf	Billion standard cubic feet
$m	Million US dollar
2P	Proved plus probable

[1] Please refer to Non-GAAP measures section of the MD&A for additional information.

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For more information go to our website:
www.orcaexploration.com

AT A GLANCE

Creating the infrastructure for a nation

Orca operates a license in Tanzania which has a total area of approximately 170 km^2. The license is located on or in shallow water around Songo Songo Island ("SSI") which lies 25 km off the coast of mainland Tanzania and 200 km south of Dar es Salaam.

Read more about Company operations on page 22

Pemba Island

Tanga

Zanzibar

Dar es Salaam

Tanzania

Mafia Island

Kilwa Kivinje

Tanzania

Size: 950,000 km^2

Population: 60,000,000

1 Significant resource base

In addition to the Songo Songo reserves, there is an estimated 50 trillion cubic feet of proven gas resource deep offshore Tanzania. Over the next decade, there is scope for the country to become both a significant exporter of liquefied natural gas and a major consumer of gas to meet economic growth.

2 We will grow with Tanzania

In recent years, Tanzania has initiated several significant transportation (ports and railways) and energy projects. Tanzania has had an average annual growth rate of 6% to 7% over the last decade and has the second largest economy in East Africa, one of the world's fastest growing regions. This new infrastructure will help support the region's industrial growth and enhance the country's position as a major logistics hub in East Africa.

3 There is a growing need for energy

Tanzania's population has increased at an annual rate of 3% per annum since 2004 and now stands at 60 million. With increased urbanization and industrial development, electricity consumption is expected to continue to grow at 7% per annum.

Highlights

Producing wells

5

Employees

111

Experience operating the Songo Songo Gas Field and related infrastructure

15years

4 A strong track record

Given Orca's financial strength, its 15 year record of successfully operating the Songo Songo Gas Field and downstream distribution network in Dar es Salaam, the Company is well placed to support Tanzania's plans to further develop its gas resources.

5 Experienced leadership team

In 2019, the Board was enhanced with the appointment of five non-executive directors with extensive experience of operating in Africa, and in developing and financing infrastructure projects.

6 Engaging with the community

The Company has a successful history of supporting education and health projects on SSI and in the neighboring districts.

CEO'S STATEMENT

Building a business that provides for the future

Nigel Friend
Chief Executive Officer

The unprecedented disruption to world markets caused by the COVID-19 virus has created significant business uncertainty. Orca entered the period with a strong balance sheet and growing gas production in Tanzania. The Company has implemented a number of measures to protect its workforce and mitigate the risk posed by the virus. We are confident of emerging from this global crisis well positioned for the future.

Governance

We believe that one of the foundations of a successful business is good corporate governance and we always try to align ourselves with best practices around the world.

The unprecedented disruption to world markets caused by the COVID-19 virus and the collapse in oil prices have created significant business uncertainty, particularly in the energy sector. Orca entered this difficult period with a strong balance sheet and growing gas production in Tanzania and has taken several measures to mitigate the risk posed by the virus. The Company's operations are critical to Tanzania's power generation and we are working with our stakeholders and the Government of Tanzania to ensure that supply continues uninterrupted. We remain vigilant and are taking all necessary steps to protect the wellbeing of our employees and the wider population.

Against this backdrop, the Company made significant progress in 2019 to support its strategy of prudent capital allocation and sustainable growth, with a focus on becoming one of the leading developers of gas resources for domestic use in Africa. The Company's operations in Tanzania continue to expand and we achieved record sales volumes averaging 63 million standard cubic feet per day ("MMcfd") over the year, a 58% increase on 2018.

From a leadership perspective, the Company Board was enhanced with the appointment of five non-executive directors with extensive experience of operating in Africa, and in developing and financing infrastructure projects. We also assembled a new business development team with technical and transactional experience to review and evaluate proven gas opportunities. At operational level, we streamlined the Company's management structure in Tanzania and increased our technical assurance capabilities.

We remain a lean team and leverage local expertise with international experience. In Tanzania, there are 102 employees of whom only two are expatriates. At corporate level there are nine personnel primarily focused on financial reporting, operational support and business development.

Prudent Balance Sheet Management

During 2019, the Company continued careful management of its capital and sought to buy back shares when they were trading at a significant discount to its net asset value. In June 2019, the Company commenced a Normal Course Issuer Bid ("NCIB"), through which it acquired 933,028 Class B Shares at an average price of CDN$6.43/share for an aggregate consideration of CDN$6 million.

This continued in Q1 2020, with the announcement and execution of a CDN$50.0 million Substantive Issuer Bid ("SIB"). Through the SIB auction process, a further 7,692,297 Class B Shares were purchased at CDN$6.50/share. As a consequence of the NCIB and SIB, the Company's outstanding shares as at March 31, 2020 comprised 1,750,495 Class A Shares and 24,864,960 Class B Shares.

The Company also declared four quarterly dividends in 2019, amounting in total to CDN$0.23 per Class A Share, and per Class B Share or $6.0 million in aggregate. The Company's Board intends to approve a dividend policy during 2020.

With a robust balance sheet and continuing gas production in Tanzania to fuel critical services and the growing economy, the Company is well placed to meet the challenges ahead and to take advantage of growth opportunities as and when they arise

Robust Financial Results

The Company continues to generate strong cash flows from its Songo Songo gas asset in Tanzania. 2019 was an excellent year, with net cash flows from operating activities of $34.9 million and net income attributable to shareholders of $24.7 million. The Company exited 2019 with working capital of $107.0 million, including cash and investment in short-term bonds of $138.7 million.

The Company has limited exposure to oil price fluctuation. All prices for gas sales to the power sector and the Tanzania Petroleum Development Corporation ("TPDC") are fixed and unaffected. Although the gas prices in our contracts with the industrial sector track oil prices, the contracts contain price caps and floors that limit the extent of any fluctuations.

Strong Economic Activity in Tanzania

There is strong economic activity in Tanzania driven by long-term strategic infrastructure projects. The first phase of the 1,225 km Standard Gauge Railway will connect Dar es Salaam to Morogoro and Dodoma at 202 km and ultimately extend to Uganda, Rwanda, and the Democratic Republic of Congo. Other signature projects include the completion of Dar es Salaam's new international airport, and the construction of several new flyovers and bridges. All of these projects require increased volumes of gas, particularly in relation to cement production. In addition, with a 30% electricity connectivity rate and population growth that has averaged 3% per annum since 2004, additional generation and transmission capacity are in high demand and are central to the Government of Tanzania's development plans.

The financial stability of the electricity utility, Tanzania Electric Supply Company ("TANESCO"), has continued during the year. TANESCO has remained current with its payments for gas consumed over the year and has repaid $11.0 million in relation to its arrears. Under accounting conventions, the remaining arrears amount in total to $47.5 million are fully provided against as at December 31, 2019 and are not recognized in the Company's balance sheet.

Gas Reserves Supporting Growing Production Levels

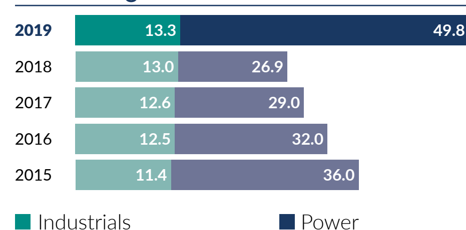
As at December 31, 2019, the independent reserves evaluator, McDaniel & Associates Consultants Ltd ("McDaniel") assessed that the gross proved (1P) and probable (2P) Songo Songo conventional natural gas reserves available to the Company to the end of the license period (October 2026) are 234 billion cubic feet ("Bcf") and 265 Bcf respectively. The net present value at 10% discount rate of the 1P reserves is $237.1 million and the 2P reserves, $282.6 million.

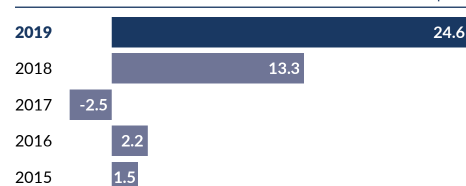
The main Songo Songo field has additional resources that are accessible should the Company secure a license extension,

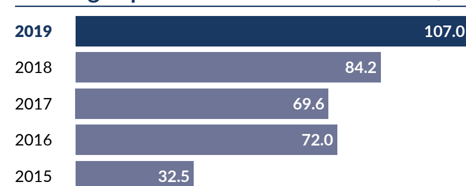
In May 2019, the Company's subsidiary, PanAfrican Energy Tanzania Limited signed a long-term gas sales agreement with TPDC for up to 20 MMcfd to be processed and transported to Dar es Salaam through the Tanzanian Government-owned, National Natural Gas Infrastructure ("NNGI"). This was subsequently increased to 30 MMcfd, with the increased volumes being supplied on a reasonable endeavors basis.

No Infrastructure Constraints

The Company's security of gas supply to Dar es Salaam is very strong. The Company is fortunate that it has access to two infrastructure systems to process the Songo Songo gas and transport it to the power and industrial markets in Dar es Salaam. The original Songas Limited ("Songas") gas processing plant (which is operated by the Company on behalf of Songas) and pipeline facilities ("Songas Infrastructure") has a current capacity of approximately 97 MMcfd and the NNGI on SSI has a capacity of 140 MMcfd, of which only 18% is currently utilized. Hence, there are no perceived infrastructure constraints for the foreseeable future.







CEO'S STATEMENT CONTINUED

This undeveloped energy demand will only rise as Africa's population is expected to increase by more than 75% to 2.1 billion by 2040, and the urban population is set to grow by more than half a billion

During 2019, the Company successfully installed a closed-loop refrigeration unit to maintain gas at the requisite temperature through the Songas Facilities. It is part of a wider project to maintain gas supply on specification. The second phase is to install compression and contracts are in the process of being signed. Compression will be installed on a turnkey basis at a forecast cost of $38 million, and with a target commissioning date of Q1 2022.

Making a Difference

The use of indigenous reliable gas and the displacement of imported fuel has had a significant beneficial impact on Tanzania, economically, environmentally and socially. It is estimated that gross production from the Songo Songo field has saved the Tanzanian economy around $10 billion by displacing the import of more expensive fuel oil. The burning of gas also creates approximately 30% less carbon dioxide emissions than oil. The Company continues to encourage the use of gas to displace diesel and petrol where possible. Sales of Compressed Natural Gas ("CNG") for use in vehicles is relatively small but gaining traction in Dar es Salaam. During the course of 2020, it is expected that several haulage fleets and bus operators will start to convert their vehicles to consume CNG, thus reducing Nitrogen Oxide and particulate emissions in populated areas.

The Company is currently finalizing its Environmental, Social and Governance ("ESG") policies, in line with best practice, and continues to monitor progress in this area. Our Tanzanian operations have been recording and reporting CO_2 and other emissions from gas production since securing a loan facility from the International Finance Corporation in 2015/16. Through our ESG processes, we intend to increase our reporting range and standards and drive down emission levels where we can.

The Company's Corporate Social Responsibility ("CSR") program fundamentally focuses on health and education, and in 2019 it continued to deliver significant benefits to the local population. Alongside our continuing educational scholarship scheme (that will shortly see the first ever students from SSI graduate from university), CSR projects have included the construction of a comprehensive medical facility in Somanga Funga. This includes, amongst other things, a maternity ward, operating theatres, an optometrist examination room and a laboratory. The facility fundamentally changes the access to high quality medical care for around 12,000 people in the local area. The Company has also commenced funding support to a local children's cancer charity.

A Focused Gas Strategy

In 2019, the Company completed a strategic review that concluded that it was in its own best interests and that of its shareholders to focus on developing proven gas resources for domestic consumption on the African continent.

Despite significant gas discoveries over the past 10 years in countries such as Mozambique, Tanzania, Senegal, Mauritania and Ghana, there has been limited domestic gas infrastructure development in Africa and as a result electricity connectivity remains stubbornly low. It is estimated that 580 million Africans do not have access to electricity out of a total current population of 1.2 billion. Developing greater gas generation capacity, combined with renewable electricity options, will help to alleviate this social issue and reduce the burning of solid biomass for cooking.

This undeveloped latent energy demand will only increase as Africa's population is expected to rise by more than 75% to 2.1 billion by 2040, and the urban population is set to grow by more than half a billion.

Natural gas is considered a transitional fuel that will facilitate and support the development of renewable energy sources. It is expected that projects focused on increasing the consumption of natural gas in Africa will be well-supported, given that it generates lower carbon emissions compared to other thermal fuels and there are significant social benefits from delivering economic growth and prosperity to the continent. With plentiful solar, hydro and natural gas potential, Africa has a unique opportunity to develop and diversify its energy supply in an efficient and environmentally-sound manner.

The Company's success has been built on the development and operation of its Songo Songo field in Tanzania, its midstream infrastructure and downstream distribution network that transports and distributes low pressure gas to industrial consumers. This project remains one of the few integrated gas projects in sub-Saharan Africa. One of the Company's objectives moving forward is to replicate the success of this project elsewhere on the continent. We believe a focused strategy targeting the consolidation and development of African gas assets can generate accretive returns for our shareholders and improve trading liquidity in the Company's shares.

Outlook

Q1 2020 saw lower demand for gas, as hydroelectricity plants were able to run at close to capacity as a consequence of unusually high rainfalls. However, demand is expected to pick up from the end of May when the dry season commences.

However, there remains considerable uncertainty as to the impact of the COVID-19 virus on future gas demand and the macro-economic climate in Tanzania.

The Company has been informed that the Government of Tanzania has completed a review of all the existing oil and gas Production Sharing Agreements in country. It is expected that the Government will propose amendments to the terms, though the timing of these discussions remain uncertain. We look forward to working with all parties to ensure that the Company can continue to develop the Songo Songo field and help Tanzania meet its growing energy needs.

With a robust balance sheet and strong gas production in Tanzania, Orca is well placed to help fuel critical services and the growing economy, overcome the current macro challenges and take advantage of growth opportunities as and when they arise. The prudent management of capital, the development of our Tanzanian operations and the diversification of our asset base remain at the forefront of the Company's strategy to grow and generate further shareholder returns in 2020.

Nigel Friend
Chief Executive Officer

The Orca Difference

Orca's focus on generating returns for shareholders by maintaining a robust balance sheet, prudently managing its capital and growing gas production in Africa sets the Company apart from its peers.

Returns to Shareholders

The Company continues to recognize the value of buying back shares when they are trading at a significant discount to net asset value and in June 2019, commenced an NCIB, through which it acquired 933,028 Class B Shares at an average price of CDN$6.43 per share for an aggregate consideration of CDN$6.0 million. This was enhanced by dividend returns totaling $6.0 million declared during the year and an SIB in early 2020 which returned a further CDN$50.0 million to shareholders.

Making a Difference

The Songo Songo development project and the use of indigenous reliable gas has had a significant economic impact on Tanzania. It has been estimated that gross production from the Songo Songo field has saved the Tanzanian economy around $10 billion by displacing the import of more expensive fuel oil. This has been hugely beneficial to the economy from a financial, social and environmental perspective.

A Focused Gas Strategy

Targeting near-term indigenous natural gas development or production opportunities in Africa to meet forecast increases in demand and deliver economic growth, prosperity and sustainable self-sufficiency. The Company intends to maintain its involvement at all levels of the gas supply chain, in order to leverage its expertise and deliver returns for shareholders.

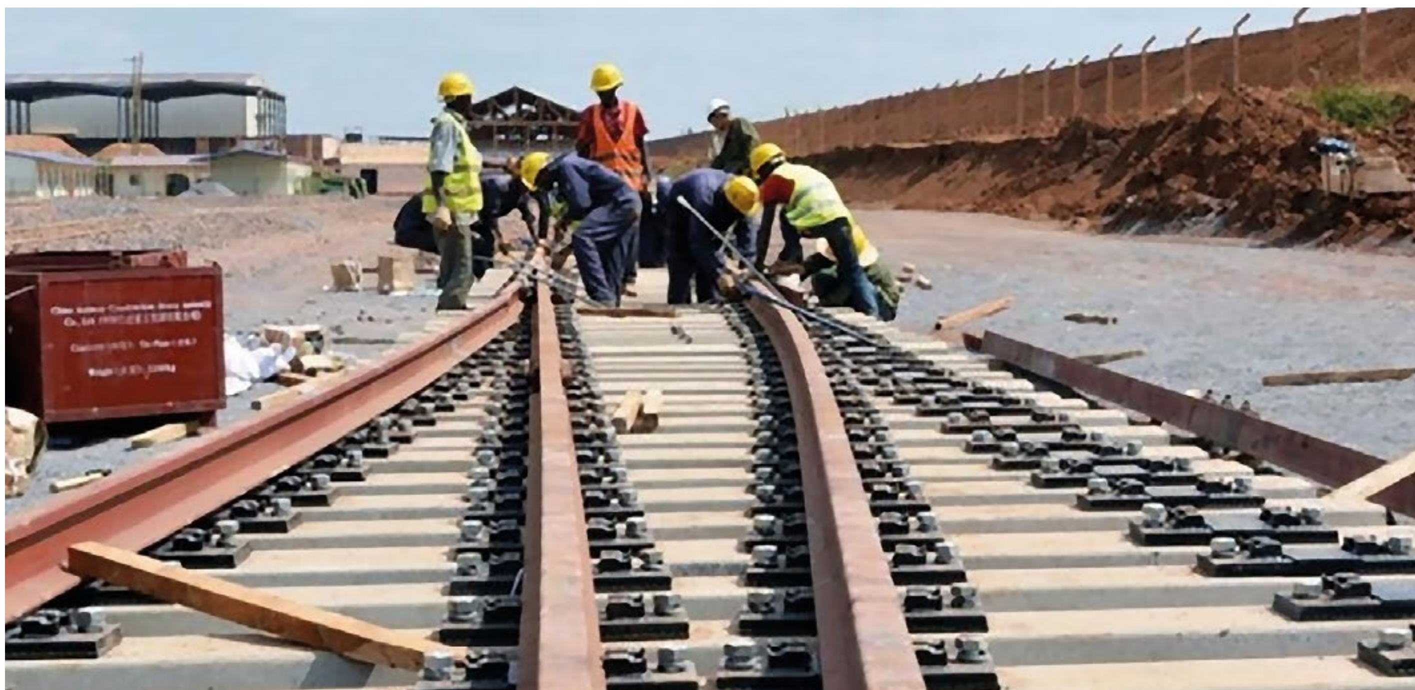
Strong Balance Sheet

With minimal debt, significant cash reserves and a disciplined and selective approach to capital allocation, the Company is well placed to continue its impressive progress, both within Tanzania and in the wider African continent.

For more on our Corporate Social Responsibility turn to pages 10 to 19

TANZANIA

With an average annual growth rate of 6% to 7% over the last decade, Tanzania has the second largest economy in East Africa, one of the world's fastest-growing regions



The country's Development Vision 2025 strategy is focused on industrialization and job creation within the private sector and a key part of this ambitious plan is to provide sustainable energy to meet the demands of an ever-growing population.

Energy Demand

Tanzania is the 6th most populous country in sub-Saharan Africa and its population has nearly doubled to almost 60 million in the last 20 years. With a land area of 950,000 km² it is the world's 23rd largest country, with a population density of around 60 people per km².

Increasing the country's energy supply to match demand is a major priority. The population of Tanzania's largest city, Dar es Salaam, is conservatively estimated to be between 5 million and 6 million and is growing rapidly. To meet such growing energy demand, infrastructural development will require the simultaneous mobilization of significant resources across several areas of the country.

Gateway to East African Trade

Tanzania is well placed to contribute to East Africa's development as one of the world's most dynamic trade hubs, not least due to its coastal location. Many of its neighboring countries have no coastal access and rely on Tanzania to import and export most of their goods.

Malawi produces a large quantity of copper and cobalt for export, and imports manufactured products from China and the Middle East. Rwanda's trading economy is growing at more than 9% per year. The Democratic Republic of Congo's eastern region uses Tanzania's roads for most of its trading. As a member of the East African Community and Southern African Development Community, Tanzania is in a strong position to shape the future of trade on the continent.

Through the above factors, Tanzania's transport and logistics infrastructure is growing rapidly, especially the main international corridors. Railway projects, roads upgrades and airport developments have all been undertaken in recent years and transport and utilities infrastructure projects with a value of $19 billion are being planned. Some of the largest infrastructure projects include:

- The East African Coastal Corridor development project comprising 460 km of highway between Bagamoyo, Tanzania and Mombasa, Kenya
- A 202 km single-track railway between the cities of Dar es Salaam and Morogoro, with an option for an extension to Mwanza, and neighboring countries
- The Dar es Salaam Maritime Gateway Project; a port upgrade doubling throughput capacity
- The Dar es Salaam Rapid Transit; a bus-based mass transit system connecting the suburbs of Dar es Salaam to the central business district.

Songo Songo's Growing Role in Tanzania's Development

The Songo Songo gas project is well positioned to support the development of the country's transportation, energy production, and economic industrialization. A major priority moving forward will be in developing the country's infrastructure and resources to allow natural gas to meet future power demand, a concept that is fast gaining momentum as an abundant, effective, and sustainable energy resource. As the International Energy Agency (IEA) reports:

Tanzania's primary energy supply forecast is aligned with an average increase in emerging countries of 5% to 8% per year, and natural gas will be a key component of this energy supply.

Sustainable Energy

As the diagrams illustrate, a natural gas energy strategy will need to remain a priority for the Government in order to meet future energy demand for communities and across different economic sectors.

A natural gas strategy is also a key pillar in the country's initiative to reduce its carbon footprint. In line with United Nations guidelines, Tanzania is working towards its own set of Intended Nationally Determined Contributions ("INDCs") to mitigate climate change, for full implementation by 2030. They include a commitment to reduce greenhouse gas emissions by 10% to 20% nationwide.

Tanzania's INDCs include:

- Diversifying its energy portfolio to ensure overall energy and economic security through enhanced availability, affordability, and reliability, while reducing its carbon emissions over time
- Promoting the use of clean technologies for power generation through renewable sources such as geothermal, wind, solar, and renewable biomass
- Expanding the use of natural gas for power production, cooking, transport, and thermal services by improving its natural gas supply systems
- Developing low-emission transport systems through mass rapid transport initiatives and investments in air, rail, marine, and road infrastructure

Tanzania has also implemented various other policies, legislations, strategies, plans, and programs to address climate change. These include the National Communications on Climate Change, National Adaptation Programme of Action, and the Natural Gas Policy Act.

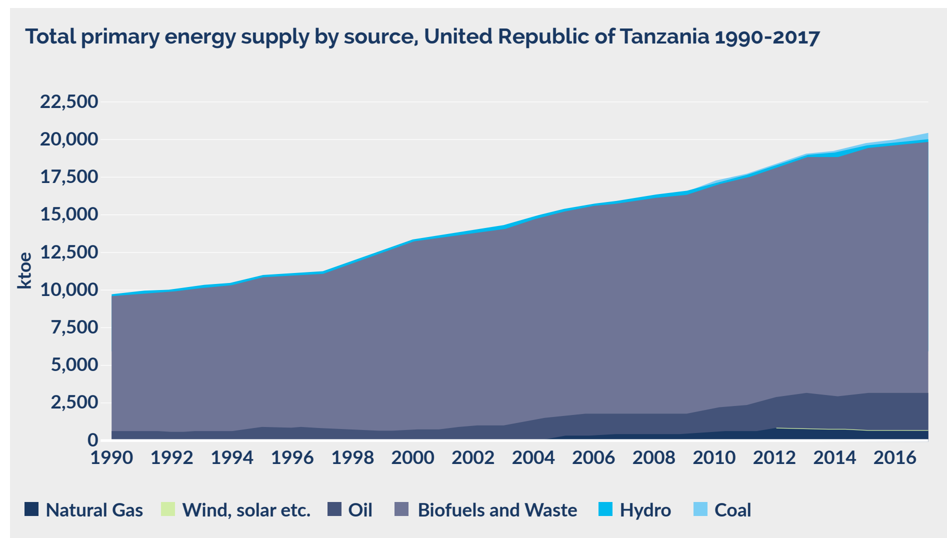
LECB Program

The project supports countries in formulating their Nationally Appropriate Mitigation Actions and in developing measurement, reporting, and verification systems. It is currently supporting Tanzania in refining its INDCs for submission to the United Nations Framework Convention on Climate Change.

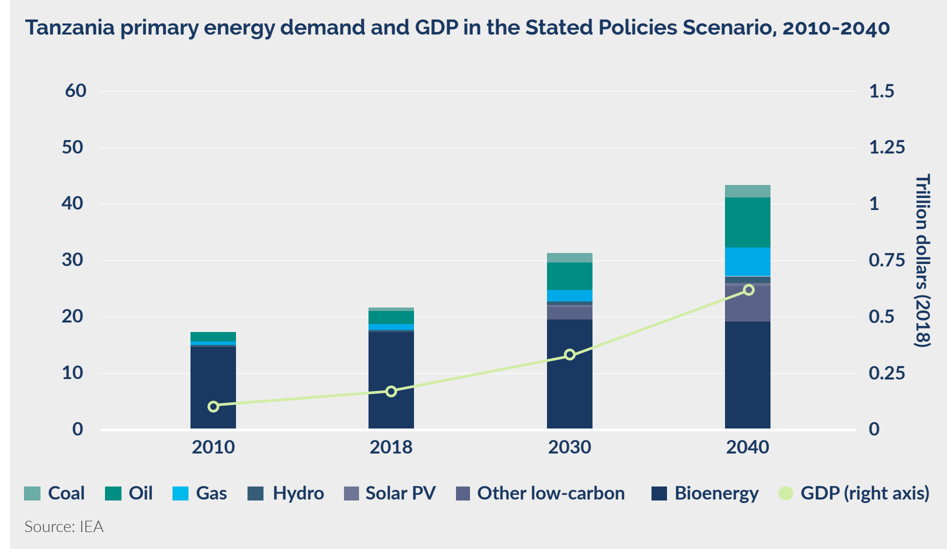
There have been a series of major discoveries in recent years. These developments could fit well with Africa's push for industrial growth and its need for reliable electricity supply (constraining the expansion of more polluting fossil fuels). Much will depend on the price at which gas becomes available, the development of distribution networks (including small-scale liquefied natural gas (LNG) distribution), the financing available for infrastructure, and the strength of policy efforts to displace polluting fuels. In our projections, Africa becomes a major player in natural gas as a producer, consumer, and exporter. Gas demand in Africa doubles to 2040 in the Stated Policies Scenario.

Source: IEA

Total primary energy supply by source, United Republic of Tanzania 1990-2017



Tanzania primary energy demand and GDP in the Stated Policies Scenario, 2010-2040

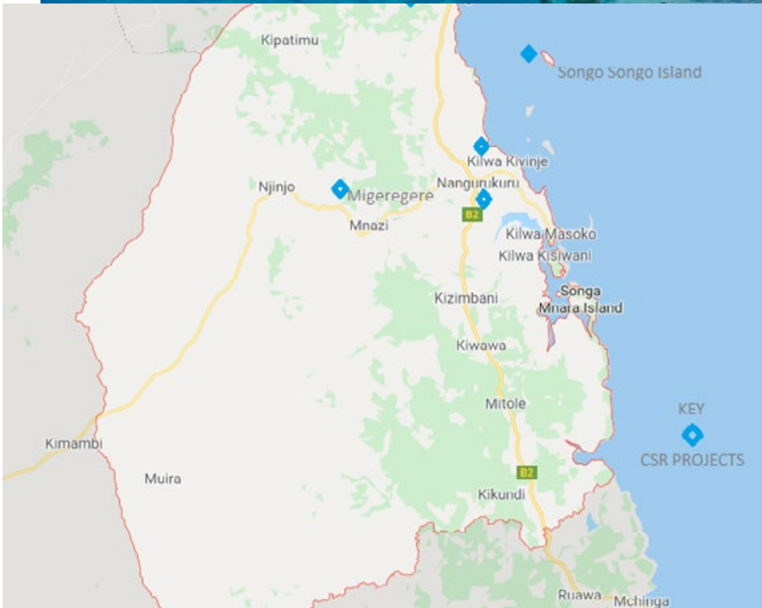


Source: IEA

CORPORATE SOCIAL RESPONSIBILITY

Respecting our social environment

Since the commencement of its operations in Tanzania, the Company has sought to develop a number of self-sustaining education and health projects on SSI and in the surrounding region



SSI forms part of an island archipelago in Tanzania's Lindi region and more specifically within Kilwa District. Occupying around 6 km², it has a small, largely indigenous community of around 7,000 people. The island plays a significant role in the country's oil and gas industry, but fishing and seaweed farming remain its principal economic activities.

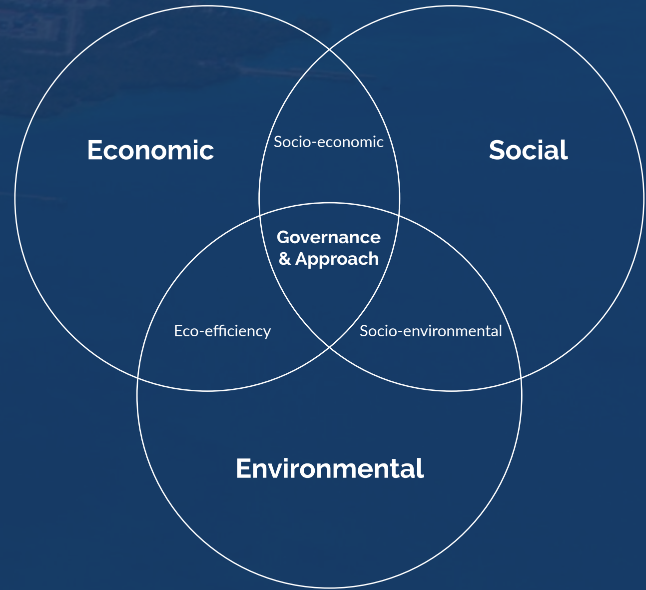
Stakeholder Engagement
Internal and external engagement on material issues

Materiality Analysis
Analysis of material issues and alignment with business strategy

Strategy Definition
Define principles, policies, reporting and governance structure

Orca's Materiality Screen

The first step involved engaging external expertise to assist with identifying an initial list of potentially material environmental, social and governance features (e.g. emissions, health and safety etc.) and issues relevant to us, our business and our stakeholders.



Economic
- Anti-bribery & anti-corruption
- Compliance
- Management systems & approach
- Market behavior & revenue transparency
- Public policy & government relations
- Risk & opportunity
- Value generation & distribution

Environmental
- Air emissions & quality
- Biodiversity
- Climate change & energy
- Decommissioning
- Effluents, emissions, spills, resources & waste
- Emergency preparedness

Social
- Assets & land acquisition
- Asset integrity & process safety
- Cultural heritage
- Customer impact
- Cyber security
- Health, safety & security
- Labor practices & human rights
- Learning & development
- Local & indigenous communities
- Local content
- Supply chain management
- Workplace & social engagement

Governance & Approach
- Management approach
- Energy transition
- Sustainability
- Climate change
- Risk management

Objective & Target Setting
Set sustainability goals and targets for long-term value creation

Progress Review
End of year review, reporting and refinement

Future Steps
Our next steps will include the further refining of this list through consultation with our employees, business partners and other key stakeholders, so we can deliver in the areas that matter most

CORPORATE SOCIAL RESPONSIBILITY CONTINUED

Building a better future for the people of Songo Songo

When initiating the Company's CSR program, the decision was made to prioritize health and the education of young children on SSI and the wider Kilwa District

The Company therefore decided to invest across the educational spectrum through a multifaceted program.

Kindergarten

The first stage was to construct a kindergarten. It opened in September 2011 and comprised two classrooms that could accommodate 135 students daily, functioning toilets, a head-teacher's office, library and play area.

Early learning for ages three to six sets the foundation for improved educational performance at primary level and above. The kindergarten proved to be a fundamental first step in improving the educational prospects for children within SSI's remote community, delivering a significant increase in the availability of first stage education. The reliable childcare provided by the kindergarten staff also allowed more mothers to focus on earning a living, and for girls, traditionally kept at home to focus on household duties, to continue with their own education. To date, more than 1,000 of the island's children have attended SSI kindergarten.

Support to the Secondary School

The Company also commenced a continuous support program to the island's Secondary School, providing books and classroom equipment.

Teacher Training

To ensure facilities were staffed to provide the best available training standards, the Company sponsored three local Songo Songo residents to attend a two-year teacher training program (2011-2012) at Montessori Msimbazi College in Dar es Salaam. This included accommodation, tuition fees, textbooks and return travel to Dar es Salaam. In 2015, as part of the Company's commitment to sustainable projects, the kindergarten was handed over to the community and is now part of the SSI Primary School. The facility now receives educational support from the Government of Tanzania.

Scholarships

The Company continues to run an annual scholarship for SSI's best students, with the aim of improving the educational experience of the children of SSI, thus enabling children to be better equipped to integrate into the national economy, become financially independent, and to support their families and the wider SSI community.

The scholarship funds the best SSI students through a full secondary education program in a selected school in Dar es Salaam. The Company meets all travel costs, school fees, boarding costs, uniform, textbooks and all other school requirements. Since 2011, more than 45 students have benefited from this program, and in academic year 2017/2018, five SSI students went on to higher education.

Today, through the program, five students are undertaking O (Ordinary) Level courses, three are attending A (Advanced) Level courses, and seven are in university or Higher Educational facilities. To the best of the Company's knowledge, no SSI student had ever attended university prior to the introduction of the scholarship program.

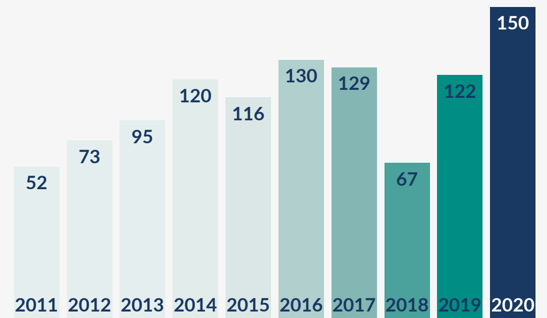
The benefit and motivation the Company's scholarship program has brought to the young people of SSI has been remarkable.

SSI students being presented with laptops and supplies prior to commencing their funded university education

SSI kindergarten pupils

SSI Kindergarten

Pupils attending SSI kindergarten



CORPORATE SOCIAL RESPONSIBILITY CONTINUED

Girls' Dormitory

In the past, island culture has not always placed the same emphasis on the education of females as for males. Females have often been kept from school or made to return home to focus on domestic chores rather than schoolwork. To address this, the Company constructed a girls' dormitory, able to accommodate 55 students in a learning-orientated environment. The dormitory was handed over to the community in 2013 and has seen 187 female students utilize the facility.

SSI Secondary School Science Laboratory

In 2015, the Company funded the construction of a multi-purpose science laboratory for the SSI Secondary School. This initiative was seen as an important step in helping Kilwa District Council achieve the national target set by the former Tanzanian President Jakaya Kikwete, which requires every secondary school to have a science laboratory. To date, nearly 600 students have used the laboratory. The Company also donated 1,500 bags of cement to Kilwa District Council to support construction of laboratories in other schools in the area.

English Language Training

The Company has not confined its educational program to SSI alone. Kilwa District also covers part of the mainland in a rural area of Tanzania. Until the passing of recent Government reforms that guarantee free access to education for all, many had limited opportunity to undertake formal schooling. Where they did have such an opportunity, primary education was delivered in Kiswahili (Swahili language), while secondary education was almost entirely in English. In rural parts of Tanzania, children often have very little exposure to the English language and leave primary school with almost no English competency. This means when they start secondary education, they struggle to learn and can often lag behind.

In 2011, the Company's former Chairman, David Lyons, undertook to change this situation and privately funded trials to deliver an intensive six-week language orientation program in selected schools in Tanzania's Mafia District, to see whether pass rates could be improved. To facilitate the delivery of the program, schools were equipped with solar power systems and low power IT and presentational equipment.

Girls' dormitory at SSI Secondary School

SSI Secondary School laboratory

Success Story: Haji Omari Naoda

Haji is a 3rd year student studying a Bachelor of Commerce in Marketing at the University of Dodoma, the Tanzanian capital.

Haji was raised by a single mother, as his father passed away a few months before he was born. His mother is a housewife and a small-scale seaweed farmer. Haji is the last-born sibling and only boy in the family. He has four sisters who only completed primary school education and are married and residing on SSI.

In 2011, when the Company introduced its scholarship program for the best SSI students, Haji was one of the first 10 beneficiaries. The Company paid for Haji to attend secondary school in Dar es Salaam where he excelled. He went on to do equally well at A-level, and in 2017 attained sufficient pass marks to qualify for university. Throughout, the Company has covered the costs of Haji's travel to and from SSI during school breaks, all school fees, boarding costs, uniform, textbooks and all other school requirements. Even with his obvious intellect, it is highly unlikely Haji would have followed this path without the Company's support.

Always eager to learn, in 2019 Haji also completed an internship with the Company in the Finance Department in Dar es Salaam. Finance Manager, Obeid Kitalima, said:

"I am very impressed with how this man works. He has got a very bright future ahead as he has self-discipline and follows instructions well."

Haji is a role model for other students on the island. When he is on vacation, he uses his spare time to volunteer and teach bookkeeping and mathematics at the SSI Secondary School. He is hopeful that when he finishes his studies, he will be able to get a good job so that he can support his family.

In 2013, the Company adopted the program, initially rolling it out into 10 schools in Kilwa District, and a further six in Mafia District. Since then, the Company has grown the program across 27 schools in Kilwa District, training nearly 14,000 students in the process. Part-way through the roll-out, the Company moved away from training international volunteer teachers to deliver the courses, and started training local teachers. A total of 220 local teachers have now been trained since the program's inception. The local schools are now largely self-sufficient in delivering the training, with the Company providing IT upgrades and monitoring of the delivery of training when required.

The English Language orientation program has had a significant impact on the educational standards and subsequent graduation rates throughout Kilwa District. An average of 82% of Form 2 students have passed in Division IV or above in the past five years, with 28% passing in Division III or above – the grades required to stand a reasonable chance of entering higher education. 66% of Form 4 students passed in Division IV or above, with 18% passing above Division III. From a baseline of 3% and 1.24% in 2010 and 2011 respectively, to today, the improvement in numbers graduating with good grades has been considerable.

Students who have undertaken the training have clearly enjoyed the experience and recognized the value it has brought to their own educational prospects.

Desk Donation

In 2015, His Excellency Dr. John Joseph Pombe Magufuli, President of Tanzania, wanted to ensure that all school children had desks in the classroom, a resource sadly lacking in many parts of the country at the time, with a reported shortage totaling 1.4 million. Desk donation campaigns were encouraged countrywide.

In June 2016, the Company donated 800 three-person desks for primary schools in Kilwa District. The handover ceremony took place at Masoko Primary School with Kilwa District Commissioner Hon. Juma Njwayo as guest of honor. The support allows approximately 2,400 students every year to access education in comfortable conditions that are conducive to effective learning. The contractor who was awarded this large carpentry task was also from Kilwa, boosting the local economy in the process.

It helped me pronounce words, increase the speed in reading and it helped my reading

Student, Micheni Secondary School

This course has helped me a lot. I can now engage/capitalize on my education

Mariamu Saidi Student, Mibuyuni Secondary School

Phonics is the foundation we need to read and write. If you know how to sound out the letter and then to blend sounds, then any word can be read

Zainabu Ally Student, Ilulu Secondary School

All of the methods of teaching used should be continued since they are all important to us. When you talk about phonics, it helps us to speak good English, and computer programs help us to learn with actions and for this reason we cannot forget easily. It is short and clear that all the methods used in this course for teaching us are important

Fatma Jumanne Student, Ilulu Secondary School

CORPORATE SOCIAL RESPONSIBILITY CONTINUED

Ensuring a proper healthcare service

As with education, in many of Tanzania's remote communities, timely access to good quality healthcare is by no means guaranteed. The country's health system is developing, but many hospitals and medical centers are privately run and unaffordable to most.

Similarly, they tend to be located in and around district or regional centers. Villagers often have limited access to transport options, so they may have to travel long distances to receive treatment. Suitable accommodation at the other end is also not guaranteed. Receiving long-term treatment can often be costly and impractical, and for some it is just not possible.

In Kilwa District, the Company has made significant investments to develop accessible, clean, well equipped and properly staffed medical centers in the areas that need them most. Projects were selected on the basis of genuine need with guarantees from district councils that the facilities would be properly maintained. Recent projects include:

Nangurukuru Dispensary

Nangurukuru is a business center of Kilwa District Council, situated in the Kivinje Singino ward (one of 23 'wards' or 'areas' within Kilwa District). It is around 30 km from the district center and approximately 300 km from Dar es Salaam, with a population of approximately 19,000. For a long time, there were no health services in the area at all, placing many of the vulnerable and weak at considerable risk. This was especially applicable to pregnant mothers who would often walk more than 10 km to receive treatment or assessment. To overcome this, and to their immense credit, the community decided to construct a dispensary for themselves. They managed it up to lintel level but struggled to complete the facility.

Recognizing the endeavors of the community, in 2014 the Company funded the completion of the community dispensary, including construction of an outpatient department, a maternal and child health ward, maternity wing, incinerator, and public toilets to serve the facility.

The dispensary has had a significant positive effect on the local community, providing easily accessible medical support to locals and transit passengers commuting from Kilwa to southern regions, and also to pregnant mothers, children and the sick and injured in the region. Since inauguration, the facility has treated nearly 15,000 patients.

Nangurukuru Dispensary

Staff Housing, Nangurukuru

Maternity Waiting Home at Kilwa Kivinje

Staff Housing at Nangurukuru

The Company also constructed housing through two residential buildings to accommodate medical staff working at the newly constructed Nangurukuru Dispensary. This means the dispensary can remain open for longer hours, provide 24-hour service in special circumstances and deliver services to a far greater number of people. The project was delivered by a local construction firm using local labor and locally sourced building materials, ensuring that the economic benefit and new skills were retained by the community.

Maternity Waiting Home

In a bid to support the district's effort to reduce child mortality, the Company constructed and fully furnished a maternity waiting home at the Kilwa District Hospital. This inpatient facility is close to a fully staffed hospital where pregnant ladies defined as high risk, or with complications, can prepare for their delivery in clean and comfortable surroundings. They can also be quickly transferred to the nearby hospital with access to the highest level of care and treatment available in the area. To-date, over 300 expectant mothers have used the facility.

Children Cancer Initiative

It is crucial that a child with cancer is within no more than a day's travel from an appropriate treatment site, to provide the best possible chance of survival. Late presentation, misdiagnosis and inability to pay for travel are all factors that impact the chance of a sick child becoming well again. Yet, before the start of national efforts to bring about significant change in the neglected field of child cancer diagnosis and treatment, only 10% of Tanzanian children with cancer were able to reach treatment facilities. Of those, nine out of ten died. In overall terms, a cancer diagnosis was fatal for almost every child in the country.

In 2004, Tanzania's first children's cancer ward was opened, and within three years cure rates for Burkitt Lymphoma, at the time the country's most common children's cancer, improved by more than 70%.

In the ensuing years, through a combination of Government, NGO, charity and volunteer medical professional initiatives, diagnosis and treatment have gone from strength to strength, although typically focused in the Dar es Salaam region.

In 2011, Tumaini La Maisha (TLM), a children's cancer charity, was established in Tanzania. TLM (Hope for Life), is a Tanzanian based NGO dedicated to providing free and curative care for all children with cancer and wider family support. In partnership with the Government of Tanzania, it provides both clinical and non-clinical supportive services.

Children at TLM celebrating the donation made by the Company

In 2016, TLM launched a National Expansion Plan of Paediatric Oncology Care (centrally coordinated) to other regions of the country. Several collaborations have now been formed with centers across Tanzania, who now enjoy free access to chemotherapy, diagnostic pathology services, transport and procurement.

In October 2019, the Company signed a memorandum of understanding with TLM to support the delivery of pediatric oncology services in Sokoine Referral Hospital in Lindi region. In what is intended to be a long-term relationship with the charity, the Company's support will fund the establishment of a new treatment site, which the Company believes will make a substantial contribution to the continued success of increasing survival rates of childhood cancer in Tanzania. The Company intends to support one location in year one, two in year two and three in year three. By the end of year three, each new location should be self-sufficient, whereupon the Company alongside TLM will identify new locations where it can offer support.

The Company has donated $20,000 to TLM to ensure that the vital treatment that has saved the lives of so many Tanzanian children is not interrupted during the uncertain times of COVID-19. The donation will assist TLM in sustaining its incredible, lifesaving work, by ensuring medical supplies remain available.

Ongoing construction projects

Somanga Health Center

The remote area of Somanga comprises five villages with a population of approximately 10,000. The distance to Kilwa District Hospital is 62 km. Localized medical facilities were considered critical, and in 2019 the Company commenced construction of the Somanga Health Center, one of its largest healthcare projects to-date.

The facility will be extremely well equipped and the Government of Tanzania will contribute X-ray machines, surgery equipment, beds, mortuary equipment and laboratory equipment. The completed facility will allow all community members, plus an estimated additional 2,000 people from the surrounding area, to access a broad range of high-quality healthcare. The Company expects to hand over the project in Q2 2020.

Mortuary Building – Kinyonga District Hospital, Kilwa Kivinje

The Kinyonga District Hospital at Kilwa Kivinje is a referral center that receives patients from health centers and clinics in rural and urban areas of the wider Kilwa District. The hospital is located close to the main road that leads from Mtwara in the south to Dar es Salaam in the north.

It is approximately 360 km from Dar es Salaam and 200 km from the Lindi Regional Hospital. The catchment area for Kinyong is therefore vast, making it a vital support hub for a large swathe of the district community, and for travelers who use the main road from Dar es Salaam to Mtwara and Ruvuma regions. For many years, the hospital has had a dilapidated mortuary facility with poor infrastructure which made it unfit for purpose.

Recognizing the health and compassionate requirements for an operable mortuary, the Company is funding the construction of a modern facility, which is due for completion in Q2 2020.

District Pharmacy Block – Kilwa Kivinje

The Government of Tanzania recently directed that each council establishes a pharmacy to ensure the availability of reliable medicines for community members receiving service at all district hospitals and health centers. In line with this, the Company has recently funded the construction of a pharmacy block at Kilwa Kivinje.

The project is expected to reduce incidences of medicine deficiency in district hospitals and health centers, provide easier access to medicines, create employment, and generate revenues to improve other healthcare services, including infrastructure for rehabilitation. The Company expects to hand over the project in Q2 2020.

OUR PEOPLE

A talented and committed workforce

The Company has invested significant time and resource into complying with Tanzania's rapidly emerging regulatory requirements, while ensuring preservation of its rights and entitlements provided with the PSA framework

Until recently, the oil and gas industry in Tanzania lacked the regulations and governing laws often found elsewhere. In these circumstances, the Company adopted internationally recognized oilfield standards and ensured compliance with the Songo Songo agreements. Over the past few years however, the Tanzanian petroleum legal framework has been developed in an effort to bring the sector in line with current international standards. In response the Company has employed a locally recruited, legally trained Compliance Officer.

Amongst the many new regulations that have been introduced, the Petroleum (Local Content) Regulations 2017 are amongst the most developed and far-reaching. The regulations have established minimum levels for employment of Tanzanians, participation of Tanzanian companies in projects, and procurement of local goods and services. Companies must always seek to employ qualified Tanzanians first, award contracts to Tanzanian service providers, even if they are marginally more expensive than international bidders, and procure from Tanzanian suppliers if the goods are available in-country. With highly punitive measures available to the regulators in the event of a breach, and in recognition of the importance of developing Local Content, the Company makes every effort to remain compliant.

Indeed, almost 20 years since the Songo Songo agreements were signed, the Company has in many ways exceeded the requirements established under the Local Content Regulations, particularly in the area of local employment.

Tanzanian Workforce and Staff Development

As the first gas operator in Tanzania, the Company has fully recognized its responsibility to train and develop a competent Tanzanian workforce that could eventually take on major management and technical roles. The Company also sought to develop a support sector capable of sustaining wider industry in Tanzania. To do this, the Company adopted a Recruit, Train, Mentor, Enable and Support approach to eventually transition from an expatriate-heavy organization to one that is largely Tanzanian-led.

Recruiting

From the outset, the Company's recruitment strategy was to hire a strong mix of experienced expatriates to work alongside a range of the brightest Tanzanian engineers and other professionals with appropriate educational backgrounds, who could be trained and developed to eventually lead the Company across a range of the most challenging disciplines. The Company has always firmly believed in leaving a legacy in Tanzania. It has sought local staff who it believes can excel, not just in Tanzania but within the wider global industry.

Building such a team was not straightforward. Relevant experience within the country was limited, and being a nascent industry in Tanzania, those with the right potential were understandably nervous of joining the organization. However, the Company's previous successes, as well as its strong ethical approach to employment and operations, eventually started to attract the right people and the team began to develop.

Training

Understandably, a great deal of time and resource had to be placed into training local employees to operate independently, or with decreasing levels of expatriate guidance. Following recruitment, the Company initially focused on developing a robust engineering team with the ability to participate across the range of disciplines found in an upstream to downstream gas company.

Plant maintenance, subsurface analysis, well services, downstream construction, maintenance and repair were just some of the disciplines the Company concentrated on. It also placed increasing emphasis on the support services and skills required to sustain the operation. It undertook HR, logistics, oil and gas accounting, HSE and project management training at a variety of international and local training organizations.

The Company's people investment has been significant. With more than $1.2 million spent on staff training in the past seven years alone, it has provided some of the best oil and gas industry-related education available.

Mentoring and Enabling

Over time, and with focused training as described, the Company was able to start placing Tanzanians into many leadership or demanding technical roles, with expatriates mentoring them on a daily basis. Tanzanian staff continued to have the benefit of enabling support from international consultants and service providers when undertaking the most technically demanding of jobs, where such support was warranted.

Supporting

Through the Mentoring and Enabling process, the Company was able to reduce expatriate supervision and take on more of a supporting role, often from locations outside of Tanzania. The benefit of experience was still available to the team, but in most cases Tanzanians led everyday operations, with the ability to reach back for advice where necessary.

Today, after 15 years of operations, the Company's training and development approach has been highly successful. The team in Tanzania now numbers 102 employees, of which only two are expatriates. All departments, with the exception of operations, are managed by Tanzanians, most of whom have been with the Company for more than 10 years, and some since operations commenced.

Bizimana Ntuyabaliwe MBA

Bizimana started his career in the telecoms industry back in 2002 as a Junior Accounts Officer responsible for stocks, sales and cost of sales, bank reconciliations and deferred income reconciliation. After four years and internal promotions, he saw greater opportunity elsewhere and in January 2006 he joined Coca Cola Kwanza Tanzania Limited as an Assistant Finance Manager, where his responsibilities included reviewing weekly and monthly bank reconciliations, ensuring appropriate actions on outstanding balances, and supervising fixed assets accounting in compliance with International Financial and Reporting Standards. After only 10 months, he was promoted to Regional Finance Manager, Mbeya Region, responsible for the region's finance competency including property, plant and equipment, accounts receivables, accounts payables, bank and cash, settlement and procurement.

In January 2008, Bizimana joined the Company as a young Management Accountant. He says he chose to join the Company because:

"By then, in 2008, the oil and gas industry was a new growing industry with a lot of prospects for the country. I wanted to be part of that good story. At that time and even now, the Company was the leading gas field operator in the country with already signed gas sales agreements with TANESCO and several industries in Dar es Salaam."

Bizimana was quickly recognized as a rising star within the organization, and in 2011 was promoted to Business Analyst, reporting to Deputy General Manager. In 2012, he was promoted again to Commercial Manager, with greater responsibility, including the management of legal and documents control, procurement and Local Content.

As Commercial Manager, Bizimana developed a deep understanding of the Company's major contracts and agreements with senior stakeholders down to smaller customers. His knowledge, inquisitive mind and willingness to challenge conventional thinking set him aside from many of his peers, and in 2019 he was promoted to Deputy Managing Director in Tanzania, a role he fills today.

Bizimana is clear he made the right choice in joining the Company in 2008. He says:

"My intuition regarding the potential of the Company, and my potential within the Company, did not let me down. My current promotion means so much for my career. Having occupied different positions in the Finance and Commercial departments, I consider the promotion to the position of Deputy Managing Director as a big step higher in my life and my career. I appreciate the trust and the confidence put in me by the Company. It's an opportunity for me to learn more about the operations in the Company. When I look back at the level I joined the Company at, and what I have been able to achieve now, it is evident that the Company values what I do, and that my commitment and loyalty is recognized by the management. I believe my promotion from relatively junior levels serves as motivation for other staff to see the sky is the limit."

Sabas Oisso

Sabas is the Company's Downstream Manager in Tanzania. He joined the Company in September 2014 as Projects and Process Engineer, having completed his Bachelor's Degree in Petroleum Engineering from the University of Dodoma. It was his first job after graduating.

Sabas quickly showed potential and took a prominent role in several projects, including MEG Regeneration System maintenance, connection of SS-11 well to SS-3 well jumper lines, design and fabrication of wellhead spools, coflex pipe relocation, and interconnection of SS-11 well and SS-12 well to the NNGI. Sabas proved he was capable of leading these projects across a full range of responsibilities, from design, drafting of drawings, outlining technical specifications and tendering, to ordering and procurement of materials, tools, equipment, consumables and personnel. He required minimum supervision, and quickly stood out as a dedicated, talented engineer and a great asset to the Company.

Sabas' consistent performance caught the eyes of management, and in 2018 he was promoted to the role of Downstream Manager. This was a significant challenge for such a young engineer. Not only did he find himself thrust into a senior leadership role, almost immediately he was required to build a team, establish equipment and materials, and take on full responsibility for all downstream operations from a foreign service company that had led the work for almost 14 years. Of course, Sabas was supported by management, but he quickly started to establish himself as a manager in his own right. He took to the role with enthusiasm and confidence, and the transition from contractor to an entirely Tanzanian in-house team has been carried out seamlessly.

Sabas and his team carry significant responsibility, ensuring the supply of natural gas to existing customers, and the Company's CNG mother station and daughter stations, in a safe and efficient manner with no significant downtime. His rise to a senior management position has been meteoric, but indicative of what can be achieved within the Company. Sabas says:

"I had been lucky enough to do a 6-month internship at the Company during my college studies and I liked what the Company did. Then, after graduating I applied for the role of Projects and Process Engineer and met the Managing Director on my second recruitment interview to briefly discuss my career within the Company. I knew then that this would be the right company in which to start my career.

The promotion to the role of Downstream Operation Manager means so much to me. The trust and confidence the Company has placed in me with such big responsibility is huge, so I will honor this by doing the best job I can. The promotion has given me obvious social and financial rewards, which I am proud of. I am confident I can and will grow further in the industry and the Company, and that this is not the end of my career journey."

COMPANY OPERATIONS

Songo Songo

The Company, through its subsidiary PanAfrican Energy Tanzania, is the holder of the Songo Songo license. This comprises two discovery blocks covering approximately 170 km² and contains the Songo Songo Gas Field which is partly onshore and partly offshore SSI.

Natural gas was discovered on the license by AGIP in 1974 when well SS-1 was drilled north of SSI in an area now known as Songo Songo North, and gas was tested in two intervals. However, the well was plugged and abandoned, and the permit relinquished to the TPDC.

In 1976, TPDC embarked upon a campaign to further explore and appraise the Songo Songo structure; drilling a further eight wells on and around the field and in 1978, acquired 450 km of 2D seismic data. Further drilling occurred in 1981 and 1982 and in 1991, Ocelot International Inc., a predecessor of the Company, entered into an agreement with TPDC to evaluate the economic viability of developing the Songo Songo Gas Field to generate electricity. An extensive well test program and a minor reconditioning program were conducted in 1997 on five of the wells and the results were used to prepare a full-field reservoir model. After further studies confirmed sufficient quantities of gas to supply a gas-to-electricity project, a formal development plan was submitted in May 2001. The project agreements, including a Production Sharing Agreement ("PSA"), were ultimately signed by the Company in October 2001, and gas production commenced in June 2004 from five of the wells originally drilled by TPDC (wells SS-3, SS-4, SS-5, SS-7 and SS-9). The Company subsequently drilled a further three wells: SS-10 in 2010, SS-11 in 2012 and SS-12 in 2016.

The PSA defines the gas produced from the Songo Songo Gas Field as "Protected Gas" and "Additional Gas". The Protected Gas is owned by TPDC and is sold under a 20-year gas agreement (until July 31, 2024) to Songas. Songas utilizes the Protected Gas to fuel its gas turbine electricity generators and for onward sale to the Tanzania Portland Cement Company ("TPCC") and for village electrification.

Protected Gas is capped at a maximum of 45 MMcfd per day. The Company receives no revenue for the Protected Gas delivered to Songas and operates the original wells and gas processing plant on a 'no gain no loss' basis. Under the PSA, the Company has the right to produce and market all gas in the Songo Songo Block in excess of the Protected Gas requirements ("Additional Gas") until the PSA expires in October 2026.

Upstream Operations

Production Facilities

Gas currently produced from the Songo Songo field can be processed and transported to market through two separate infrastructure systems namely the:

- Songas Infrastructure; and
- NNGI.

The Songas Infrastructure consists of a gas processing plant with a current capacity of 110 MMcfd, a 12" sub-sea export line from SSI to the mainland and a 16" landline north to Dar es Salaam. The maximum capacity of the pipeline system is 102 MMcfd. The Company operates the gas processing facilities on behalf of Songas.

The NNGI is the gas processing and pipeline infrastructure that is owned and operated by TPDC and was commissioned in 2016. On SSI, the NNGI consists of a 140 MMcfd gas processing facility that connects to a 24" offshore pipeline with a capacity of 196 MMcfd. On the mainland, this feeds in to a 784 MMcfd capacity 36" pipeline that transports the gas to Dar es Salaam.

At the end of 2018, the Company entered into an arrangement that allowed the sale of Additional Gas through the NNGI to meet emergent power and industrial demand, and in 2019 signed a Long-term Gas Sales Agreement with TPDC to supply 20 MMcfd to the NNGI. This was subsequently increased to 30 MMcfd.

All wells, with the exception of SS-12, are tied in to the Songas Infrastructure whilst SS-12 is tied into the NNGI gas processing facility in the south of the island. SS-11 is tied into both plants and capable of flowing to both simultaneously. All wells are tied in via either 4" or 6" flowlines.

2019 Production

Protected Gas delivered to Songas averaged 40 MMcfd during the year.

Additional Gas production averaged 63 MMcfd, of which 13 MMcfd was supplied to industrial customers and the balance of 50 MMcfd was sold to the power sector. These volumes represent a substantial increase over 2018 Additional Gas production which averaged 40 MMcfd.

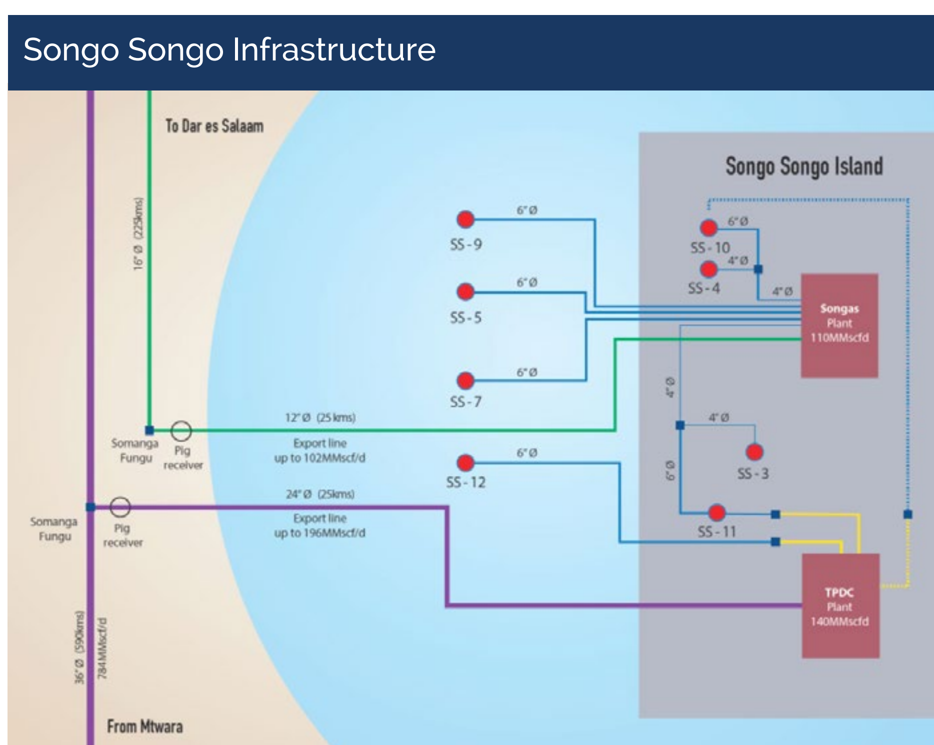
In November 2019, the Company achieved its highest daily production of 132.4 MMcfd.

Current Well Status and Deliverability

As at December 31, 2019 the Company had a well production potential of 172 MMcfd, limited by processing and transportation infrastructure, and by contract, to approximately 135 MMcfd.

Well SS-3 is currently suspended and well SS-4 and well SS-7 have been shut-in. Limited sand production has been identified in well SS-4 and well SS-7.

Songo Songo Infrastructure



Well	Tubing Size	Material	Status	Tie-in location and production potential	
				Songas infrastructure MMcfd	NNGI MMcfd
SS-3	2 7/8"	Carbon Steel	Suspended	–	–
SS-4	2 7/8"	Carbon Steel	Shut-in	–	–
SS-5	4 1/2"	13% Chrome	Producing	27	–
SS-7	4 1/2"	13% Chrome	Shut-in	–	–
SS-9	4 1/2"	13% Chrome	Producing	24	–
SS-10	5"	Carbon Steel	Producing	29	–
SS-11[1]	5 1/2"	13% Chrome	Producing	–	52
SS-12	4 1/2"	13% Chrome	Producing	–	40
			Total	**80**	**92**
					172

[1] SS-11 is tied into both Songas Infrastructure and the NNGI. It is currently tied into the Songas Infrastructure where production is limited to 24 MMcfd.

The Company is evaluating the merits of conducting workovers on well SS-3 and well SS-4 (both onshore wells) in 2020. The Company is planning to recomplete the SS-10 well with chrome tubing during 2020 to address the gradual corrosion of the existing carbon steel completions. Well SS-7 is an offshore well and will remain shut-in until a suitable opportunity is identified to efficiently address production issues as part of a wider development plan.

As at December 31, 2019 well SS-11 is tied into both the Songas Infrastructure and the NNGI but aligned and supplying gas only to the Songas Infrastructure. Well SS-12 is only tied into the NNGI. The facilities for the connection of well SS-10 to the NNGI are available and the connection can be completed when required. It is currently anticipated that well SS-10 will be realigned and interconnected as and when further volumes to the NNGI are required.

COMPANY OPERATIONS CONTINUED

Sustaining production

Until well SS-12 began producing through the NNGI on SSI in December 2018, production had been limited to 97 MMcfd due to a combination of Songas Infrastructure capacity limitations and reservoir pressure decline.

During 2019, the Company commenced or completed several further initiatives aimed at sustaining and increasing gas production from its current capacity of 135 MMcfd to approximately 172 MMcfd. These included:

Generator Optimization

The Songas Infrastructure includes three 365 kilowatt ("kW") dual fuel gas engine generators that are intended to operate in a 2n+1 configuration. These met the plant's original power demand and retained spare capacity for unscheduled downtime or maintenance. However, over the course of 15 years of operation, the generators have lost some capacity whilst power demand, particularly following installation of refrigeration, has increased. To counter this, in 2019 the Company carried out major overhauls on two of the three generators and ran an onsite tuning program for all three units and they now generate 716 kW with two units or 1,075 kW using all three units.

Flowline Decoupling

The configuration of the existing infrastructure was reviewed to unlock additional production. SS-10 well and SS-11 well currently have 6" flowlines coupled to the 4" flowlines of SS-4 well and SS-3 well and this creates a bottleneck. By connecting SS-10 well and SS-11 well directly to the inlet manifold via a 6" flowline, an additional 10 MMcfd of production will be unlocked. The $1.3 million project will be completed in Q2 2020.

Planned Compression for the Songas Infrastructure

To further sustain the delivery of gas to Dar es Salaam at required specification and pressures, in December 2019 the Company signed a Letter of Intent with an international engineering company to carry out detailed engineering and design for the next phase: the addition of compression facilities. The Company expects to sign contracts with the same company in Q2 2020. The total contract value is expected to be in the region of $38 million and the compression system is expected to be fully functional by the end of Q1 2022.

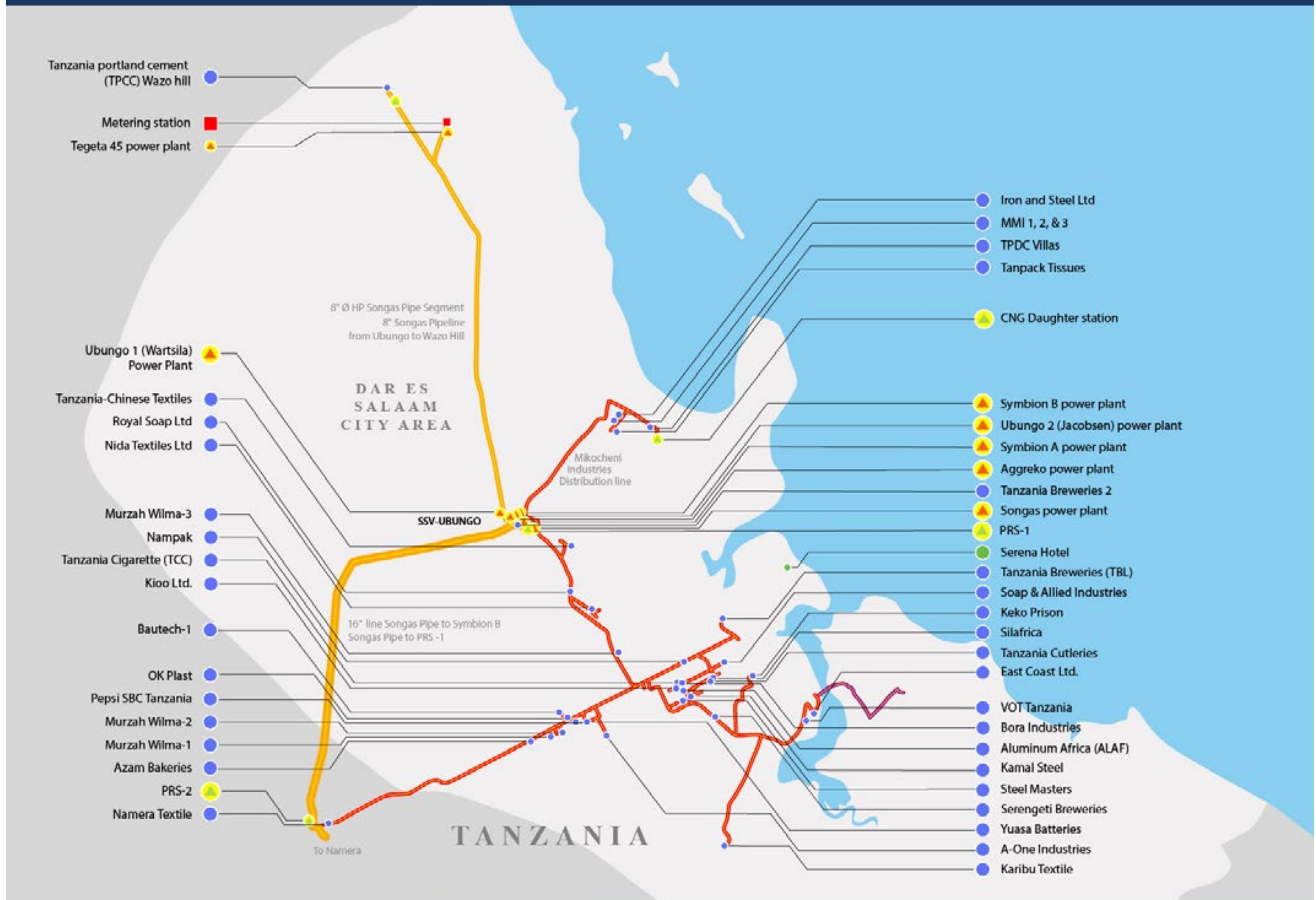
Refrigeration for the Songas Infrastructure

The Company is required to deliver gas to the Songas power generation plant in Dar es Salaam at more than 50 barg (the arrival pressure). This necessitates an inlet pressure of 110 barg and temperatures of no more than 20°C (68°F) at the start of the 225 km pipeline system that transports the gas from SSI. After 15 years of production, the declining reservoir pressures have made the delivery specifications difficult to achieve.

To address this, in June 2019 the Company finalized the installation and commissioned an $8.5 million closed loop mechanical refrigeration system.

COMPANY OPERATIONS CONTINUED

Downstream Network



Downstream Operations

Distribution and Marketing

After the gas has been processed on SSI and transported to Dar es Salaam, the majority of Additional Gas marketed by the Company is supplied directly through 16” and 8” high pressure pipelines to the Songas and TANESCO power plants at Ubungo and Tegeta. This supply and subsequent power generation was East Africa’s first gas-to-electricity project. The balance of the gas is supplied to a large cement factory at Wazo Hill and more than 40 industrial customers through a 50 km low-pressure ring-main distribution system in Dar es Salaam. The customers cover a range of industries including steel, glass, textiles, beverages, tobacco, cooking oils, flour and other products from arable farming, a prison, the hotel industry, cleaning products, cement and paper. The gas is also used by the Company’s customers for the generation of captive power. This low-pressure network is owned and operated by the Company.

Natural gas now accounts for 60% to 70% of Tanzania’s total generated power, with hydro-power responsible for the remainder. Other than very isolated regions, the use of liquid fuels to generate power has been entirely displaced. This can vary during the country's long and short rains when hydro power can be increased significantly.

The Company supplies gas directly to three of the six major power stations connected to the national grid, and indirectly to the remaining three via well-head sales of gas to TPDC into the NNGI. The Company estimates that the power generated from gas provided by the Songo Songo field has resulted in cost savings to Tanzania (compared to liquid fuels) estimated at more than $10 billion over the last 15 years.

2019 Downstream Activities

2019 was an active year for the Company’s downstream operation. Over the course of the past 15 years, the downstream ring-main and supporting infrastructure was installed by a third-party contractor, with support from a small number of local Company employees. However, at the end of 2018 the Company took on sole responsibility for all downstream operations; a 14-strong downstream team was recruited and an office was established in Ubungo, at the heart of the ring-main. However, this coincided with the progress of a number of strategic projects as part of the country’s drive towards upgrading infrastructure and transportation links. Two of those projects were the construction of the Dar es Salaam to Morogoro section of the Standard Gauge Railway ("SGR") through the center of Dar es Salaam, and the construction of multiple Bus Rapid Transport (“BRT”) lanes throughout the city. These jointly had a significant impact on the long-established wayleaves for the gas distribution ring-main.

Tanzania Portland Cement Company

One of the first and largest industrial customers supplied by the Company is TPCC located at Wazo Hill, approximately 25 km north of Dar es Salaam.

TPCC is part of the multinational Heidelberg Cement Group. It uses the gas to heat kilns as part of its production process, displacing the use of expensive heavy Fuel Oil ("HFO") in the process. In doing so, the cost savings it has achieved have allowed TPCC to increase production from 600,000 tonnes to more than 1,000,000 tonnes per annum.

TPCC have stated:

"The decision by the company to switch to natural gas has had a huge effect on the business. The supply is far more reliable, the heating effect more consistent and the management of inventory far simpler. It has completely cut out fuel theft and made management of the business and operations easier. But, for a company such as TPCC, an equally important benefit of using natural gas is the impact on our carbon emissions. We take the matter very seriously. In 2019 our consumption of gas was in the order of 2,800TJ, resulting in around 159,000 tonnes of CO_2 emissions. If we had used HFO like we used to, we would have emitted almost 218,000 tonnes of CO_2. The difference of almost 60,000 tonnes is considerable."

The 202 km Dar es Salaam to Morogoro phase of the SGR is the most critical section of the overall 1,224 km construction, accounting for 33 million cubic meters of excavation work, the installation of 96 pieces of 6,500 meter-long bridge and overpasses, 460 culverts, as well as the construction of stations and maintenance facilities. When the five-part line is completed, it will connect Uganda, Rwanda, Democratic Republic of Congo and Tanzania, and provide access to the Indian Ocean for all related countries. The Company was required to relocate multiple sections of the ring-main to accommodate construction and installation, often at short notice, and working with SGR contractors on designs and safety requirements to avoid further conflicts. Simultaneously the downstream team had to manage the relocation of parts of the ring-main with minimum disruption to the industrial customers.

The BRT has been in construction since 2012 and when completed will be 130 km long, providing a bus mass transport system that connects the suburbs of Dar es Salaam to the city's central business district. Whilst waiting for BRT project engineers to confirm certain routes through the city, the Company was unable to obtain rights of way to construct an extension of the downstream ring-main to a new customer. Consequently, the Company supplied the customer with CNG after procuring 76 new CNG cylinders and installing them on an existing trailer, commencing supply to the customer in mid-2019.

Compressed Natural Gas

In 2008 the Company commenced the planning an installation of a CNG central station and distribution network in Dar es Salaam. The aim was to supply gas to off-grid companies and to create new markets through the conversion to CNG of petrol-driven domestic and service vehicles.

By 2010, the project was operational and by 2014, the Company was selling CNG via a virtual pipeline to a hotel, five industrial customers and to a growing number of cars and minibus drivers. Although the pilot project was successful, the operation was subsequently reduced following the construction by TPDC of a transmission line that provided gas to the industrial customers. In addition, the cost of converting vehicles for domestic use was prohibitively high and the economic and environmental benefits of running CNG vehicles was not widely publicized nor understood.

Kioo Limited

Another long-standing customer, and one of the first to make the switch to gas was Kioo (Kiswahili for glass). Kioo started using gas for industrial heating in 2005. According to Kioo's General Manager, it has expanded operations to almost three times its original size since then, and in 2011 Kioo also started using natural gas for power generation. The company stated:

"Natural gas availability gave us the consistency to confidently expand. We have grown from one furnace to build a second furnace and from depending entirely on fluctuating TANESCO power to installing two gas generators to create our own highly reliable gas fired power. For glass production, energy reliability is the most important factor. Any fluctuation on power or furnace burning will result in a massive loss for the company.

Any unplanned intervention has a serious impact on the business. Our business is a continuous process and variations affect us a lot. Although we have back-up arrangements, they take time to kick in and we lose several hours of production which cannot be retrieved as we already run 24x7. The natural gas supplied by the Company is very reliable, a lower price than HFO and more environmentally friendly. The response times shown by the Company, and its first-class service and maintenance plans have also helped us so much.

We at Kioo are committed to protecting the environment. We are controlling Nitrogen Oxides and Sulphur Oxides levels as much as possible. We have recently rebuilt both furnaces with latest technology and we will during the year do measurements to cross-check the results."

However, 2019 saw the reinvigoration of the Company's CNG strategy following the addition of an industrial customer who is now supplied with CNG, and an increasing number of domestic and service vehicles converting to CNG and utilizing the central filling station at Ubungo. These vehicles include a sizeable proportion of the Uber vehicle fleet in Dar es Salaam. The Company has also entered into negotiations with a number of traditional fuel suppliers to establish CNG filling stations at key locations throughout the city and is in discussion with several major haulage firms with a view to converting their existing fleets to run on CNG or dual-fuel. These discussions continue and the Company expects to sign agreements with one or more of the haulage firms during 2020.

A reduction in conversion costs, greater access to filling stations, greater awareness of the cost benefits, and crucially, greater incentives to convert to CNG, are all essential. The Company is examining ways to achieve each of these and in 2020 will be developing a comprehensive CNG strategy for implementation in Tanzania.

Growth Opportunities

Demand for natural gas in Tanzania is set to grow significantly. Annual growth in energy demand is currently averaging between 7% and 9%, while the Government of Tanzania has stated its intention to increase power generation from its current installed capacity of approximately 1,520 MW to more than six times that amount by 2025. While hydro, wind and solar energy will be part of Tanzania's future energy mix, the country's vast natural gas resources suggest thermal power generation will contribute significantly. Several new gas-fired power generation facilities are already in various stages of implementation.

Similarly, industrial demand is expected to continue growing. Limited in recent years by capacity constraints in the gas distribution systems, the establishment of the NNGI, able to transport up to 784 MMcfd to Dar es Salaam and other areas, has transformed the landscape. New markets and new industrial zones are being established in the country, while the rapid development of the nation's infrastructure is also expected to accelerate demand. Similarly, situated on Africa's east coast, with several deep-water ports and with well-established road networks into the continental interior, Tanzania, and Dar es Salaam in particular, is well placed for large scale strategic industries looking to serve not only domestic markets, but also international markets in Africa, India and beyond.

The country's growth is likely to fall into three main areas: regional exports, domestic power generation and domestic industrial expansion.

Regional Exports

The country is in discussions with its regional partners regarding the export of gas volumes to neighboring countries such as Kenya.

Domestic Power Generation

Alongside the construction of the Nyerere Hydro Power Project (Stiegler's Gorge) which is expected to generate 2,115 MW when completed, there are numerous projects at various stages of implementation including:

- Kinyerezi 1 Extension – Kinyerezi 1 is a 150 MW gas fired power generation plant near Dar es Salaam and is adjacent to the 240 MW Kinyerezi 2 plant. The plan is to expand Kinyerezi 1 by a further 180 MW, of which 150 MW will be gas fired and the project is 60% complete with gas consumption expected from the end of 2020[1].
- Songas Expansion – Songas is developing plans to expand its generation plant by a further 65 MW. The project may be online in 2021[2].
- Mtwara Power Plant – A feasibility study is in progress for the construction of a 300 MW power plant in Mtwara, in southern Tanzania[3]
- Somanga Funga Power Plant – A feasibility study is in progress for the construction of a 330 MW power plant in Somanga Funga, on the mainland directly opposite SSI[3]
- Zuzu Power Plant – A recent study by the Japanese International Cooperation Agency ("JICA") recommended conversion of the Zuzu diesel power plant to a combined cycle gas turbine plant comprising 2 x 50 MW units[4]

Domestic Industrial Expansion

Tanzania, and Dar es Salaam in particular, is very well situated to attract new industries and many existing industries are also seeking to expand their operations. The Company is at various stages of discussions and negotiations to establish gas sales agreements with new industrial customers and conservatively expects to add one to two customers per annum. In addition, an increasing number of industrial customers are seeking gas for captive power generation, to overcome instability issues from national supply.

Source:

1 Discussions with, and widely reported by, Ministry of Energy, TANESCO, TPDC, construction contractors, media. http://csi.energy/project/kinyerezi-i-extension-power-plant-185mw/.

2 Direct discussions with Globeleq and Songas Management.

3 Discussions with Songas and TPDC, and referenced in several public presentations by both.

4 Presentation issued by JICA and publicly presented during a recent forum announcing the next stage of JICA's work with the Government of Tanzania.

GAS RESERVES

Reserves

Songo Songo Conventional Natural Gas Reserves (Bcf)	2019 Gross[1]	2019 Net[2]	2018 Gross	2018 Net
Independent reserves evaluation				
Proved producing	**234.4**	**144.5**	227.6	142.3
Proved developed non-producing	**–**	**–**	33.5	18.8
Proved undeveloped	**–**	**–**	–	–
Total proved (1P)	**234.4**	**144.5**	261.1	161.1
Probable	**30.9**	**17.3**	31.7	17.8
Total proved and probable (2P)	**265.3**	**161.8**	**292.8**	**178.9**

[1] Gross equals the gross reserves that are available for the Company based on its effective ownership interest.

[2] Net equals the economic allocation of the gross reserves to the Company as determined in accordance with the PSA.

Net Present Value ($'millions)	2019 5%	2019 10%	2019 15%	2018 5%	2018 10%	2018 15%
Proved producing	**282.0**	**237.1**	**202.3**	272.0	225.5	190.3
Proved developed non-producing	**–**	**–**	**–**	35.4	26.2	19.8
Proved undeveloped	**–**	**–**	**–**	–	–	–
Total proved (1P)	**282.0**	**237.1**	**202.3**	307.4	251.7	210.1
Probable	**53.9**	**45.5**	**38.9**	51.1	42.7	36.1
Total proved and probable (2P)	**335.9**	**282.6**	**241.2**	**358.5**	**294.4**	**246.2**

2019 Independent Evaluation

The Company's natural gas reserves as at December 31, 2019 for the period to the end of its license in October 2026 were evaluated by McDaniel & Associates Consultants Ltd. ("McDaniel") independent petroleum engineering consultants in accordance with the definitions, standards and procedures contained in the Canadian Oil and Gas Evaluation Handbook and National Instrument 51-101 – Standards of Disclosure for Oil and Gas Activities ("NI 51-101"). The independent reserves evaluation prepared by McDaniel (the "McDaniel Report") is dated February 20, 2020 with the effective date of December 31, 2019. A Reserves Committee of the Board of Directors reviews the qualifications and appointment of the independent reserves evaluator and reviews the procedures for providing information to the evaluators.

Reserves included herein are stated on a company gross basis (92.07%) unless noted otherwise. All the Company's reserves are conventional natural gas reserves and are located in Tanzania. Additional reserves information required under NI 51-101 are included in Orca's reports relating to reserves data and other oil and gas information under NI 51-101, which have been filed on its profile on SEDAR at www.sedar.com.

On a gross company basis there has been an 10% decrease in Songo Songo's 1P reserves with a total Additional Gas production of 14.6 Bcf during the year. There has been a 10% decrease in the 2P reserves on a gross company basis.

There has been a 4% decrease in the 2P present value at a 10% discount basis from $294.4 million to $282.6 million. The decrease is predominately the result of the reduced time remaining to the end of the license offset by a reduction in forecasted capital costs for compression.

For the purpose of calculating the Gross reserves, McDaniel has assumed in its 2P case that 67 Bcf (2018: 81 Bcf) or an average of 14.0 Bcf per annum will be required to meet the demands of the Protected Gas users from January 1, 2020 to July 31, 2024. During 2019 the Protected Gas users consumed 14.6 Bcf (2018: 14.4 Bcf).

Forecast Gas Prices and Sales Volumes[1]

	1P Additional Gas Price *$/mcf*	1P Gross Gas Volumes *MMcfd*	2P Additional Gas Price *$/mcf*	2P Gross Gas Volumes *MMcfd*
2020	4.02	79.5	4.04	83.8
2021	4.06	95.9	4.09	105.6
2022	4.18	94.3	4.21	114.1
2023	4.30	92.7	4.37	116.1
2024	4.32	108.1	4.46	130.9
2025	4.31	130.6	4.53	139.6
2026	4.44	124.1	4.73	127.8

1 McDaniel Report.

2020 Subsurface Work Program

At the end of 2019, the Company commissioned a third-party company to carry out petrophysical and modular formation dynamics on the Songo Songo field, and further seismic re-evaluation covering the core area, northern and eastern section and the Songo Songo West prospect. The work program includes:

- Undertaking a quality control exercise over the seismic dataset to check for inconsistencies
- Verifying the well to seismic calibration and ties against previous 2D seismic lines
- Re-interpretation of the seismic Two-Way-Time ("TWT") horizon picking and fault interpretation of the Top Neocomian (main reservoir) and the Intra Neocomian Z3 horizon.
- Generation of alternative picks for the Top Neocomian to assist in evaluating Gross Rock Volume ("GRV") uncertainty
- Undertaking depth conversion of the seismic TWT interpretation
- Generating GRVs for the full range of depth maps to establish the distribution of GIIP
- Construction of a Petrel static model using the selected Top Neocomian base case depth map and fault interpretation

Due for completion in Q2 2020, the work is expected to provide greater certainty over the field structure and gas-in-place, increased understanding of the Songo Songo North area of the field, and whether further data capture might be necessary to determine future development options.

BOARD OF DIRECTORS

An international team providing diligent leadership

David W. Ross

Chairman and Non-Executive Director

Appointed: 2004
Location: Canada

David Ross has extensive experience in international tax law and is a partner in the Calgary-based law firm of Burnet Duckworth & Palmer. He has served as Secretary to the Board since the Company was formed in 2004.

Committee Membership

A RC

Nigel Friend

Chief Executive Officer

Appointed: 2018
Location: United Kingdom

Nigel Friend has over 25 years' experience in the international energy sector. At KPMG in London, he led the corporate finance department that project-managed several significant corporate acquisitions and privatizations. In the 1990's he led Enron Europe's investment in an onshore gas field in the Thrace Basin in Turkey. At PanOcean Energy Corporation, he coordinated the spinout of the Company's Tanzania natural gas business unit to shareholders and the listing of East Coast Energy. He was a Board Director and Chief Financial Officer of Orca between 2004 and 2012. More recently, he jointly founded a company that is developing new modular technologies designed to facilitate the monetization of natural gas. Nigel Friend is a qualified Chartered Accountant and holds a BSc (Hons) in Industrial Economics from Nottingham University.

Committee Membership

E R

Dr Frannie Léautier

Non-Executive Director, Chair of ESG Committee

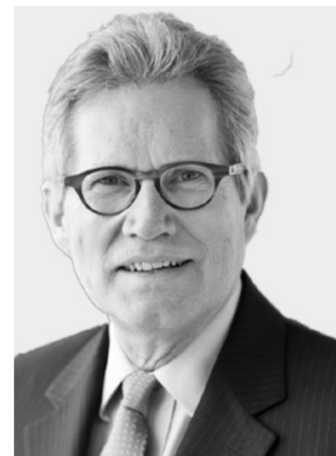
Appointed: 2019
Location: United States

Dr Léautier is a globally respected development expert and has extensive African and global experience in the public and private sectors. She is the Founder and Managing Partner of the Fezembat Group and was previously Senior Vice President of the African Development Bank, where she led efforts to improve the bank's overall operational effectiveness. Other roles include: Chief Operating Officer for the Trade and Development Bank based in Nairobi, Infrastructure Director, World Bank, Vice President and Head of the World Bank Institute.

Dr Léautier holds a PhD in Infrastructure Systems and a Masters in Transportation from the Massachusetts Institute of Technology.

Committee Membership

A E



Ebbie Haan

Non-Executive Director, Chair of Reserves Committee

Appointed: 2019
Location: Netherlands

Ebbie Haan has a strong track record in negotiating transactions and executing business development opportunities. Ebbie spent 26 years at Royal Dutch Shell where he held various leadership positions and in 2008 was appointed Managing Director of Sasol Petroleum International, before being appointed Chief Growth Officer for Maersk Oil. Since 2018 he has run his own advisory firm. Ebbie has both an undergraduate degree and a Masters in Geology from Utrecht University.

Committee Membership

E R S

Committee Membership Key:

- A Audit Committee
- E ESG Committee
- RC Remuneration/ Compensation Committee
- R Reserves Committee
- S Special Committee

Carole Wainaina

Non-Executive Director,
Chair of Remuneration Committee

Appointed: 2019
Location: Kenya

Carole Wainaina is a well-respected senior executive with global experience in the public and private sectors. Carole served as the Assistant Secretary General for Human Resources of the United Nations and prior to this, held a number of senior roles at Coca-Cola and Royal Phillips, where she worked in a number of countries including several in Africa. Carole is currently the Chief Operating Officer for Africa50 and holds a Bachelor of Business Administration Degree from the University of Southern Queensland.

Committee Membership

RC

Linda Beal

Non-Executive Director,
Chair of Audit Committee
and Special Committee

Appointed: 2019
Location: United Kingdom

Linda Beal was a tax partner with PricewaterhouseCoopers in the UK for 16 years and then with Grant Thornton UK LLP. Linda has significant experience of advising natural resources groups operating in Africa and internationally. Linda is also a non-executive director at San Leon Energy PLC, Kropz PLC, and Aminex PLC.

Committee Membership

A S

Jay Lyons

Non-Executive Director

Appointed: 2019
Location: Canada

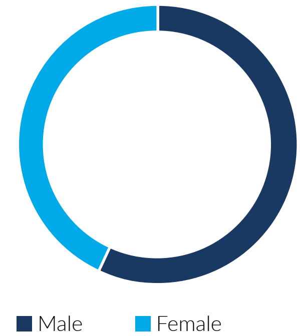
Jay Lyons is a private investor with considerable experience in the oil and gas industries of Canada and the United States. He has worked in a range of roles for both private and public companies in the upstream and downstream sectors.

Committee Membership

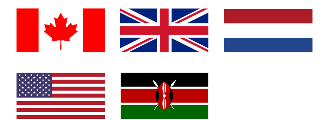
R S

Board Stats

Diversity



Locations



Experience

- Oil & Gas
- Finance
- Developing Economies
- Engineering
- Infrastructure
- Management
- Mergers & Acquisitions
- Project Finance

FORWARD-LOOKING INFORMATION

This annual report contains forward-looking statements or information (collectively, "forward-looking statements") within the meaning of applicable securities legislation.

More particularly, this annual report contains, without limitation forward looking statements pertaining to the Company's beliefs regarding its position for growth; statements regarding approving a dividend policy; statements regarding the Company's access to infrastructure and infrastructure constraints; the procurement and installation of compression on the Songas Facilities; the outcome of the Company's strategy of maximising the potential of its Tanzanian asset, diversifying its asset base, and increasing the liquidity of its equity; the expected increase in demand for gas; the Company's belief that it is positioned to meet increases in demand; the impact of the COVD-19 pandemic on the demand for and price of natural gas, volatility in the financial markets, disruptions to global supply chains and the Company's business, operations, access to customers and suppliers, availability of employees to carry out day-to-day operations and other resources; the outcome of the Government of Tanzania's review of all oil and gas production sharing agreements in Tanzania; the Company's beliefs regarding its position to overcome current macro-economic challenges; the Company's intention to maintain involvement at all levels of the gas supply chain; the Company's plans to recomplete the SS-10 well and timing for realigning and interconnecting the SS-10 well; the estimated cost and timing for completion of the flowline decoupling project; the Company's expectations regarding signing agreements with haulage firms; the Company's ability to enter into gas sales agreements with new industrial customers; and the expected timing for completing the Songo Songo work program. In addition, statements relating to "reserves" are by their nature forward-looking statements, as they involve the implied assessment, based on certain estimates and assumptions that the reserves described can be profitably produced in the future. The recovery and reserve estimates of the Company's reserves provided therein are estimates only and there is no guarantee that the estimated reserves will be recovered. As a consequence, actual results may differ materially from those anticipated in the forward-looking statements. Although management believes that the expectations reflected in the forward-looking statements are reasonable, it cannot guarantee future results, levels of activity, performance or achievement since such expectations are inherently subject to significant business, economic, operational, competitive, political and social uncertainties and contingencies.

These forward-looking statements involve substantial known and unknown risks and uncertainties, certain of which are beyond the Company's control, and many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking statements made by the Company. Additionally, such forward looking statements are based on certain assumptions made by the Company in light of its experience and perception of historical trends, current conditions and expected future developments, as well as other factors the Company believes are appropriate in the circumstances. Please see the disclosure under the headings "Business Risks" and "Forward Looking Statements" in the Company's Management's Discussion and Analysis ("MD&A") for the year ended December 31, 2019 filed on www.sedar.com and contained in the Company's annual report for a discussion of such risks, uncertainties, and assumptions.

The forward-looking statements contained in this annual report are made as of the date hereof and the Company undertakes no obligation to update publicly or revise any forward-looking statements or information, whether as a result of new information, future events or otherwise, unless so required by applicable securities laws.

Oil and Gas Advisory

The Company's conventional natural gas reserves as at December 31, 2019 disclosed herein were evaluated by McDaniel in accordance with the definitions, standards and procedures contained in the COGE Handbook and NI 51-101 – Standards of Disclosure for Oil and Gas Activities. The independent reserves evaluation prepared by McDaniel had an effective date of December 31, 2019 and preparation date of February 20, 2020.

The recovery and reserves estimates of the Company's conventional natural gas reserves provided herein are estimates only and there is no guarantee that the estimated reserves will be recovered. Actual reserves may be greater than or less than the estimates provided herein.

"BOEs" may be misleading, particularly if used in isolation. A BOE conversion ratio of six thousand cubic feet of natural gas to one barrel of oil equivalent (6Mcf: 1 Bbl) is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead. As the value ratio between natural gas and crude oil based on the current prices of natural gas and crude oil is significantly different from the energy equivalency of 6:1, utilizing a conversion on a 6:1 basis may be misleading as an indication of value.

Non-GAAP Measures

Throughout this Annual Report we use the term "adjusted funds flow from operations" represents net cash flows from operating activities less interest expense and before changes in non-cash working capital. This is a performance measure that management believes represents the company's ability to generate sufficient cash flow to fund capital expenditures and/or service debt. "Adjusted funds flow from operations" has been calculated by management and does not have a standardized prescribed meaning under generally accepted accounting principles in Canada and may not be comparable with the calculation of similar measurements by other entities. Please see the disclosure under the heading "Non-GAAP Measures" in the Company's MD&A for the year ended December 31, 2019 filed on www.sedar.com and contained in the Company's annual report for a discussion of such non-GAAP measures.

MANAGEMENT'S DISCUSSION & ANALYSIS

THIS MANAGEMENT'S DISCUSSION AND ANALYSIS ("MD&A") OF OUR FINANCIAL CONDITION AND RESULTS OF OPERATIONS SHOULD BE READ IN CONJUNCTION WITH THE AUDITED CONSOLIDATED FINANCIAL STATEMENTS AND NOTES FOR THE YEAR ENDED DECEMBER 31, 2019. THIS MD&A IS BASED ON THE INFORMATION AVAILABLE ON APRIL 28, 2020. ALL AMOUNTS ARE REPORTED IN US DOLLARS ("$") UNLESS OTHERWISE NOTED.

THIS MD&A CONTAINS NON-GAAP MEASURES AND FORWARD-LOOKING INFORMATION. READERS ARE CAUTIONED THAT THIS MD&A SHOULD BE READ IN CONJUNCTION WITH THE DISCLOSURE BELOW UNDER THE HEADINGS "NON-GAAP MEASURES", "FORWARD-LOOKING INFORMATION AND STATEMENT" AND "GLOSSARY" INCLUDED AT THE END OF THIS MD&A.

Nature of Operations

The principal asset of Orca Exploration Group Inc. ("Orca" or the "Company") is its interest in the Production Sharing Agreement ("PSA") with the Tanzanian Production Development Corporation ("TPDC") and the Government of Tanzania ("GoT") in the United Republic of Tanzania. This PSA covers the production and marketing of certain gas from the Songo Songo license offshore Tanzania. The PSA defines the gas produced from the Songo Songo Gas Field as "Protected Gas" and "Additional Gas". The Protected Gas is owned by TPDC and is sold under a 20-year gas agreement (until July 31, 2024) to Songas Limited ("Songas"). Songas is the owner of the infrastructure that enables the gas to be treated and delivered to Dar es Salaam, which includes a gas processing plant on Songo Songo Island (the "Songas Infrastructure").

Songas utilizes the Protected Gas as fuel for its gas turbine electricity generators and for onward sale to customers. The Company receives no revenue for the Protected Gas delivered to Songas and operates the original wells and gas processing plant on a 'no gain no loss' basis. Under the PSA, the Company has the right to produce and market all gas in the Songo Songo Block in excess of the Protected Gas requirements ("Additional Gas") until the PSA expires in October 2026.

The Tanzanian Electric Supply Company Limited ("TANESCO") is a parastatal organization wholly owned by the GoT with oversight by the Ministry for Energy ("MoE"). TANESCO is responsible for the majority of electricity generation, transmission and distribution throughout Tanzania. Natural gas has become an integral component of TANESCO's power generation fuel mix as a more reliable source of supply over seasonal hydropower and a more cost-effective alternative to liquid fuels. The Company currently supplies Additional Gas directly to TANESCO by way of the Portfolio Gas Supply Agreement ("PGSA") between the Company, TANESCO and TPDC and indirectly through the supply of Protected Gas and Additional Gas to Songas, which in turn generates and sells power to TANESCO. Subject to meteorological conditions and increased use of hydro power generation, the gas the Company currently supplies to Songas and TANESCO via the Songas Infrastructure and the National Natural Gas Infrastructure ("NNGI"), generates approximately 48% of the electrical power and approximately 70% of the gas utilized for power generation in Tanzania.

In May 2019 the Company signed a new long-term gas sales agreement ("LTGSA") with TPDC, which replaces the side letter agreement entered into in December 2018. The Company commenced supplying gas to TPDC under the LTGSA in September 2019. The LTGSA initially provided for the supply of up to 20 million standard cubic feet per day ("MMcfd") of natural gas to the TPDC operated NNGI on Songo Songo Island where it is processed before being transported to Dar es Salaam for power and industrial use. On September 25, 2019 the Company reached an agreement with TPDC to increase the maximum daily quantity of Additional Gas that can be supplied under the LTGSA to 30 MMcfd. Prior to signing the LTGSA, the processing and distribution of natural gas volumes had been restricted by infrastructure limitations at the Songas Infrastructure.

In addition to supplying gas to TPDC, Songas and TANESCO, the Company has developed 42 contracts to supply gas to Dar es Salaam's industrial market.

Financial and Operating Highlights for the Three Months and Year Ended December 31, 2019

(Expressed in $'000 unless indicated otherwise)	Three Months ended December 31 2019	Three Months ended December 31 2018	% Change Q4/19 vs Q4/18	Year ended December 31 2019	Year ended December 31 2018	% Change Ytd/19 vs Ytd/18
OPERATING						
Daily average gas delivered and sold *(MMcfd)*	**70.8**	44.8	58%	**63.1**	39.9	58%
Industrial	**13.1**	13.0	1%	**13.3**	13.0	2%
Power	**57.7**	31.8	81%	**49.8**	26.9	85%
Average price *($/mcf)*						
Industrial	**7.77**	8.44	(8)%	**7.97**	8.26	(4)%
Power	**3.44**	3.68	(7)%	**3.43**	3.68	(7)%
Weighted average	**4.24**	5.06	(16)%	**4.38**	5.17	(15)%
Operating netback *($/mcf)*[1]	**2.73**	2.63	4%	**2.63**	2.76	(5)%
FINANCIAL						
Revenue	**23,212**	13,460	72%	**85,595**	57,766	48%
Net income attributable to shareholders	**12,339**	2,751	349%	**24,718**	13,270	86%
per share – basic and diluted *($)*	**0.36**	0.09	289%	**0.71**	0.38	87%
Net cash flows from operating activities	**5,156**	4,085	26%	**34,873**	28,752	21%
per share – basic and diluted *($)*	**0.15**	0.12	25%	**1.00**	0.82	22%
Adjusted funds flow from operations[(1)]	**13,560**	6,398	112%	**43,213**	19,255	124%
per share – basic and diluted *($)*	**0.39**	0.18	117%	**1.24**	0.55	125%
Capital expenditures	**2,679**	2,628	2%	**5,836**	5,843	0%

	As at December 31, 2019	As at December 31, 2018	% Change
Working capital (including cash)	**106,972**	84,182	27%
Cash and cash equivalents	**93,899**	64,660	45%
Investments in short-term bonds	**44,756**	66,837	(33)%
Long-term loan	**54,057**	53,900	0%
Outstanding shares *('000)*			
Class A	**1,750**	1,750	0%
Class B	**32,557**	33,506	(3)%
Total shares outstanding	**34,307**	35,256	(3)%
Weighted average Class A and Class B Shares *('000)*	**34,931**	35,256	(1)%
RESERVES			
Additional Gas Gross Recoverable Reserves *(Bcf)*			
Proved	**234**	261	(10)%
Probable	**31**	32	(3)%
Proved plus probable	**265**	293	(10)%
Net Present Value, discounted at 10% *($ million)*[2]			
Proved	**237**	252	(6)%
Proved plus probable	**283**	294	(4)%

[1] Please refer to Non-GAAP measures section of the MD&A for additional Information.

[2] In accordance with the PSA with the TPDC and the GoT in the United Republic of Tanzania, the Company is able to recover income tax and consequently there is no significant difference between the NPV of reserves on a before and after tax basis. Any capitalized terms otherwise not defined within the Financial and Operating Highlights are defined in the MD&A.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Financial and Operating Highlights for 2019 and Q4 2019

- During 2019 the Company completed the installation of a closed loop, mechanical refrigeration unit within the Songas Infrastructure. The refrigeration unit has enabled the Company to increase the volumes that can be processed and transported to Dar es Salaam through the Songas Infrastructure to 100 MMcfd. This is in addition to volumes delivered through the NNGI under the LTGSA signed in May 2019 with TPDC. The LTGSA was amended in September 2019 to increase the volumes to be supplied through the NNGI from the initially agreed 20 MMcfd up to a maximum daily quantity of 30 MMcfd, with volumes between 20 MMcfd and 30 MMcfd supplied on a best endeavors basis until such times as compression is installed on the Songas infrastructure.
- In December 2019 the Company signed a Letter of Intent ("LoI") for $5.7 million to complete, amongst other works, detailed engineering and design of a compression system to be installed on the Songas Infrastructure. The LoI will be followed by full lump-sum turnkey contracts for installation of compression with an estimated total value of $38 million including the LoI work. Compression is currently planned for installation prior to the end of Q1 2022 and will allow production volumes to be maintained at 135 MMcfd with the possibility to expand well deliverability to 172 MMcfd by increasing the amount of gas being delivered through the NNGI.
- Revenue for Q4 2019 increased by 72% and by 48% for the year over the comparable prior year period. The increases are primarily due to increased sales to TANESCO, new sales to TPDC under the LTGSA, a greater percentage of profit share and a positive current income tax adjustment as a consequence of higher revenues. Gas deliveries for the quarter and the year increased 58% over the comparable prior year period. The increase in gas volumes is primarily the result of increased nominations of gas volumes by TANESCO and TPDC through the NNGI. The increase in volumes was partially offset by a 16% decrease in the weighted average price for Q4 2019 and a decrease in the weighted average price for the year of 15% compared to the same prior year period.
- Net income attributable to shareholders increased 349% for Q4 2019 and 86% for the year over the comparable prior year period. The increases are primarily due to the increase in revenue partially offset by the increase in depletion expense due to increased gas volume deliveries.
- Net cash flows from operating activities for Q4 2019 increased by 26% and by 21% for the year over the comparable prior year period. The increases are primarily a result of the increase in net income and the positive impact on cash flow when adjusting net income by the increase in depletion being offset by the decrease in the cash inflow associated with changes in non-cash working capital compared to the prior year period. The decrease in cash flow associated with non-cash working capital is primarily due to the increase in prepayments and a decrease in trade and other payables.
- Adjusted funds flow from operations for Q4 2019 increased 112% and 124% for the year over the comparable prior year period. The increases are mainly due to the increase in net cash flows from operating activities adjusted for the change in non-cash working capital.
- Capital expenditures increased by 2% for Q4 and by 0% for the year over the comparable prior year period. The capital expenditures for 2019 include costs for the completion of the refrigeration unit for the Songas Infrastructure and capitalized lease costs in accordance with IFRS 16.
- The Company once again exited the year in a stable financial position with $107.0 million in working capital (December 31, 2018: $84.2 million), cash and short-term investments of $138.7 million (December 31, 2018: $131.5 million) and long-term debt of $54.1 million (December 31, 2018: $53.9 million). The intention is to hold the short-term investments to maturity. The short-term investments are highly liquid by their nature and may readily be transferred to cash when necessary.
- Total proved conventional natural gas reserves at December 31, 2019 decreased 10% to 234 Bcf from 261 Bcf and total proved plus probable conventional natural gas reserves ("2P") decreased 10% to 265 Bcf from 293 Bcf compared to the prior year. The decrease is due to Additional Gas production in 2019 of 21 Bcf (2018: 14.6 Bcf) and lower forecasted sales over the remaining life of the license. The net present value of estimated future cash flows from 2P reserves at a 10% discount rate ("NPV10") decreased by 4% to $282.6 million from $294.4 million in the previous year. This is mainly the result of the decrease in the time remaining to the end of the license offset by a reduction in forecasted capital costs. The reserves and estimated future cash flows are based on forecasted Additional Gas sales volumes of 79.5 MMcfd for 2020 compared to actual results of 63.1 MMcfd for 2019. Under the terms of the PSA, the Company is required to pay Tanzanian income tax but this is recovered through the profit sharing arrangements with TPDC. Income tax has no material impact on the cash flows emanating from the PSA and accordingly there is no significant difference between the net present value of reserves on a before and after tax basis.
- As at December 31, 2019 the current receivable from TANESCO was $ nil (December 31, 2018: $ nil). TANESCO's long-term trade receivable as at December 31, 2019 was $47.5 million with a provision of $47.5 million compared to $58.5 million (provision of $58.5 million) as at December 31, 2018. Subsequent to December 31, 2019 the Company has invoiced TANESCO $4.9 million for 2020 gas deliveries and TANESCO has paid the Company $18.1 million.
- On October 18, 2019 the Company announced it completed its normal course issuer bid ("NCIB") for the purchase of its Class B subordinate voting shares ("Class B Shares"). Under the NCIB the Company repurchased 933,028 Class B Shares at a weighted average price of CDN$6.43 per Class B Share for aggregate consideration of CDN$6.0 million being the maximum aggregate consideration authorised under the NCIB. The Class B Shares repurchased under the NCIB have been canceled.
- On November 28, 2019 the Company declared a dividend of CDN$0.06 per share on each of its Class A common voting shares ("Class A Shares") and Class B Shares for a total of $1.5 million to the holders of record as of December 31, 2019 paid on January 31, 2020.
- On January 24, 2020, the Company announced the authorization of a substantial issuer bid, the outcome of its strategic review process and focused strategy to grow an integrated gas business in Africa. The announcement followed the work of a special committee of the directors appointed on July 25, 2019 to review strategic alternatives.
- On February 25, 2020 the Company declared a dividend of CDN$0.06 per share on each of its Class A Shares and Class B Shares for a total of $1.2 million to the holders of record as of March 31, 2020 to be paid on April 30, 2020.
- On March 12, 2020 the Company announced the final results of the substantial issuer bid where it took up and paid for 7,692,297 Class B Shares at CDN$6.50 per Class B Share. The aggregate purchase of Class B Shares totaled CDN$50.0 million representing 23.6% of Orca's issued and outstanding Class B Shares and 22.4% of the total number of Orca's issued and outstanding shares.
- On April 7, 2020 the Company announced its intention to amend the NCIB for purchase of its Class B Shares initiated in June 2019. Additional purchases made pursuant to the NCIB will not exceed 700,000 Class B Shares (subject to a maximum aggregate purchase limit of CDN$3.85 million) representing not more than 5% of the issued and outstanding Class B Shares as at June 14, 2019 (33,505,915 Class B Shares) less 933,028 Class B Shares already purchased under the NCIB. The NCIB will be in effect until June 14, 2020.

Oil and Gas Advisory

The Company's conventional natural gas reserves as at December 31, 2019 disclosed herein were evaluated by McDaniel & Associates Consultants Ltd. ("McDaniel"), independent petroleum engineering consultants, in accordance with the definitions, standards and procedures contained in the Canadian Oil and Gas Evaluation Handbook ("COGE Handbook") and National Instrument 51-101 – Standards of Disclosure for Oil and Gas Activities ("NI 51-101"). The independent reserves evaluations prepared by McDaniel had an effective date of December 31, 2019 and preparation date of February 20, 2020. The recovery and reserve estimates of the Company's conventional natural gas reserves provided herein are estimates only and there is no guarantee that the estimated reserves will be recovered. Actual reserves may be greater than or less than the estimates provided herein.

Operating Volumes

The gross daily volume average in 2019 and for Q4 2019 increased 58% over the comparable prior year periods. The increase in gross sales volume was primarily due to increased sales of natural gas through the NNGI, initially to TANESCO through a side letter agreement and then to TPDC with the signing of the new LTGSA.

The Company's gross sales volumes were split between the Industrial and Power sectors as detailed in the table below:

	Three Months ended December 31		Year ended December 31	
	2019	2018	2019	2018
Gross sales volume *(MMcf)*				
Industrial sector	**1,206**	1,194	**4,836**	4,733
Power sector	**5,309**	2,929	**18,183**	9,839
Total volumes	**6,515**	4,123	**23,019**	14,572
Gross daily sales volume average *(MMcfd)*				
Industrial sector	**13.1**	13.0	**13.3**	13.0
Power sector	**57.7**	31.8	**49.8**	26.9
Gross daily sales volume average total	**70.8**	44.8	**63.1**	39.9

Industrial Sector

There was a small increase of 1% in Industrial sales volumes for Q4 2019 and 2% for the year over the comparable prior year period. The increase is a result of reduced maintenance time at a cement plant in 2019 and increased consumption by industrial customers throughout 2019.

Power Sector

Power sector sales volumes increased by 81% for Q4 2019 and 85% for the year over the comparable prior year period. The increase was primarily due to increased gas sales through NNGI to TANESCO and TPDC.

Protected Gas Volumes

Protected Gas volumes for the year increased by 1% to 14,571 MMcf (39.9 MMcfd) compared to 14,390 MMcf (39.4 MMcfd) for the year ended December 31, 2018. Protected Gas volumes decreased by 5% to 3,693 MMcf (40.1 MMcfd) in the quarter from 3,902 MMcf (42.4 MMcfd) in Q4 2018. The Company receives no revenue for Protected Gas volumes however the volumes are required to calculate total gas produced from the reservoir and the allocation of certain production, distribution and transportation expenses between Protected Gas and Additional Gas.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Commodity Prices

The commodity prices achieved in the different sectors during the year are detailed in the table below:

	Three Months ended December 31		Year ended December 31	
$/mcf	2019	2018	2019	2018
Average sales price				
Industrial sector	**7.77**	8.44	**7.97**	8.26
Power sector	**3.44**	3.68	**3.43**	3.68
Weighted average price	**4.24**	5.06	**4.38**	5.17

Industrial Sector

The average Industrial sales price decreased by 8% for Q4 2019 and by 4% for the year over the comparable prior year period. The decrease in prices is primarily due to the underlying decrease in the price of heavy fuel oil against which most of the industrial customer contracts are priced.

Power Sector

The average sales price for Q4 2019 and for the year decreased 7% from the comparable prior year period. The decrease is primarily due to the increase in gas volumes sold through the NNGI to TANESCO and TPDC at wellhead gas prices compared to gas volumes sold through the Songas Infrastructure which include a processing and transportation tariff. Although the average gas price for the three and twelve months ended December 31, 2019 is less than the comparative prior year periods, the Company's sales margins to the Power sector actually increased slightly year on year due to increased deliveries through the NNGI for which the Company does not pay processing and transportation tariffs.

Revenue

Under the terms of the PSA the Company is responsible for invoicing, collecting and allocating the revenue from Additional Gas sales (See "Principal Terms of the PSA and Related Agreements").

The Company is entitled to recover all costs incurred on the exploration, development and operations of the project ("Cost Gas revenue") up to a maximum of 75% of the net field revenue (gross field revenue less the tariff for processing and pipeline infrastructure) prior to allocating the remaining net field revenue between TPDC and the Company ("Profit Gas revenue"). Any costs not recovered in a period are carried forward for recovery out of future revenues. Once the Cost Gas revenue has been recovered, TPDC is able to recover any pre-approved marketing costs. Currently there are no pre-approved marketing costs for TPDC.

The average Additional Gas sales volumes for the quarter and the year ended December 31, 2019 were above 50 MMcfd which entitled the Company to a 55% share of Profit Gas revenue. The average Additional Gas volumes for the quarters ended September 30 and December 31, 2018 were above 40 MMcfd which entitled the Company to a 40% share of Profit Gas revenues. Average Additional Gas volumes for the quarters ended March 31, 2018 and June 30, 2018 were below 40 MMcfd which entitled the Company to a 35% share of Profit Gas revenues.

The Company was allocated a total of 75% of the net field revenue for the quarter ended December 31, 2019 (Q4 2018: 64%) and 69% for the year ended December 31, 2019 (year ended December 31, 2018: 65%).

The reconciliation of gross field revenue to Company operating revenue and revenue is detailed below:

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Industrial sector	**9,374**	10,077	**38,530**	39,095
Power sector	**18,245**	10,774	**62,329**	40,395
Gross field revenue	**27,619**	20,851	**100,859**	79,490
TPDC share of revenue	**(6,347)**	(6,686)	**(28,334)**	(25,056)
Company operating revenue	**21,272**	14,165	**72,525**	54,434
Current income tax adjustment	**1,940**	(705)	**13,070**	3,332
Revenue	**23,212**	13,460	**85,595**	57,766

Operating revenue increased 50% for Q4 2019 and 33% for the year over the comparable prior year period. The increase for the quarter and the year ended December 31, 2019 is primarily a result of increased sales to TANESCO, new sales to TPDC under the LTGSA combined with higher Profit Gas entitlement.

Operating revenue is adjusted by the current income tax to calculate revenue presented on the Consolidated Statements of Comprehensive Income. The Company is liable for income tax in Tanzania, but under the terms of the PSA, TPDC's share of revenue is adjusted for the tax payable. To account for this, revenue includes the current income tax charge grossed up at 30%.

The Company's revenue for Q4 2019 increased by 72% and increased 48% for the year over the comparable prior year period. The increases are primarily a consequence of increased sales to TANESCO and new sales to TPDC under the LTGSA, a greater percentage of profit share and a positive current income tax adjustment due to higher revenues.

Production, Distribution and Transportation Expenses

Included in operating costs are well maintenance costs, allocation of PSA license costs, regulatory fees, insurance, certain costs associated with evaluation of the reserves and costs of personnel not recoverable from Songas. Costs are allocated between Protected Gas (recoverable from Songas) and Additional Gas in proportion to their respective sales during the period.

The production, distribution and transportation costs are detailed in the table below:

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Operating costs	**361**	246	**1,310**	1,120
Tariff for processing and pipeline infrastructure	**2,576**	2,347	**8,404**	8,508
Ring-main distribution costs	**542**	734	**2,151**	2,750
Production, distribution and transportation expenses	**3,479**	3,327	**11,865**	12,378

Operating Netbacks

The operating netback per mcf before general and administrative expenses, tax and Additional Profits Tax ("APT") is detailed in the table below (see "Non-GAAP measures"):

	Three Months ended December 31		Year ended December 31	
$/mcf	2019	2018	2019	2018
Gas price – Industrial	**7.77**	8.44	**7.97**	8.26
Gas price – Power	**3.44**	3.68	**3.43**	3.68
Weighted average price for gas	**4.24**	5.06	**4.38**	5.17
TPDC Profit Gas entitlement	**(0.97)**	(1.62)	**(1.23)**	(1.56)
Production, distribution and transportation expenses	**(0.54)**	(0.81)	**(0.52)**	(0.85)
Operating netback	**2.73**	2.63	**2.63**	2.76

The operating netback in Q4 2019 increased by 4% compared to Q4 2018 and decreased by 5% for the year compared to 2018. The increase in Q4 2019 is mainly due to the reduction in the TPDC share of revenue due to their reduced Profit Gas entitlement. The decrease for the year is primarily a result of the decrease in the weighted average gas price of gas supplied as a consequence of the change in sales mix between Industrial and Power sectors which has been partially offset by: (i) the reduction in the TPDC Profit Gas entitlement; and (ii) decreased tariff for processing and pipeline infrastructure as a consequence of increased volumes through the NNGI.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

General and Administrative Expenses

General and administrative expenses are detailed in the tables below:

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Employee and related costs	**1,409**	1,268	**6,188**	6,084
Office costs	**1,052**	1,585	**4,438**	5,230
Marketing and business development costs	**536**	202	**1,921**	427
Reporting, regulatory and corporate	**561**	280	**1,850**	1,086
	3,558	3,335	**14,397**	12,827

General and administrative expenses are split between head office and Tanzania. The majority of general and administration expenses relate to office and management costs that support our operations in Tanzania and are cost recoverable under the PSA.

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Tanzania	**2,176**	1,933	**8,214**	7,900
Corporate	**1,382**	1,402	**6,183**	4,927
	3,558	3,335	**14,397**	12,827

General and administrative expenses averaged $1.2 million per month during Q4 2019 (Q4 2018: $1.1 million) and $1.2 million per month over the year (2018: $1.1 million). The increase between periods is primarily due to business development and legal costs related to the strategic review undertaken by the Company and the NCIB completed in the latter part of 2019.

Stock Based Compensation

The breakdown of the costs incurred in relation to stock based compensation is detailed in the table below:

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Stock appreciation rights ("SARs")	**559**	(362)	**2,015**	2,440
Restricted stock units ("RSUs")	**155**	(57)	**440**	2,203
Stock based compensation (recovery)	**714**	(419)	**2,455**	4,643

As at December 31, 2019 a total of 2,321,833 SARs were outstanding compared to 645,000 SARs as at December 31, 2018. A total of 2,168,500 new SARs were issued during the year ended December 31, 2019 with exercise prices ranging from CDN$5.00 to CDN$6.65. The SARs issued vest over three years in three equal annual installments and expire on December 31, 2022. A total of 405,000 SARs with exercise prices ranging from CDN$2.30 to CDN$3.87 were exercised during the year ended December 31, 2019 resulting in a total cash payout of $1.1 million. A total of 86,667 SARs with an exercise price of CDN$5.00 were forfeited during the year ended December 31, 2019.

As at December 31, 2019 a total of 234,700 RSUs were outstanding compared to 87,500 at December 31, 2018. A total of 217,700 of new RSUs were issued during the year ended December 31, 2019 with an exercise price of CDN$0.01. A total of 62,500 RSUs were exercised during the year ended December 31, 2019 resulting in a total cash payout of $0.3 million. A total of 8,000 RSUs with an exercise price of CDN$0.01 were forfeited during the year.

As SARs and RSUs are settled in cash, they are re-valued at each reporting date using the Black-Scholes option pricing model with the resulting liability being recognized in trade and other payables. In the valuation of SARs and RSUs at the reporting date, the following assumptions have been made: a risk free rate of interest of 1.0%, stock volatility of 30.1% to 40.9%, 0% dividend yield, 5% forfeiture and a closing price of CDN$6.05 per Class B Share.

As at December 31, 2019 a total accrued liability of $2.5 million (December 31, 2018: $1.6 million) has been recognized in relation to SARs and RSUs. The Company recognized an expense for the year of $2.5 million (2018: $4.6 million) as stock based compensation. The relatively larger amount of stock based compensation expense in the year ended December 31, 2018 was primarily a result of the sale of the non-controlling interest in PAE PanAfrican Energy Corporation ("PAEM") in Q1 2018 and the corresponding increase in share price and exercise of awards.

Depletion and Depreciation

Natural gas properties are depleted using the unit of production method based on the production for the period as a percentage of the total future production from the Songo Songo proved reserves. As at December 31, 2019 the estimated proved reserves remaining to be produced over the term of the PSA license were 234 Bcf (December 31, 2018: 261 Bcf). A depletion expense increase is a result of the increased volumes given there was little increase in the average depletion rate of $0.63/mcf for 2019 compared to $0.62/mcf for 2018.

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Oil and gas natural interests	**4,566**	3,222	**15,005**	9,495
Office and other	**30**	42	**135**	165
Right-of-use assets	**47**	–	**189**	–
	4,643	3,264	**15,329**	9,660

Finance Income and Expense

Finance income is detailed in the table below:

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Interest income	**237**	126	**666**	625
Investment income	**416**	423	**2,199**	1,084
Reversal of provision for doubtful accounts	**7,546**	2,560	**11,044**	17,427
	8,199	3,109	**13,909**	19,136

The 2018 trend which saw TANESCO making payments in excess of amounts owed for gas delivered, continued in 2019. The Company: (i) recognized all amounts invoiced for gas deliveries in 2019 of $50.6 million as revenue (2018: 31.7 million); and (ii) with payments during the year of $61.6 million (2018: $43.3 million) recognized $11.0 million during the year (2018: $11.6 million) as finance income relating to the amounts collected during 2019 that were applied towards the long-term TANESCO arrears previously provided for. In 2018 additional amounts were recognized that had been previously provided for: (i) $4.3 million of finance income was for payments in excess of gas deliveries for prior years that had been previously recorded as deferred income; (ii) a recovery of a Songas receivable of $1.2 million; and (iii) recovery of $0.3 million of VAT receivable relating to an Italian entity.

As at December 31, 2019 the Company had $44.8 million invested in US dollar short-term bonds with maturity dates from February 2020 to July 2020 and a range of interest rates from 1.375% to 2.75% (December 31, 2018: $66.8 million with maturity dates from March 2019 to December 2019 and a range of interest rates from 0.875% to 2.125%). The investment income for the year includes interest earned of $1.4 million (2018: $0.6 million) and amortization of the discount on the acquisition of the bonds of $0.8 million (2018: $0.5 million). The investment income for Q4 2019 includes accrued interest of $0.3 million (Q4 2018: $0.2 million) and amortization of the discount on the acquisition of the bonds of $0.1 million (Q4 2018: $0.2 million). The Company's intent is to hold the bond investments to maturity. The bonds are highly liquid by their nature and may readily be liquidated into cash if necessary. To date, there have been no sales of bond investments prior to their maturity.

Finance expense is detailed in the table below:

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Base interest expense	**1,481**	1,591	**6,164**	6,249
Participation interest expense	**120**	342	**2,071**	4,745
Lease interest expense	**44**	–	**44**	–
Interest expense	**1,645**	1,933	**8,279**	10,994
Net foreign exchange loss	**9**	87	**289**	695
Indirect tax	**303**	328	**1,298**	3,689
	1,957	2,348	**9,866**	15,378

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Finance Income and Expense continued

Base and participation interest expense relate to the long-term loan ("Loan") from the International Finance Corporation ("IFC"). Base interest on the Loan is payable quarterly at 10% per annum on a 'pay-if-you-can-basis' using a formula to calculate the net cash available for such payments as at any given interest payment date. In addition, the Loan initially included an annual variable participation interest equating to 7% of the net cash flows from operating activities less net cash flows used in investing activities of its subsidiary, PanAfrican Energy Tanzania Limited ("PAET"), in respect of any given year. The current rate is 6.4% as a prepayment of $2.6 million was made in January 2018 associated with the sale of a 7.9% interest in PAEM (see "Non-Controlling Interest"). Such participation interest will continue until October 15, 2026 regardless of whether the Loan is repaid prior to its contractual maturity date.

The base interest expense decreased slightly as a long-term loan repayment of $4.8 million was made during Q4 2019. The participation interest expense was lower in 2019 as a result of the prepayment in 2018.

Net foreign exchange gains and losses are the result of transactions in foreign currencies being recorded at the rate of exchange prevailing at the date of the transaction. Monetary assets and liabilities in foreign currencies are translated at period-end rates. Non-monetary items are translated at historic rates, unless such items are carried at market value, in which case they are translated using the exchange rates that existed when the values were determined. These foreign exchange losses and gains are recorded in finance expense.

The indirect tax is for VAT associated with invoices to TANESCO for interest on late payments and invoices under the take or pay provisions within the PGSA. The decline in indirect taxation is primarily a result of no invoice being issued under the take or pay provisions of the PGSA as TANESCO took the required volumes during the contract year to June 20, 2019. In 2018 a take or pay invoice of $16.6 million was issued. These invoices are not recognized in the financial statements as they do not meet revenue recognition criteria with respect to assurance of collectability.

Tax

Income Tax

The income tax charges are detailed in the table below:

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Current tax	**1,747**	53	**10,657**	4,588
Deferred tax expense	**1,223**	926	**2,326**	1,016

Under the terms of the PSA with TPDC and the GoT, the Company is liable for income tax in Tanzania at the corporate tax rate of 30%. However, the PSA provides a mechanism by which income tax payable is recovered from TPDC by reducing TPDC's share of Profit Gas revenue and increasing the allocation to the Company. This is reflected in the accounts by increasing the Company's share of revenue by an amount equivalent to income taxes payable grossed up by 30%.

As at December 31, 2019 there were temporary differences between the carrying value of the assets and liabilities for financial reporting purposes and the amounts used for taxation purposes under the Income Tax Act 2004. Applying the 30% Tanzanian tax rate, the Company has recognized a deferred tax liability of $15.2 million (December 31, 2018: $12.8 million). The deferred tax has no impact on cash flow until it becomes a current income tax, at which point the tax is paid and recovered from TPDC's share of Profit Gas.

Additional Profits Tax

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
APT	**1,304**	876	**6,587**	3,014

Under the terms of the PSA, APT is payable when the Company has recovered its costs plus a specified return out of Cost Gas revenues and Profit Gas revenues. As a result: (i) no APT is payable until the Company recovers its costs out of Additional Gas revenues plus an annual operating return under the PSA of 25% plus the percentage change in the United States Industrial Goods Producer Price Index ("PPI"); and (ii) the maximum APT rate is 55% of the Company's Profit Gas when costs have been recovered with an annual return of 35% plus the percentage change in PPI.

The timing and the effective rate of APT depends on the realized value of Profit Gas which in turn depends on the level of expenditure. The Company provides for APT by annually forecasting the total APT payable in the future as a proportion of the forecast Profit Gas over the term of the PSA. The forecast takes into account the timing of future development capital spending. As at December 31, 2019 the current portion of APT payable was $11.9 million (December 31, 2018: $ nil) with a long-term APT payable of $32.3 million (December 31, 2018: $37.6 million).

The effective APT rate for the quarter of 16.8% (Q4 2018: 19.7%) has been applied to Company Profit Gas of $7.8 million (Q4 2018: $4.5 million), and an average effective APT rate of 19.0% (2018: 19.4%) has been applied to Company Profit Gas of $34.6 million (2018: $15.5 million) for the year ended December 31, 2019. Accordingly, $1.3 million (Q4 2018: $0.9 million) and $6.6 million (2018: $3.0 million) have been recorded for the quarter and for the year ended December 31, 2019, respectively.

Working Capital

Working capital as at December 31, 2019 was $107.0 million (December 31, 2018: $84.2 million) and is detailed in the table below:

$'000	As at December 31			
		2019		2018
Cash and cash equivalents		**93,899**		64,660
Investment in short term bonds		**44,756**		66,837
Trade and other receivables				
Songas	**8,763**		8,985	
TPDC	**7,284**		–	
Industrial customers and other receivables	**10,287**		11,044	
Provision for doubtful accounts	**(4,167)**	**22,167**	(4,167)	15,862
Prepayments		**6,752**		1,217
		167,574		148,576
Trade and other payables				
TPDC share of Profit Gas revenue[1]	**33,134**		40,260	
Songas	**2,354**		1,785	
Other trade payables and accrued liabilities	**12,673**		17,589	
Current portion of long-term debt	**–**		4,760	
Current portion of Additional Profits Tax	**11,940**	**60,101**	–	64,394
Tax payable		**501**		–
		60,602		64,394
Working capital		**106,972**		84,182

[1] The balance of $33.1 million payable to TPDC is the liability for TPDC's share of Profit Gas revenue primarily related to unpaid gas deliveries to TANESCO, net of $4.9 million previously recorded as tax recoverable. The majority of the settlement of this liability is dependent on receipt of payment from TANESCO for arrears. A total of $22.3 million was paid to TPDC in 2019 for their allocation of profit share which includes the payments received for arrears. The balance of the accrual relates to the profit share associated with trade receivables and the difference between profit share percentages used to record the accrued liability at the time of delivery of the gas to TANESCO versus the profit share percentage used at the time payment was received. The settlement of this accrual is dependent on the collection of the arrears and resolving other compensation issues with the GoT relating to forced reduction deliveries and sales of gas to TANESCO. In February 2020 an additional $1.8 million was paid to TPDC for profit share.

Financial Instruments

Current financial instruments of the Company include cash and cash equivalents, investment in short term bonds, trade and other receivables, trade and other payables and tax payable. The carrying values of the financial instruments approximate fair values due to their relatively short periods to maturity.

There are no restrictions on the movement of cash from Jersey, Mauritius or Tanzania, and the majority of the Company's cash and investment in short-term bonds is currently held outside of Tanzania.

Working Capital Requirements

The Company expects to have sufficient cash flow from operating activities to maintain adequate working capital to cover both short-term and long-term obligations, including forecast debt and interest payments ($7.8 million) and capital expenditure ($44.5 million) for 2020. The Company does not expect to incur any losses from debtors in 2020.

The Company is adapting to the recent outbreak of the novel coronavirus ("COVID-19") and the related economic and social disruption, volatility in financial markets, potential disruption to global supply chains, and the ability to directly and indirectly staff the Company's day to day operations. The current challenging economic climate may lead to further adverse changes in cash flows, working capital levels and/or debt balances, which may also have a direct impact on the Company's operating results and financial position. These and other factors may adversely affect the Company's liquidity and ability to generate income and cash flows in the future. The current volatility in commodity prices and uncertainty regarding the timing for recovery creates inherent challenges with the preparation of financial forecasts.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Working Capital continued

TANESCO Receivable

As at December 31, 2019 the current receivable from TANESCO was $ nil (December 31, 2018: $ nil). During the year the amounts received from TANESCO continued to be in excess of the revenue recognized for gas sales to TANESCO. The TANESCO long-term trade receivable as at December 31, 2019 was $47.5 million with a provision of $47.5 million compared to $58.5 million (with a provision of $58.5 million) as at December 31, 2018. Subsequent to December 31, 2019 the Company has invoiced TANESCO $4.9 million for 2020 gas deliveries and TANESCO has paid the Company $18.1 million.

The following table details the total amounts receivable from TANESCO that do not meet revenue recognition criteria and therefore are not recorded in the consolidated financial statements:

	As at December 31	
$'000	2019	2018
Total amounts invoiced to TANESCO	**118,861**	121,393
Unrecognized amounts not meeting revenue recognition criteria[i]	**(71,407)**	(62,895)
Provision for doubtful accounts	**(47,454)**	(58,498)
	–	–

i The amount includes invoices for interest on late payments and invoices relating to differences between gas contracted for delivery versus gas taken by TANESCO.

Capital Expenditures

The capital expenditures in 2019 and 2018 primarily relate to the refrigeration project for the Songas Infrastructure (does not include increases from capitalized leases).

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Pipelines and infrastructure	**1,007**	2,561	**4,153**	5,744
Other capital expenditures	**7**	67	**18**	99
	1,014	2,628	**4,171**	5,843

Capital Requirements

There are no contractual commitments for exploration or development drilling or other field development, either in the PSA or otherwise agreed, which would give rise to significant capital expenditure at Songo Songo. Any significant additional capital expenditure in Tanzania is discretionary.

The current Development Program includes well workovers at an estimated cost of $13.1 million. A total of $2.9 million was incurred on the refrigeration project in 2019 (2018: $4.2 million). The refrigeration unit installation was completed in September 2019 with final acceptance scheduled for 2020 subject to correcting some minor faults. The refrigeration unit is operational and has enabled the Company to increase the volumes that can be processed and transported to Dar es Salaam through the Songas Infrastructure to 100 MMcfd.

To sustain current levels of production beyond 2020, it will be necessary to install compression facilities to maintain throughput of the Songas facilities over the remaining term of the PSA. Failure to add compression will lead to a significant reduction in production as field pressure declines below the level required to deliver gas to the Dar es Salaam power sector and industrial customers. On December 23, 2019 a Letter of Instruction was signed with an international contractor with significant presence and experience in Tanzania to commence detailed engineering and design for the compression project. A fixed-price turnkey contract for the project is expected to be signed in Q2 2020. It is expected that compression will be operational by the end of Q1 2022 and will cost approximately $38 million of which $34.2 million is forecast to be spent in 2020.

The Company is evaluating the merits of conducting three onshore workovers, wells SS-3, SS-4 and SS-10. Wells SS-3 and SS-4 are owned by Songas and are currently suspended and shut-in respectively. A decision on the timing and scope of the workovers is subject to the approval by the Board of Directors and agreement with Songas; this is expected to be taken by the end of Q2 2020. Part of the forecast workover cost of $13.1 million is expected to be recovered from Songas. The Company is also looking at alternatives to plug and abandon wells SS-3 and SS-4 or possible sidetracking to improve production rates.

At the date of this report, the Company has no significant outstanding contractual commitments and no outstanding orders for long lead items related to any capital programs.

Long-term Receivables

$'000	As at December 31 2019	2018
VAT Songas workovers	**2,205**	2,205
Lease deposit	**45**	219
	2,250	2,424

In 2017, based on agreement with TPDC, the Songas share of workover costs of $14.5 million was transferred to the cost pool to recover the costs via the PSA cost recovery mechanism. This resulted in $2.2 million relating to VAT on the workovers that had already been paid being reclassified as a long-term receivable. The Company continues to take action to collect the workover costs. Amounts not collected will be pursued through the mechanisms provided in the agreements with Songas.

Long-term Loan

In 2015 PAET took out the Loan of $60 million with the IFC. The Loan was fully drawn down in 2016.

The Loan is to be paid out through six semi-annual payments of $5 million starting April 15, 2022 and one final payment of $25.2 million due on April 15, 2025. The Company may voluntarily prepay all or part of the Loan but must simultaneously pay any accrued base interest costs related to the principal amount being prepaid. The Loan is an unsecured subordinated obligation of PAET and was initially guaranteed by the Company to a maximum of $30 million. The initial guarantee may only be called upon by IFC at maturity in 2025 and, subject to IFC approval and receipt of all required regulatory approvals, the Company, at its discretion, may issue shares in fulfillment of all or part of the guarantee obligation in 2025. Pursuant to the sale of the non-controlling interest in the parent company of PAET, PAEM, the Company agreed with the IFC to reduce the outstanding amount of the loan by the percentage interest sold of 7.9% ($4.8 million) on the fourth anniversary of the first drawdown. PAET made this payment on October 16, 2019.

Dividends and distributions from PAET to the Company are restricted at any time whenever amounts of interest, principal or participating interest are due and outstanding. All amounts under the Loan have been paid when due.

Outstanding Shares

The Class A Shares are convertible at any time at the option of the holder into Class B Shares on a one-for-one basis. Subject to the terms and conditions of conversion specified in the memorandum of association and articles of association of the Company, the Class B Shares are convertible into Class A Shares on a one for one basis if an offer is made to purchase Class A Shares that: (i) must, by reason of applicable securities legislation or the requirements of a stock exchange on which the Class A Shares are listed, be made to all or substantially all of the holders of Class A Shares; and (ii) is not made concurrently with an offer to purchase Class B Shares that is identical to the offer to purchase Class A Shares and that has no condition attached other than the right not to take up and pay for shares tendered if no shares are purchased pursuant to the offer for Class A Shares. The conversion right does not come into effect under certain events specified in the memorandum of association of the Company, including, without limitation, the prior delivery to the Company's transfer agent and to the Secretary of the Company of a certificate signed by one or more shareholders owning more than 50% of the then outstanding Class A Shares.

There were 34,307,752 shares outstanding as at December 31, 2019. As at the date of this report there were a total of 1,750,495 Class A Shares and 24,864,960 Class B Shares outstanding following the completion of the substantial issuer bid of CDN$50.0 million on March 5, 2020.

Cash Flow Summary

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Operating activities				
Net income	**12,862**	2,910	**26,346**	13,563
Non-cash adjustments	**8,244**	4,847	**27,911**	21,919
Interest expense	**1,645**	1,933	**8,279**	10,994
Changes in non-cash working capital[1]	**(17,595)**	(5,605)	**(27,663)**	(17,724)
Net cash flows from operating activities	**5,156**	4,085	**34,873**	28,752
Net cash used in investing activities	**(1,057)**	(2,471)	**(4,285)**	(5,051)
Net cash from (used in) financing activities	**23,592**	1,444	**(1,339)**	(81,665)
Increase (decrease) in cash	**27,691**	3,058	**29,249**	(57,964)

[1] See Consolidated Statements of Cash Flows

The Company's net cash flows from operating activities for Q4 2019 increased 24% and by 21% for the year over the comparable prior year period. The increases are mainly due to an increase in revenue between periods and a decrease in stock based compensation. The yearly result for 2018 reflected the exercise of significant share awards following completion of the sale of a non-controlling interest in PAEM in Q1 2018. The decrease in cash used in financing activities is primarily a result of an additional investment in short-term bonds in Q1 2018 compared to bonds maturing in Q3 2019 which were not reinvested in short-term bonds.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Related Party Transactions

The Chairman of Orca's Board of Directors is counsel to a law firm that provides legal advice to the Company and its subsidiaries. Fees for the services provided by this firm totaled $0.2 million during Q4 2019 (Q4 2018: $ nil) and $0.4 million for the year (2018: $0.3 million). As at December 31, 2019 the Company had a total of $0.2 million (December 31, 2018: $0.04 million) recorded in trade and other payables in relation to the related party.

Normal Course Issuer Bid and Dividends

On June 10, 2019 Orca was authorised by the TSXV to purchase up to 1.0 million Class B Shares pursuant to the NCIB for the 12-month-period commencing on June 14, 2019 and ending on June 14, 2020. Between June 24, 2019 and October 17, 2019, Orca purchased for cancellation 933,028 Class B Shares at a weighted average price of CDN$6.43 per Class B Share for aggregate consideration of approximately CDN$6.0 million, the maximum consideration authorised under the NCIB. Purchases pursuant to the NCIB were by way of open market transactions on the TSXV and/or other exchanges and alternative trading systems.

On April 6, 2020 Orca was authorised by the TSXV to amend its NCIB commenced on June 14, 2019 to allow it to purchase additional Class B Shares through the facilities of the TSXV and alternative trading systems in Canada. Purchases made pursuant to the NCIB will not exceed 700,000 Class B Shares, representing not more than 5% of the issued and outstanding Class B Shares as at June 14, 2019 (33,505,915 Class B Shares) less 933,028 Class B Shares already purchased under the NCIB. Purchases pursuant to the NCIB will be made by Mackie Research Capital Corporation ("Mackie") pursuant to an automatic purchase plan in order to allow repurchases of Class B Shares during Orca's self-imposed blackout periods. Purchases will be made by Mackie based on the parameters prescribed by the TSXV and applicable securities laws and the terms of the parties' written agreement. The NCIB will cease on the earlier of: (a) the date on which Orca shall have acquired all of the Class B Shares sought pursuant to the NCIB; and (b) the date that is 12-months following the commencement of the NCIB which started June 14, 2019, unless terminated earlier in accordance with the automatic share purchase plan, and upon prior notice being given to the TSXV.

The acquisition price of the Class B Shares purchased for cancellation under the NCIB will not exceed the market price of the securities at the time of acquisition. The funds available to acquire the Class B Shares will come from Orca's working capital and cash flow. Shareholders may obtain a copy of the notice regarding the NCIB filed with the TSXV from Orca without charge.

Dividend Summary

Declaration date	Record date	Payment date	Amount per share (*CDN$*)
February 25, 2020	March 31, 2020	April 30, 2020	0.06
November 28, 2019	December 31, 2019	January 31, 2020	0.06
September 17, 2019	September 30, 2019	October 31, 2019	0.06
May 29, 2019	June 30, 2019	July 31, 2019	0.06
January 22, 2019	March 31, 2019	April 30, 2019	0.05
January 18, 2018	January 31, 2018	February 7, 2018	0.60

Consolidation

The companies which are being consolidated for the purposes of this MD&A are:

Company	Incorporated	Holding
Orca Exploration Group Inc.	British Virgin Islands	Parent Company
Orca Exploration Italy Inc.[1]	British Virgin Islands	100%
Orca Exploration Italy Onshore Inc.[1]	British Virgin Islands	100%
PAE PanAfrican Energy Corporation	Mauritius	92%
PanAfrican Energy Tanzania Limited	Jersey	92%
Orca Exploration UK Services Limited	United Kingdom	100%

1 To be wound up during 2020.

Non-Controlling Interest

On January 16, 2018 the Company sold 7.9% (7,933 Class A common shares) of PAEM to a wholly owned subsidiary of Swala Oil & Gas (Tanzania) plc. ("Swala") for $15.4 million cash (net of closing adjustments) and $4.0 million of Swala convertible preference shares ("Preference Shares") pursuant to a share purchase agreement. The Preference Shares were issued to the Company on June 18, 2018 and entitle the Company to a 10% per annum distribution payable 15 days after each quarter end commencing from the closing date, January 16, 2018. Payment of the quarterly distributions is at the discretion of Swala based on funds available, however, the liability accrues if any amount is unpaid when due. If any distributable amount remains unpaid at December 31, 2021, the Company may demand settlement and Swala is obligated to comply by transferring and returning the Class A common shares of PAEM sold to Swala. The aggregate value of these shares will equal the amount of the outstanding distributions. As at December 31, 2019 the Company has not received any distributions or recorded any amount receivable related to the Preference Shares.

Swala is obligated to redeem 20% of the Preference Shares for cash annually starting from December 31, 2021 until all shares are redeemed. If at any time Swala does not redeem in cash the required number of Preference Shares, Swala is obligated to redeem the Preference Shares by transferring and returning the Class A common shares of PAEM sold to Swala. The aggregate value of these Class A common shares will equal the amount of any outstanding redemption.

The share purchase agreement provided Swala with the right to acquire up to a maximum of 40% of the outstanding Class A common shares of PAEM based on the same terms and conditions. The Company terminated this right on March 31, 2019.

A reconciliation of the non-controlling interest is detailed below:

	As at December 31	
$'000	2019	2018
Balance, beginning of year	**(513)**	–
Recorded at the date of disposition	**–**	178
Share of post-disposition income	**1,628**	293
Dividends paid	**(952)**	(984)
Balance, end of year	**163**	(513)

During the year PAEM paid a dividend of $1.0 million (2018: $1.0 million) to Swala.

Contingencies

Taxation

Amounts in $'millions					As at December 31 2019	2018
Area	Period	Reason for dispute	Principal	Interest	Total	Total
Pay-As-You-Earn ("PAYE") tax	2008-16	PAYE tax on grossed-up amounts in staff salaries which are contractually stated as net.	**1.2**	**0.3**	**1.5**[(1)]	0.3
Withholding tax ("WHT")	2005-16	WHT on services performed outside of Tanzania by non-resident persons.	**5.7**	**2.6**	**8.3**[(2)]	1.7
Income tax	2008-16	Deductibility of capital expenditures and expenses (2009, 2012, 2015 and 2016), additional income tax (2008, 2010, 2011 and 2012), tax on repatriated income (2012), deemed branch dividend (2015 and 2016), foreign exchange rate application (2013 and 2015) and underestimation of tax due (2014).	**35.2**	**15.7**	**50.9**[(3)]	42.6
VAT	2008-16	Output VAT on imported services and SSI Operatorship services.	**2.8**	**2.9**	**5.7**[(4)]	5.5
			44.9	**21.5**	**66.4**	50.1

During 2019 and following completion of audits for the years ended December 31, 2015 and December 31, 2016, Tanzania Revenue Authority ("TRA") issued assessments for $15.1 million with regards to corporation tax, withholding tax, VAT, excise duty and payroll tax. With the exception of $0.1 million of VAT and WHT on rent which the Company has conceded, the Company has objected to the other components of the assessment and requested a waiver of the deposit required to allow a dispute of the assessment and is awaiting a TRA response. The Company has also objected to several other assessments from TRA demanding deposits to allow the dispute to be made and is awaiting Tax Revenue Appeal Board ("TRAB") hearing dates. Management, with advice from its legal counsels, has reviewed the Company's position on the objections and appeals related to the disputed amounts and has concluded that no provision is required with regard to these matters and that the maximum potential exposure is $66.4 million (December 31, 2018: $50.1 million).

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Contingencies continued

The process of appealing assessments issued by TRA start by initially filing an appeal with TRA. If this is not successful, claims can be taken to higher authorities starting with the TRAB, followed by an appeal to the Tax Revenue Appeals Tribunal ("TRAT") and finally to the Court of Appeal of Tanzania ("CAT"). Below is a summary of the status of the various assessments:

(1) (a) 2008-10 ($0.3 million): Subsequent to December 31, 2019 the Company lost an appeal with CAT on the principal amount and now intends to file an application for judicial review at CAT;

(b) 2015-16 ($1.2 million): The Company has objected to an assessment and is awaiting a TRA response;

(2) (a) 2005-2009 ($1.6 million): In 2018 the CAT ruled in favor of the Company that no WHT was required on services performed outside Tanzania by non-resident persons. Waiting to see whether TRA will file an application to object to the CAT ruling;

(b) 2010 ($0.1 million): The Company filed a Statement of Appeal with TRAT and is awaiting a hearing date. The Company has also filed an application for stay of execution with TRAT in response to the TRA demand notice for payment of the amount in dispute and is awaiting a hearing date;

(c) 2015-16 ($6.6 million): The Company objected to several assessments in Q4 2019 issued by TRA with regards to withholding tax. The Company has objected to these assessments and is awaiting a TRA response;

(3) (a) 2008 ($0.6 million): The Company has objected to a TRA assessment that did not recognize a tax loss carried forward and is awaiting a response;

(b) 2009 ($2.6 million): The Company has filed an application for review of a CAT judgment and is awaiting a hearing date ($1.8 million). The Company objected to an amended assessment from TRA ($0.8 million) for being time-barred and arbitrary and is awaiting a TRA response;

(c) 2010 ($2.4 million): The Company is awaiting a judgment from a TRAB hearing held in 2019;

(d) 2011 ($1.9 million): The Company is awaiting a judgment from TRAB ($1.7 million). The Company is also awaiting a TRA response on an objection of an assessment ($0.2 million);

(e) 2012 ($15.5 million): The Company has objected to TRA assessments with respect to understated revenue, timing of deductibility of capital expenditures, expenses and tax on repatriated income. The Company is awaiting a CAT hearing date for waiver of a deposit payment required to file its objection;

(f) 2013 ($8.7 million): The Company filed an objection to TRA assessment ($0.2 million) and is awaiting a response. The Company has objected to two assessments as being time-barred and without merit ($8.5 million) and is in the process of appealing to CAT that a deposit is required to file the objection;

(g) 2014 ($11.4 million): The Company filed an objection to a TRA assessment ($3.3 million) and is in the process of appealing to CAT that a deposit is required to file the objection. TRA issued two additional assessments for the year for corporation tax of $5.0 million and tax on repatriated income of $3.1 million. The Company has objected to the assessments and is awaiting a TRA response;

(h) 2015-16 ($7.8 million): The Company filed objections to TRA assessments and is awaiting a response;

(4) (a) 2008-2010 ($5.4 million): The Company has filed an appeal of a TRA assessment and is awaiting a TRAT judgment;

(b) 2015-16 ($0.3 million): The Company has filed an objection to a TRA assessment and is awaiting a response.

In 2016 TRA introduced significant changes in relation to the income tax treatment of the extractive sector with separate new chapters in Part V of the Income Tax Act 2004 ("ITA, 2004") for mining and for petroleum to be effective commencing in 2018. Further changes were subsequently made by the Written Laws (Miscellaneous Amendments) Act, 2017 ("WLMAA, 2017") and in particular section 36(a)(ii) of the WLMAA, 2017. The WLMAA, 2017 amended section 65M and 65N of the ITA 2004 to exclude cost oil/cost gas from inclusion in both income and expenditure. The Company is still evaluating the tax effects of the changes as there are a number of uncertainties and ambiguities as to the interpretation and application of certain provisions of the WLMAA, 2017. In the absence of guidance on these matters, the Company has used what it believes are reasonable interpretations and assumptions in applying the WLMAA, 2017 for purposes of determining its tax liabilities and the results of operations, which may change as it receives additional clarification and implementation guidance. The Company does not expect a significant impact from the changes as it is able to recover taxes payable from the TPDC Profit Gas entitlement under the terms of the PSA.

Accounting Policies and Changes

New Accounting Policies

IFRS 16: Leases

Effective January 1, 2019 the Company adopted IFRS 16 using the modified retrospective approach, and therefore the comparative information has not been restated and continues to be reported under IAS 17 and IFRIC 4. The implementation of the new policy has not resulted in any material changes to the Company's financial statements.

On adoption of IFRS 16 the Company elected to apply the practical expedient of retaining the assessment of which transactions are leases. IFRS 16 was applied only to contracts that were previously identified as leases. Contracts that were not identified as leases under IAS 17 and IFRIC 4 were not reassessed as to whether or not there is a lease. Therefore, the definition of a lease under IFRS 16 was applied only to contracts entered into or changed after January 1, 2019.

The Company recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is depreciated using the straight-line method from its commencement date to the earlier of the end of the useful life of the right-of-use asset or end of the lease term. The estimated useful lives of right-of-use assets are determined on the same basis as those of property, plant and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain re-measurements of the lease liability.

Accounting Policies and Changes continued

The lease liability is initially measured at the present value of the minimum lease payments that are not yet paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Company's incremental borrowing rate for that asset. Generally, the Company uses its incremental borrowing rate as the discount rate. The lease liability is subsequently increased by the interest cost on the lease liability and decreased by lease payments made. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, a change in estimate of the amount expected to be payable under a residual value guarantee, changes in the assessment of whether a purchase or extension option is reasonably certain to be exercised or a termination option is reasonably certain not to be exercised.

As a result of adopting IFRS 16, the Company has recorded right-of-use assets and lease liabilities related to contracts which previously had been off-balance sheet and classified as operating leases under IAS 17.

Operating Leases

The Company has three rental agreements for offices, one located in Dar es Salaam, Tanzania, one in Winchester, UK and one in London, UK. A new agreement for the office in Dar es Salaam was entered into on November 1, 2019 and expires on October 31, 2023 at an annual rent of $0.4 million. The Winchester lease expires on September 25, 2022 at an annual rental of $0.2 million per annum. The Winchester office is currently vacant as the Company was trying to sublet and is now considering options for utilizing the office space. The lease of the London office was initially for a 12-month period and was renewed on February 1, 2020 at $0.2 million per annum for a further six months. The cost of the London office lease is recognized in the general and administrative expenses.

Short-Term Leases and Leases of Low Value Assets

The Company has elected not to recognize right-of-use assets and lease liabilities for short term leases that have a term of twelve months or less and leases of low value assets. The Company recognizes the lease payments associated with these leases as an expense when incurred, over the lease term.

Future Accounting Changes

The following pronouncements from the IASB will become effective or were amended for financial reporting periods beginning on or after January 1, 2020 and have not yet been adopted by the Company.

On October 22, 2018, the IASB issued "Definition of a Business (Amendments to IFRS 3)" aimed at resolving the difficulties that arise when an entity determines whether it has acquired a business or a group of assets. The amendments are effective for business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020.

On October 31, 2018, the IASB issued "Definition of Material (Amendments to IAS 1 and IAS 8)" to clarify the definition of 'material' and to align the definition used in the Conceptual Framework and the standards themselves. The amendments are effective for annual reporting periods beginning on or after January 1, 2020.

The Company continues to review its position with respect to the IASB pronouncements but is not expecting any potential impact on its consolidated financial statements.

Disclosure Controls and Procedures and Internal Controls over Financial Reporting

The Company's President and Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO") have designed, or caused to be designed under their supervision, disclosure controls and procedures ("DC&P") for Orca. DC&P, as defined in National Instrument 52-109, *Certification of Disclosure in Issuers' Annual and Interim Filings*, are designed to provide reasonable assurance that information required to be disclosed in reports filed with, or submitted to, securities regulatory authorities is recorded, processed, summarized and reported within the time periods specified under Canadian securities law and include controls and procedures designed to ensure that information required to be so disclosed is accumulated and communicated to management, including the CEO and CFO, as appropriate, to allow timely decisions regarding required disclosure. The CEO and CFO of Orca evaluated the effectiveness of the design and operation of the Company's DC&P. Based on the evaluation, the officers concluded that Orca's DC&P were effective as at December 31, 2019.

Quarterly Results Summary

The following is a summary of key results for the Company for the last eight quarters:

Figures in $'000	2019				2018			
except where otherwise stated	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Revenue	**23,212**	21,453	20,994	19,936	13,460	15,124	14,959	14,223
Net income (loss) attributable to shareholders	**12,339**	2,591	7,004	2,784	2,751	2,637	12,493	(4,611)
Earnings (loss) per share								
– basic and diluted ($)	**0.36**	0.07	0.20	0.08	0.09	0.07	0.35	(0.13)
Net cash flows from operating activities	**5,156**	7,568	8,943	13,206	4,085	10,483	12,657	1,527
Adjusted funds flow from operations [1]	**13,560**	10,153	10,463	9,037	6,398	5,130	4,752	2,975
Capital expenditures	**2,679**	652	1,413	1,092	2,628	1,354	1,042	819

1 See non-GAAP measures.

Revenue has grown steadily through the last eight quarters. The decrease in Q4 2018 was primarily the result of a negative income tax adjustment. Access to the NNGI in December 2018 resulted in increased deliveries to TANESCO and TPDC throughout 2019 and the corresponding continuous revenue growth in 2019.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Quarterly Results Summary continued

Net income (loss) attributable to shareholders was affected, in addition to factors affecting revenue, by the following:

- The loss in Q1 2018 was a result of increased interest expense ($4.7 million) and stock based compensation ($4.8 million) primarily a result of the sale of a non-controlling interest in PAEM resulting in an additional interest payment to the IFC and an increase in the share price
- The increase in Q2 2018 resulted from the reversal of a provision for doubtful accounts against TANESCO and a corresponding increase in finance income of $13.4 million
- Increases in net income in Q2 2019 and Q4 2019 reflect the increase in finance income related to the collection of $3.5 million and $7.5 million of TANESCO arrears respectively. The decrease in net income in Q3 2019 was a result of decreased collection of TANESCO arrears compared with Q2 2019

In addition to the factors impacting net income, net cash flows from operating activities were primarily affected by the timing and amount of payments received from TANESCO. This is the primary reason for the large cash flows in Q2 and Q3 2018. The decrease in Q4 2018 was due to a combination of changes in non-cash working capital following a payment of TPDC Profit Gas entitlement during the quarter along with the decrease in revenue. The fluctuations throughout 2019 were primarily a result of the increase in revenue from quarter to quarter, payments to TPDC for profit share and changes in non-cash working capital.

Adjusted funds flow from operations for the last eight quarters has shown consistent growth coinciding with the revenue growth. The consistent payments from TANESCO have resulted in recording 100% of TANESCO deliveries as revenue since Q2 2018. The increase in Q4 2019 was primarily related to the increased deliveries through the NNGI with the signing of the new LTGSA which resulted in TPDC taking gas deliveries of up to 30 to 40 MMcfd during the quarter.

Capital expenditures in 2019 and 2018 primarily relate to the refrigeration project. Additionally, in 2018, work on the flowline to well SS12 was completed.

Selected Annual Financial Information

Selected annual financial information derived from the audited consolidated financial statements for the years ended December 31, 2019, 2018 and 2017 is set out below:

Figures in $'000 except per share amount	2019	2018	2017
Revenue	**85,595**	57,766	60,832
Net income (loss) attributable to shareholders	**24,718**	13,270	(2,500)
Earnings (loss) – basic and diluted ($ per share)	**0.71**	0.38	(0.07)
Cash dividends declared (CDN$ per Class A and B Shares)	**0.23**	0.60	–
Net cash flows from operating activities	**34,873**	28,752	48,154
Adjusted funds flow from operations(1)	**43,213**	19,255	16,742
Total non-current liabilities	**102,603**	104,345	104,932
Total assets	**271,772**	262,441	249,549

1 See Non-GAAP measures.

Revenue increased by 48% in 2019 compared to 2018. This was a result of increased sales to TANESCO and TPDC through NNGI as well as a higher current income tax adjustment. The 5% decrease of revenue in 2018 compared to 2017 was primarily due to lower power sales volumes, higher TPDC Profit Gas entitlement and a lower current income tax adjustment.

The increases in net income attributable to shareholders were primarily due to increased revenue and the reversal of provisions for doubtful accounts related to the collection of TANESCO arrears. The net loss of $2.5 million in 2017 was primarily a result of not recording 100% of TANESCO deliveries as revenue during the year and no reversals of TANESCO doubtful account provisions.

The Company does not have a dividend policy. The dividend in 2018 of CDN$0.60 per share was approved following the sale of a 7.9% interest in PAEM. In 2019 the Company approved quarterly dividends, CDN$.05 per share for Q1 2019 and CDN$.06 per share for Q2, Q3 and Q4 2019. Please refer to the table in the Normal Course Issuer Bid and Dividend section of this MD&A.

The fluctuations in net cash flows from operating activities compared to net income are primarily related to the timing of TANESCO receipts versus the timing of recognition in the consolidated statement of income. This explains the relatively larger net cash flows from operating activities in 2017. The decrease of 40% in 2018 compared to 2017 was also impacted by the increase in stock based compensation in Q1 2018 together with decreased cash inflow associated with changes in non-cash working capital compared to the year ended December 31, 2017. The cash inflow associated with non-cash working capital for the year ended December 31, 2017 is the consequence of increased trade and other creditors in relation to TPDC payable and deferred revenue.

The increase in adjusted funds flow from operations over the three years reflects the increase in deliveries and revenue. The increase of 15% in adjusted funds flow from operations in 2018 compared to 2017 was also impacted by lower general and administration expenses and an increase in interest income on bonds.

Total non-current liabilities did not change significantly between the years. The decrease of $1.7 million in 2019 compared to 2018 was primarily due to the repayment of a portion of the long-term loan.

Total assets increased throughout the three-year period, primarily because of increased collections from TANESCO increasing cash and investment balances.

Non-GAAP Measures

The Company evaluates its performance using a number of non-GAAP (generally accepted accounting principles) measures. These non-GAAP measures are not standardized and therefore may not be comparable to similar measurements of other entities.

- Adjusted funds flow from operations represents net cash flows from operating activities less interest expense and before changes in non-cash working capital. This is a performance measure that management believes represents the Company's ability to generate sufficient cash flow to fund capital expenditures and/or service debt.

	Three Months ended December 31		Year ended December 31	
$'000	2019	2018	2019	2018
Net cash flows from operating activities	**5,156**	4,085	**34,873**	28,752
Interest expense	**(1,645)**	(1,933)	**(8,279)**	(10,994)
Finance income – TANESCO arrears	**(7,546)**	(1,359)	**(11,044)**	(16,227)
Changes in non-cash working capital	**17,595**	5,605	**27,663**	17,724
Adjusted funds flow from operations	**13,560**	6,398	**43,213**	19,255

- Operating netbacks represent the profit margin associated with the production and sale of Additional Gas and is calculated as revenues less processing and transportation tariffs, TPDC's revenue share, operating and distribution costs per one thousand standard cubic feet of Additional Gas. This is a key measure as it demonstrates the profit generated from each unit of production.
- Adjusted funds flow from operations per share is calculated on the basis of the adjusted funds flow from operations divided by the weighted average number of shares, similar to the calculation of earnings per share.
- Net cash flows from operating activities per share is calculated as net cash flows from operating activities divided by the weighted average number of shares, similar to the calculation of earnings per share.

Use of Estimates and Judgments

The preparation of consolidated financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. The reader is referred to Orca's December 31, 2019 audited consolidated financial statements for a description of estimates and judgments.

Business Risks

Industry and Business Conditions

Competition and operational risk

The oil and gas industry is intensely competitive and the Company competes with other companies which possess greater technical and financial resources. Oil and gas drilling and production operations are subject to all the risks typically associated with such operations, including but not limited to risks of fires, blowouts, spills, cratering and explosions, mechanical and equipment problems, uncontrolled flows or leaks of oil, well fluids, natural gas, brine, toxic gas or other pollutants or hazardous materials, marine hazards with respect to offshore operations, formations with abnormal pressures, adverse weather conditions, natural or man-made disasters, premature decline of reservoirs and invasion of water into producing formations.

Drilling wells is speculative and involves significant costs that may be more than estimated and may not result in any discoveries or additions to our future production or reserves. Operational activities have numerous inherent risks and our license area is located on an island, 25 km offshore mainland Tanzania, and partially in shallow water. This generally increases the operating costs, chances of delay, planning time, technical challenges and risks associated with production activities. Our inability to access appropriate equipment and infrastructure in a timely manner may hinder our access to oil and natural gas markets or delay our oil and natural gas production.

The development of oil and natural gas projects, including the availability and cost of drilling rigs, equipment, supplies, personnel and oilfield services, is subject to delays and cost overruns. The Company may be affected by the inability to respond to changing technological developments and remain competitive. Slower economic growth rates may materially adversely impact our operating results and financial position. Any material inaccuracies in drilling costs, estimates or underlying assumptions will materially affect our business.

Key staff

Our performance and success are largely dependent on the ability, expertise, judgment and discretion of our management and the ability of our technical team to identify, discover, evaluate and develop reserves. We are dependent on members of our management and technical team that may not be easily replaced. The Company does not maintain any key life insurance on any of its employees or officers.

Environmental regulation

The oil and natural gas industry is subject to varying environmental regulations in each of the jurisdictions in which the Company may operate. Environmental regulations place restrictions and prohibitions on emissions of various substances produced concurrently and oil and natural gas and can impact on the selection of drilling sites and facility locations, potentially resulting in increased capital expenditures.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Business Risks continued

Contractual

We operate in a litigious environment which could result in title or contractual disputes during the ordinary course of business. The inability of one or more third parties who contract with us to meet their obligations to us may adversely affect our financial results.

Marketability and pricing

The marketability and price of natural gas which may be acquired, discovered or marketed by the Company will be affected by numerous factors beyond its control. The natural gas market in Tanzania is developing and there is currently limited access to infrastructure with which to serve potential new markets beyond that being constructed by the Company, Songas and TPDC, which now includes the NNGI. The ability of the Company to market any natural gas from current or future reserves in Tanzania may depend upon its ability to develop natural gas markets in Tanzania and the surrounding region, obtain access to the necessary infrastructure to process gas and to deliver sales gas volumes, including acquiring capacity on pipelines which deliver natural gas to commercial markets. The Company is also subject to market fluctuations in the prices of natural gas, uncertainties related to the delivery and proximity of its reserves to pipelines and processing facilities and extensive government regulation relating to prices, taxes, royalties, land tenure, allowable production, the export of oil and gas and many other aspects of the oil and gas business.

The prices that the Company receives for its natural gas affect the Company's revenue, profitability, access to capital and future growth rate. Historically, the oil and natural gas markets have been volatile and will likely continue to be volatile in the future. Oil prices have experienced significant and sustained declines in the past few years and may continue to be volatile in the future; though gas prices are less volatile, they may also be significantly affected in the longer run.

The natural gas prices the Company receives from its industrial customers fluctuate with the price of heavy fuel oil against which most of the Company's industrial customer contracts are priced. Prices can also be affected by gas on gas competition from other producers in Tanzania. There have been significant onshore and offshore discoveries of gas in the last ten years and it is expected that the development of these discoveries will increase competition in the future. There is also scope for greater government intervention on gas prices as TPDC owns and operates the majority of the gas processing and pipeline infrastructure.

A substantial or extended decline in both global and local oil and natural gas prices may adversely affect our business, financial condition and results of operations. Localized competition with other gas producers and alternative power sources such as hydro power could adversely impact our financial results.

Cyber attack

The oil and gas industry has become increasingly dependent on digital technologies to conduct day-to-day operations including certain exploration, development and production activities. For example, software programs are used to interpret seismic data, manage drilling rigs, conduct reservoir modeling and reserves estimation, and to process and record financial and operating data. A cyber incident could result in information theft, data corruption, operational disruption, and/or financial loss. There can be no assurance that we will not be the target of cyber-attacks in the future or suffer such losses related to any cyber-incident.

Financial

Cost of capital

Our business plan requires substantial additional capital that we may be unable to fund out of working capital and cash flow generated from operations or raise on acceptable terms or at all in the future and which may in turn limit our ability to develop our appraisal, development and production activities. The Company's ability to meet its financing obligations or to arrange financing in the future will depend in part upon the prevailing capital market conditions as well as the Company's business performance. There can be no assurance that the Company would be successful in its efforts to meet its current commitments or arrange additional financing on terms satisfactory to the Company.

Collectability of receivables

The Company evaluates the collectability of its receivables on the basis of payment history, frequency and predictability, as well as Management's assessment of the customer's willingness and ability to pay. In the past, the Company has recorded allowances for receivables that did not meet the criteria for revenue recognition however no allowances have been recorded for the past two years.

Foreign exchange

The Company operates internationally and is exposed to foreign exchange risk arising from currency fluctuations against the US dollar when transactions and recognized assets and liabilities of the Company are denominated in a currency that is not the US dollar functional currency. The main currencies to which the Company has an exposure are Tanzanian shillings, British pounds sterling, Euros and Canadian dollars.

The majority of the expenditure associated with the operation of the gas distribution system is denominated in Tanzanian shillings. Whilst conversion of Tanzanian shillings into US dollars is unrestricted, the foreign exchange market for Tanzanian shillings is limited and not highly liquid, reducing the Company's ability to convert large amounts of Tanzanian shillings into US dollars at any given time. To mitigate the risk of Tanzanian shilling devaluation, the Company regularly converts Tanzanian shilling receipts into US dollars to the extent practicable. Capital stock, equity financing and any associated stock based compensation are denominated in Canadian dollars. The operational revenue and the majority of capital expenditures are denominated in US dollars.

Fluctuations in currency exchange rates could adversely impact the Company's financial results.

Debt financing

From time to time the Company may enter into transactions to acquire assets or the shares of other companies. These transactions may be financed partially or wholly with debt, which may temporarily increase the Company's debt levels above industry standards. The Company currently has a long-term loan that includes covenants that, among other things, restrict the incurrence of additional indebtedness, payment of dividends under certain conditions, granting of liens, mergers and sale of all or a substantial part of our business or license.

Business Risks continued

Foreign operations and concentration risk

Asset concentration

The Company's natural gas reserves are currently limited to one producing property, the Songo Songo field, and the productive potential from this field is limited. There is no assurance that the Company will have sufficient deliverability through the existing wells to provide Protected and Additional Gas volumes, and there may be significant capital expenditures associated with any remedial work, workovers, or new drilling required to achieve deliverability. In addition, any difficulties relating to the operation or performance of the field would have a material adverse effect on the Company. A loss or material reduction in production capabilities will have a material adverse effect on the total production and funds flow from operating activities of the Company.

Access to infrastructure

The Company is dependent upon access to the Songas Infrastructure and the Government owned NNGI to deliver gas to customers. The Company operates the Songas Infrastructure however Songas is the owner of the facilities including the 12-inch subsea and the 16-inch surface pipeline systems which transport natural gas from Songo Songo to Dar es Salaam. There are agreements in place to allow the Company to process and transport gas, but there is no assurance that these rights could not be challenged or access curtailed. The inability to access infrastructure would materially impair the Company's ability to realize revenue from natural gas sales.

Reputational

Our Tanzanian operations are anticipated to be our sole source of our near-term revenue earnings. Due to our asset concentration, the success of our operations is dependent on positive commercial relationships with a small number of organizations (including states and parastatal organizations) and certainty with respect to our rights and obligations arising from those relationships. Any damage to our reputation due to the actual or perceived occurrence of any number of events, such as environmental incidents, could negatively impact us. Reputation loss may result in negative publicity and diminished or adversarial stakeholder relationships, which could lead to increased challenges in developing and maintaining community relations, decreased investor confidence, and would likely impede our overall ability to advance our projects, thereby having a material adverse impact on financial performance, cash flows and growth prospects.

Country and COVID-19 risk

The geographic location of the license exposes us to an increased risk of loss of revenue or curtailment of production as a result of factors generally associated with foreign operations or arising from factors specifically affecting the area in which we operate or may operate. Tanzania may be considered to be politically and/or economically unstable. Development and operational activities in Tanzania may require protracted negotiations with host governments, national oil companies and third parties and are frequently subject to economic and political considerations, such as, the risks of war, actions by terrorist or insurgent groups, expropriation, nationalization, creeping nationalization, renegotiation or nullification of existing contracts and production sharing agreements, taxation policies, foreign exchange restrictions, changing political conditions, international monetary fluctuations, currency controls and foreign governmental regulations that favor or require the awarding of drilling and construction contracts to local contractors or require foreign contractors to employ citizens of, or purchase supplies from, a particular jurisdiction. In addition, if a dispute arises with foreign operations, the Company may be subject to the exclusive jurisdiction of foreign courts.

Countries in Africa are susceptible to outbreaks of disease and may lack the resources to effectively contain such an outbreak quickly. Such outbreaks may impact our ability to explore for oil and gas, develop or produce our license areas by limiting access to qualified personnel, increasing costs associated with ensuring the safety and health of our personnel, restricting transportation of personnel, equipment, supplies and oil and gas production to and from our areas of operation and diverting the time, attention and resources of government agencies which are necessary to conduct our operations. In addition, any losses we experience as a result of such outbreaks of disease which impact sales or delay production may not be covered by our insurance policies. If travel bans are implemented or extended to the countries in which we operate, or contractors or personnel refuse to travel there, we could be adversely affected. If services are obtained, costs associated with those services could be significantly higher than planned which could have a material adverse effect on our business, results of operations, and future cash flow.

Since December 31, 2019 the Company's business, operations and financial condition have not been significantly adversely affected by COVID-19. There has been a small decline in industrial customer demand for gas however further spread of COVID-19 could result in volatility and disruptions in regular business operations, supply chains and financial markets, as well as declining trade and market sentiment. COVID-19 as well as other factors have resulted in the deepest drop in crude oil prices that global markets have seen since 1991. The recent events and conditions have caused a significant decrease in the valuation of oil and natural gas companies and a decrease in confidence in the oil and natural gas industry. Although the Company's production and reserves are entirely comprised of gas, COVID-19 poses a risk on the financial capacity of the Company's contract counterparties and potentially their ability to perform contractual obligations and the Company's ability to implement planned capital projects. A prolonged decline in world oil prices could impact the competitiveness and demand for gas in Tanzania and negatively impact Company revenues, collectability of receivables and cash flow.

In Tanzania the state retains ownership of its minerals and consequently retains control of the exploration and production of hydrocarbon reserves. The GoT has historically been supportive of foreign investment in resource development projects in Tanzania however it has recently adopted a more conservative approach toward foreign involvement in the extractive sector, including the production, transmission, processing and marketing of natural gas. Factors such as changes in government, an increased nationalist sentiment and pressure to preserve development opportunities for local enterprises can result in legal and regulatory changes that can impact our ability to maintain our business operations.

Corruption

Tanzania ranks 96 out of 180 on the 2019 Transparency International Corruption Index (2018: 99 out of 180). Having assessed the Company's exposure to corruption in Tanzania, it has been concluded that the risk of the Company and/or its subsidiaries violating applicable laws prohibiting corrupt activities are mitigated or unlikely given the Company's controls relating to such risks and their effective operation. There is exposure to liabilities under anti-money laundering and/or anti-corruption laws, and any determination that we violated such laws could have a material adverse effect on our business. There can be no assurance that corruption may not indirectly affect or otherwise impair the Company's ability to operate in Tanzania and effectively pursue its business plan in that country.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Business Risks continued

Contractual, regulatory and legislation risk

Contracts and regulations

The Company's operations are subject to regulation and control by the GoT (see "Principal Terms of the PSA and Related Agreements"). The Company has operated in Tanzania for a number of years and believes that it has had reasonably good relations with the current GoT. Under the principal agreements the Company has the right to market and sell Additional Gas provided that such sales do not jeopardize the priority right of Songas to sell or otherwise dispose of Protected Gas. There is a risk that Songas could exercise its contractual rights, which may curtail our ability to sell Additional Gas if there is insufficient natural gas available for the required volumes of Protected Gas. There can be no assurance that present or future administrations in Tanzania will honor all principal agreements which could materially adversely affect the operations or future cash flows of the Company.

PSA operations are regulated by national and parastatal organizations including the energy regulators (PURA and EWURA), and TPDC. Under our Gas Agreement ("GA") with the GoT, TPDC and Songas, the Company has the right to market and sell Additional Gas. The Amended and Restated Gas Agreement ("ARGA") provided clarification of the Protected Gas volumes and removes all terms dealing with the security of the Protected Gas. The ARGA was initialed by all parties but remains unsigned as at the date of this report. In certain respects, the parties thereto are conducting themselves as though the ARGA is in effect. In 2017 the Additional Gas Plan 2 ("AGP2") was signed further delineating the rights of the Company to market and sell Additional Gas. If our relationships with these counterparties were to deteriorate, then they might choose to exercise their contractual rights under our agreements differently and in a manner that is adverse to our interests. Management does not foresee a material risk with the conduct of the Company's business with an unsigned ARGA at this time.

We have had, and continue to have, disagreements with TPDC regarding certain of our rights and responsibilities under the PSA. Pursuant to the PSA, the Company plans for development and annual work programs must be submitted to TPDC for comment. We have previously had, and continue to have, disagreements with TPDC and the GoT regarding certain of our rights and responsibilities under the PSA. There are also disagreements over our ability to market and sell gas to end-users and TPDC has challenged our rights to cost recover a number of items under the PSA including the costs of our downstream operations; however, there are currently no disagreements that have risen to the level of a formal dispute.

There can be no assurance that all of these disagreements will be resolved in our favor or that future disagreements will not arise in Tanzania or with any host government and/or national oil companies in future projects elsewhere that may have a material adverse effect on our exploration or development activities, our ability to operate, our rights under our licenses and local laws or our rights to monetize our interests.

Legislation

The GoT has passed several new laws in the past few years impacting the Company's operation in Tanzania.

The National Energy Policy (2015) and the Petroleum Act, passed in 2015 provided regulatory framework over upstream, mid-stream and downstream gas activity. The Petroleum Act created a new regulator to oversee the upstream sectors, PURA and conferred upon TPDC the status of National Oil Company as the sole aggregator of natural gas in the country. Under the Petroleum Act Article 260 (3) preserves the Company's pre-existing right with TPDC to market and sell Additional Gas together or independently on terms and conditions (including prices) negotiated with third party natural gas customers. There remain differences of opinion between the Company and TPDC on the effect of certain provisions within the Petroleum Act and their application to the Company.

On October 7, 2016, the GoT issued the Petroleum (Natural Gas Pricing) Regulation made under Sections 165 and 258(l) of the Petroleum Act which may give rise to additional uncertainty. These changes could impact our ability to set gas pricing and the introduction of regulated gas pricing could result in operations becoming uneconomical and anticipated revenues could be materially affected. While the PSA has been grandfathered under the Petroleum Act, we can provide no assurances that this situation will remain unchanged in the future.

On July 15, 2017 the GoT passed into law the Natural Wealth and Resources (Permanent Sovereignty) Act, 2017, the Written Laws (Miscellaneous Amendments) Act, 2017, and the Natural Wealth and Resources Contracts (Review and Re-Negotiation of Unconscionable Terms) Act, 2017. The first and second of these acts are forward looking and only apply to agreements entered into on or after July 15, 2017. The GoT may argue that the third of these Acts has retrospective effect in terms of its ability to renegotiate pre-existing contracts. On January 31, 2020 the Government released the Natural Wealth and Resources Contracts (Review and Renegotiation of Unconscionable Terms) Regulations, 2020 which set out further guidance as to how contracts may be renegotiated. These acts contain new regulations including but not limited to regulations that all arbitration processes must be heard within Tanzania and restrict the ability to move funds out of Tanzania.

In 2016, the TRA introduced significant changes to the income tax treatment of the extractive sector with separate new chapters in Part V of the Income Tax Act 2004 ("ITA, 2004") for mining and for petroleum to be effective commencing in 2018. Subsequent to this, further changes were made by the Written Laws (Miscellaneous Amendments) Act, 2017 ("WLMAA, 2017") to exclude cost oil/cost gas from inclusion in both income and expenditure. We are still evaluating the tax effects of the changes as there are a number of uncertainties and ambiguities as to the interpretation and application of certain provisions of the WLMAA, 2017 as there is an absence of regulations and guidance from TRA on the implementation of the changes. In the absence of guidance on these matters, we will continue to use what we believe are reasonable interpretations and assumptions in applying the WLMAA, 2017 for purposes of determining our tax liabilities and filing our tax returns, which interpretations and assumptions may change as we receive additional clarification and implementation guidance. As necessary, we will seek adjustments to the PSA to preserve our economic benefits. In addition, the Natural Wealth and Resources (Permanent Sovereignty) Act, 2017 (the "Permanent Sovereignty Act 2017") and the WLMAA 2017 restrict the ability of companies to repatriate funds out of Tanzania and it is possible that the GoT will seek to argue at some stage that these provisions apply to the Company even though our contracts with the GoT permit this.

Intervening policy and legislative changes such as those described above may conflict with our pre-existing rights under the PSA and other agreements, though it remains unclear how such legislative actions will be implemented and whether and to what extent they will impact us. We are unable to predict what legislation may be proposed that might affect our business or when any such proposals, if enacted, might become effective. Such changes could require increased capital and operating expenditure and could prevent or delay certain of our operations. If, for reasons beyond our control, we are unable to maintain compliance with any legislative changes, whether in the future or past, we may have to cease operations in certain locations.

Principal Terms of the PSA and Related Agreements

The principal terms of the PSA and related agreements are as follows:

Obligations and Restrictions

(a) The PSA covers two blocks within the Songo Songo Gas Field where there are gas reserves ("Discovery Blocks"). The Company has the right to conduct petroleum operations on the Discovery Blocks, market and sell all Additional Gas produced and share the net revenue with TPDC for a term of 25 years, expiring in October 2026.

(b) No sale of Additional Gas may be made from the Discovery Blocks if in the Company's reasonable judgment such sales would jeopardize the supply of Protected Gas. Any Additional Gas contracts entered into are subject to interruption. Songas has the right to request that the Company and TPDC obtain security reasonably acceptable to Songas prior to making any sales of Additional Gas from the Discovery Blocks to secure the Company's and TPDC's obligations in respect of Insufficiency (see (c) below).

(c) "Insufficiency" occurs if there is insufficient gas from the Discovery Blocks to supply the Protected Gas requirements or if the gas is so expensive to develop that its cost exceeds the market price of alternative fuels at Ubungo.

Where there have been third party sales of Additional Gas by the Company and TPDC from the Discovery Blocks prior to the occurrence of the Insufficiency, the Company and TPDC shall be jointly liable for the Insufficiency and shall satisfy their related liability by either replacing the Indemnified Volume (as defined in (d) below) at the Protected Gas price with natural gas from other sources; or by paying monetary damages equal to the difference between: (a) the market price for a quantity of alternative fuel that is appropriate for the five gas turbine electricity generators at Ubungo without significant modification together with the costs of any modification; and (b) the sum of the price for such volume of Protected Gas (at $0.55/MMbtu escalated) and the amount of transportation revenues previously credited by Songas to the state electricity utility, TANESCO, for the gas volumes.

(d) The "Indemnified Volume" means the lesser of the total volume of Additional Gas sales supplied from the Discovery Blocks prior to an Insufficiency and the Insufficiency Volume. "Insufficiency Volume" means the volume of natural gas determined by multiplying the average of the annual Protected Gas volumes for the three years prior to the Insufficiency by 110% and multiplied by the number of remaining years (initial term of 20 years) of the power purchase agreement entered into between Songas and TANESCO in relation to the five gas turbine electricity generators at Ubungo from the date of the Insufficiency.

Access and Development of Infrastructure

(e) The Company is able to utilize the Songas infrastructure including the gas processing plant and main pipeline to Dar es Salaam. Access to the Songas infrastructure is open and can be utilized by any third party that wishes to process or transport gas.

Revenue Sharing Terms and Taxation

(f) 75% of the gross field revenues derived from the Discovery Blocks, less processing and pipeline tariffs and direct sales taxes in any year ("field net revenue"), can be used to recover past costs incurred. Costs recovered out of field net revenue are termed "Cost Gas".

The Company pays and recovers costs of exploring, developing and operating the Additional Gas with two exceptions: (i) TPDC may recover reasonable market and market research costs as defined under the PSA; and (ii) TPDC has the right to elect to participate in the drilling of at least one well for Additional Gas in the Discovery Blocks for which there is a development program as detailed in an Additional Gas plan ("Additional Gas Plan") as submitted to the MoE, subject to TPDC being able to elect to participate in a development program only once and TPDC having to pay a proportion of the costs of such development program by committing to pay between 5% and 20% of the total costs ("Specified Proportion"). If TPDC does not notify the Company within 90 days of notice from the Company that the MoE has approved the Additional Gas Plan, then TPDC is deemed not to have elected to participate. If TPDC elects to participate, then it will be entitled to a ratable proportion of the Cost Gas and their profit share percentage increases by the Specified Proportion for that development program.

To date, TPDC has neither elected to back in within the prescribed notice period nor contributed any costs associated with backing in. The Company has therefore determined that to date there has been no working interest earned by TPDC. For the purpose of the reserves certification as at December 31, 2018, there are no planned drilling activities to the end of the license.

(g) The Company's long-term gas price to the Power sector as set out in the Amended and Restated Gas Agreement ("ARGA") between the GoT, TPDC and Songas and the PGSA is based on the price of gas at the wellhead. As at the date of this report, the ARGA remains an initialed agreement only and the parties are not in agreement with all the terms in the ARGA, however the parties are conducting themselves in terms of pricing as though the ARGA is in force.

In 2011 the Company signed a re-rating agreement with TANESCO, TPDC and Songas (the "Re-Rating Agreement") which evidenced an increase to the gas processing capacity of the Songas Plant to a maximum of 110 MMcfd (the pipeline and pressure requirements at the Ubungo power plant restrict the infrastructure capacity to a maximum of 102 MMcfd). Under the terms of the Re-Rating Agreement, the Company paid additional compensation of $0.30/mcf for sales between 70 MMcfd and 90 MMcfd and $0.40/mcf for volumes above 90 MMcfd by issuing credit notes to TANESCO. This was in addition to the tariff of $0.59/mcf payable to Songas as set by the energy regulator, Energy and Water Regulatory Authority ("EWURA"). Songas terminated the Re-Rating Agreement in 2014 although there remains a disagreement as to its current status.

In May 2016 the Company notified TANESCO and Songas that the additional compensation for sales over 70 MMcfd would no longer be paid effective June 2016. The additional compensation was always intended to be temporary in nature until the expansion of the Songas Infrastructure, at which time Songas would apply to EWURA to obtain approval of a new tariff for the processing of volumes over 70 MMcfd. The processing capacity at the Songas Infrastructure remains unaltered and is fully available for the Company's utilization along with the additional capacity within the NNGI which includes two gas processing facilities and pipelines supplying gas from the Mtwara Region of Tanzania and Songo Songo Island to Dar es Salaam. The PGSA provides for passing on to TANESCO any tariff to be charged to the Company in the event that a new tariff is approved.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Principal Terms of the PSA and Related Agreements continued

Revenue Sharing Terms and Taxation continued

In Q3 2017 the Company received approval of the Additional Gas Plan 2 ("AGP2") from the MoE to produce and sell increased volumes of Additional Gas. Currently wells SS-11 and SS-12 are connected to the NNGI and the SS-12 well started flowing gas through the NNGI in December 2018. In May 2019 the Company and TPDC signed the LTGSA, initially for volumes up to 20MMcfd which was increased subsequently to 30MMcfd on a best endeavors basis.

(h) Profits on sales from the Proven Section ("Profit Gas") are shared between TPDC and the Company, the proportion of which is dependent on the average daily volumes of Additional Gas sold or cumulative production.

The Company receives a higher share of the field net revenue after cost recovery, based on the higher of the cumulative production or the average daily sales. The Profit Gas share available to the Company is a minimum of 25% and a maximum of 55%.

Average daily sales of Additional Gas MMcfd	Cumulative sales of Additional Gas Bcf	TPDC's share of Profit Gas %	Company's share of Profit Gas %
0 – 20	0 – 125	75	25
> 20 <= 30	> 125 <= 250	70	30
> 30 <= 40	> 250 <= 375	65	35
> 40 <= 50	> 375 <= 500	60	40
> 50	> 500	45	55

For Additional Gas produced outside of the Proven Section, the Company's Profit Gas share is 55%.

Where TPDC elects to participate in a development program, its profit share percentage increases by the Specified Proportion (for that development program) with a corresponding decrease in the Company's percentage share of Profit Gas.

The Company is liable for income tax in Tanzania. Where income tax is payable, the Company pays the tax and there is a corresponding deduction in the amount of the Profit Gas payable to TPDC.

(i) "Additional Profits Tax" (or "APT") is payable when the Company recovers its costs out of Additional Gas revenues plus an annual operating return under the PSA of 25%, plus the percentage change in the United States Industrial Goods Producer Price Index ("PPI"). The maximum APT rate is 55% of the Company's Profit Gas when costs have been recovered with an annual return of 35% plus PPI return. The PSA is, therefore, structured to encourage the Company to develop the market and the gas fields in the knowledge that the Profit Gas share can increase with larger daily gas sales and that the costs will be recovered with a 25% plus PPI annual return before APT becomes payable. APT can have a significant negative impact on project economics if only limited capital expenditure is incurred.

(j) The Company is appointed to develop, produce and process Protected Gas and operate and maintain the Songas Infrastructure, including the staffing, procurement, capital improvements, contract maintenance, maintenance of books and records, preparation of reports, maintenance of permits, waste handling, liaison with the GoT and taking all necessary safety, health and environmental precautions, all in accordance with good oilfield practices. In return, the Company is paid or reimbursed by Songas so that it neither benefits nor suffers a loss as a result of its performance.

(k) In the event of loss arising from Songas' failure to perform, and the loss is not fully compensated by Songas or through insurance coverage, then the Company is liable to a performance and operational guarantee of $2.5 million when (i) the loss is caused by the gross negligence or willful misconduct of the Company, its subsidiaries or employees, and (ii) Songas has insufficient funds to cure the loss and operate the project.

Protected Gas

Under the terms of the Gas Agreement for the Songo Songo project ("Gas Agreement"), in the event that there is a shortfall/insufficiency in Protected Gas as a consequence of the sale of Additional Gas, the Company is liable to pay the difference between the price of Protected Gas ($0.55/MMbtu escalated) and the price of an alternative feedstock multiplied by the volumes of Protected Gas up to a maximum of the volume of Additional Gas sold (214 Bcf as at December 31, 2019). The Company did not have a shortfall during the reporting period and does not anticipate a shortfall arising during the term of the Protected Gas delivery obligation to July 2024.

Principal Terms of the PSA and Related Agreements continued

Re-Rating Agreement

In 2011 the Company, TPDC and Songas signed a Re-Rating Agreement which evidenced an increase to the gas processing capacity of the Songas Infrastructure to a maximum of 110 MMcfd (the pipeline and delivery pressure requirements at the Ubungo power plant restrict the infrastructure capacity to a maximum of 102 MMcfd). Under the terms of the Re-Rating Agreement, the Company paid additional compensation of $0.30/mcf for sales between 70 MMcfd and 90 MMcfd and $0.40/mcf for volumes above 90 MMcfd by issuing credit notes to TANESCO. This was in addition to the tariff of $0.59/mcf payable to Songas as set by the energy regulator, EWURA.

Although Songas notified the Company in 2014 that the Re-Rating Agreement was terminated, the parties have continued to produce, transport and sell gas volumes in line with the re-rated plant capacity. In May 2016 the Company notified TANESCO and Songas that the additional compensation for sales over 70 MMcfd would no longer be paid effective June 2016. The additional compensation was always intended to be temporary in nature until the expansion of the Songas Infrastructure, at which time Songas would apply to EWURA to obtain approval of a new tariff for the processing of volumes over 70 MMcfd. The PGSA provides for passing on to TANESCO any tariff charged to the Company should a new tariff be approved.

The parties to the Re-Rating Agreement are in the process of negotiating a replacement agreement which may address the additional compensation paid through the establishment of an approved tariff from EWURA. In the interim, the processing capacity at the Songas Infrastructure remains unaltered and is fully available for utilization by the Company. This capacity is in addition to the capacity available within the NNGI.

Portfolio Gas Supply Agreement

In June 2011 the PGSA was signed (term to June 30, 2023) between TANESCO (as the buyer) and the Company and TPDC (collectively as the seller). TANESCO requested a change to the PGSA Maximum Daily Quantity which PAET and TPDC approved effective January 29, 2018. The seller is now obligated, subject to infrastructure capacity, to sell a maximum of approximately 26 MMcfd (previously 36 MMcfd) for use in any of TANESCO's current power plants, except those operated by Songas at Ubungo. Under the agreement, the basic wellhead price of approximately $2.98/mcf increased to $3.04/mcf on July 1, 2018 and to $3.10/mcf on July 1, 2019. Previously under the PGSA any sales in excess of 36 MMcfd were subject to a 150% increase in the basic wellhead gas price. On December 22, 2018 a side letter amendment to the PGSA was agreed with TPDC and TANESCO to allow PGSA volumes up to a maximum monthly average volume of 35 MMcfd to temporarily flow through the NNGI. The temporary arrangement was terminated in September 2019 once the refrigeration unit became fully operational and all PGSA volumes were again processed through the Songas Infrastructure.

Long-term Gas Sales Agreement

On May 14, 2019 the Company and TPDC signed the LTGSA for an initial delivery of 20 MMcfd through the NNGI, at a price of $3.10/MMbtu as at January 1, 2019, (escalating 2% per annum) exclusive of any processing and transportation tariff associated with the NNGI. The LTGSA was amended on September 24, 2019 to increase the volumes supplied through the NNGI up to a maximum daily quantity of 30 MMcfd. All volumes above 20 MMcfd are supplied on a best endeavors basis until compression facilities are added to the Songas Infrastructure.

TPDC Back-in

TPDC has the rights under the PSA to 'back in' to the Songo Songo field development and to convert this into a carried working interest in the PSA. The current terms of the PSA require TPDC to provide formal notice in a defined period and contribute a proportion of the costs of any development, sharing in the risks in return for an additional share of the gas. To date, TPDC has not contributed any costs nor provided any formal notice of intent to do so.

Forward-Looking Statements

This MD&A contains forward-looking statements or information (collectively, "forward-looking statements") within the meaning of applicable securities legislation. More particularly, this MD&A contains, without limitation, forward-looking statements pertaining to the following: the Company's expectations regarding supply and demand of natural gas; anticipated power sector revenues; the Company's expectation that they will enter into an engineering procurement contract for installation of compression on the Songas Infrastructure; anticipated value of the engineering procurement contract for installation of compression on the Songas Infrastructure; the Company's expectation regarding completion of the installation of compression on the Songas Infrastructure; anticipated production volumes and expanded well deliverability through NNGI as a result of the installation of compression on the Songas Infrastructure; the expected effects of the completion of compression on the Songas Infrastructure; current and potential impact of TPDC future back-in rights on the economic terms of the PSA; current and potential production capacity of the Songa Songo field; ability to workover, recomplete and connect well SS-10 to the NNGI during 2020; the Company's expectation that all planned capital expenditures be funded out of existing working capital and cash flow generated by current operations; the Company's expectation that it will not incur any losses from debtors; the Company's estimated spending for the planned Development Program, which includes well workovers and installing compression on the Songas facilities to ensure current levels of production are sustained beyond 2020; ability to meet all conditions under the IFC financing agreement; the Company's expectations in respect of its appeals on the decisions of the Tax Revenue Appeals Tribunal and other statements under "Contingencies – Taxation"; the potential impact of the National Energy Policy (2015), the Petroleum Act, and the recently enacted Natural Wealth and Resources (Permanent Sovereignty) Act, 2017, the Natural Wealth and Resources Contracts (Review and Re-Negotiation of Unconscionable Terms) Act, 2017 and the Written Laws (Miscellaneous Amendments) Act, 2017; the Company's belief that the parties to the unsigned ARGA will continue to conduct themselves in accordance with the ARGA until a new gas sales agreement is signed; the Company's expectation that despite the Re-Rating Agreement of the gas processing plant owned by Songas having expired, the Songas gas processing plant production volumes will not be restricted; the anticipated effect of the Second AGP2 signed in 2017 on the Company's available volumes of Additional Gas for sale; additional Songo Songo field developments contemplated in connection with AGP2; the current and potential production capacity of the Songo Songo field; the Company's ability to access new markets; the Company's ability to produce additional volumes; the Company's ability to access additional processing and transportation capacity; the status of ongoing negotiations with TPDC; the potential increase in sales volumes associated with new gas sales agreements; the Company's ability to locate and bring online additional supply in the future; the Company's expectation that it can expand and maintain the deliverability of gas volumes in excess of the existing Songas Infrastructure; the Company's expectation that it will not have a shortfall during the term of the Protected Gas delivery obligation to July 2024; and the expectation that the IASB pronouncements will not have any impact on the Company's consolidated financial statements. In addition, statements relating to "reserves" are by their nature forward-looking statements, as they involve the implied assessment, based on certain estimates and assumptions that the reserves described can be produced profitably in the future.

MANAGEMENT'S DISCUSSION & ANALYSIS CONTINUED

Forward-Looking Statements continued

The recovery and reserve estimates of the Company's reserves provided herein are estimates only and there is no guarantee that the estimated reserves will be recovered. As a consequence, actual results may differ materially from those anticipated in the forward-looking statements. Although management believes that the expectations reflected in the forward-looking statements are reasonable, it cannot guarantee future results, levels of activity, access to resources and infrastructure, performance or achievement since such expectations are inherently subject to significant business, economic, operational, competitive, political and social uncertainties and contingencies.

These forward-looking statements involve substantial known and unknown risks and uncertainties, certain of which are beyond the Company's control, and many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking statements made by the Company, including, but not limited to: failure to receive payments from TANESCO; risk that the potential financing solutions to resolve the TANESCO arrears are not implemented by the Tanzanian Government; risk that the Development Program is not completed as planned and the actual cost to complete the Development Program exceeds the Company's estimates; risk that the remaining well workovers under the Development Program are unsuccessful or determined to be unfeasible; risk of a lack of access to Songas processing and transportation facilities; risk that the Company may be unable to complete additional field development to support the Songo Songo production profile through the life of the license; risk that the Company may be unable to develop additional supply or increase production values; risks associated with the Company's ability to complete sales of Additional Gas; potential negative effect on the Company's rights under the PSA and other agreements relating to its business in Tanzania as a result of the recently approved Petroleum Act and recently enacted legislation, as well as the risk that such legislation will create additional costs and time connected with the Company's business in Tanzania; risks regarding the uncertainty around evolution of Tanzanian legislation; risk that the Company will not be successful in appealing claims made by the TRA and may be required to pay additional taxes and penalties; the impact of general economic conditions in the areas in which the Company operates; civil unrest; the susceptibility of the areas in which the Company operates to outbreaks of disease; industry conditions; changes in laws and regulations including the adoption of new environmental laws and regulations, impact of new local content regulations and variances in how they are interpreted and enforced; increased competition; the lack of availability of qualified personnel or management; fluctuations in commodity prices, foreign exchange or interest rates; stock market volatility; competition for, among other things, capital, drilling equipment and skilled personnel; failure to obtain required equipment for drilling; delays in drilling plans; failure to obtain expected results from drilling of wells; effect of changes to the PSA on the Company as a result of the implementation of the new Government policies for the oil and gas industry; changes in laws; imprecision in reserve estimates; the production and growth potential of the Company's assets; obtaining required approvals of regulatory authorities; risks associated with negotiating with foreign governments; inability to satisfy debt obligations and conditions; failure to successfully negotiate agreements; and risk that the Company will not be able to fulfill its contractual obligations. In addition, there are risks and uncertainties associated with oil and gas operations, therefore the Company's actual results, performance or achievement could differ materially from those expressed in, or implied by, these forward-looking statements and, accordingly, no assurances can be given that any of the events anticipated by these forward-looking statements will transpire or occur, or if any of them do so, what benefits the Company will derive therefrom. Readers are cautioned that the foregoing list of factors is not exhaustive.

Such forward-looking statements are based on certain assumptions made by the Company in light of its experience and perception of historical trends, current conditions and expected future developments, as well as other factors the Company believes are appropriate in the circumstances, including, but not limited to, that the Company will be able to negotiate Additional Gas sales contracts in relation to AGP2; the ability of the Company to complete additional developments and increase its production capacity; the actual costs to complete the Company's development program are in line with estimates; that there will continue to be no restrictions on the movement of cash from Mauritius or Tanzania; that the Company will have sufficient cash flow, debt or equity sources or other financial resources required to fund its capital and operating expenditures and requirements as needed; that the Company will successfully negotiate agreements; receipt of required regulatory approvals; the ability of the Company to increase production as required to meet demand; infrastructure capacity; commodity prices will not further deteriorate significantly; the ability of the Company to obtain equipment and services in a timely manner to carry out exploration, development and exploitation activities; future capital expenditures; availability of skilled labor; timing and amount of capital expenditures; uninterrupted access to infrastructure; the impact of increasing competition; conditions in general economic and financial markets; effects of regulation by Governmental agencies; that the Company's appeal of various tax assessments will be successful; that the enactment of the Petroleum Act and new legislation in Tanzania will not impair the Company's rights under the PSA to develop and market natural gas in Tanzania; current or, where applicable, proposed industry conditions, laws and regulations will continue in effect or as anticipated as described herein; and other matters.

The forward-looking statements contained in this MD&A are made as of the date hereof and the Company undertakes no obligation to update publicly or revise any forward-looking statements or information, whether as a result of new information, future events or otherwise, unless so required by applicable securities laws.

Additional Information

Additional information relating to the Company is available on SEDAR at www.sedar.com.

Glossary

mcf	Thousand standard cubic feet
MMcf	Million standard cubic feet
Bcf	Billion standard cubic feet
Tcf	Trillion standard cubic feet
MMcfd	Million standard cubic feet per day
MMbtu	Million British thermal units
1P	Proven reserves
2P	Proven and probable reserves
kWh	Kilowatt hour
MW	Megawatt
$	US dollars
CDN$	Canadian dollars

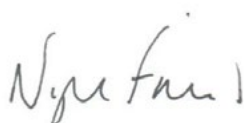
MANAGEMENT'S REPORT TO SHAREHOLDERS

The accompanying consolidated financial statements of Orca Exploration Group Inc. are the responsibility of Management. The financial and operating information presented in this annual report is consistent with that shown in the consolidated financial statements.

The consolidated financial statements have been prepared by Management, on behalf of the Board, in accordance with the accounting policies disclosed in the notes to the consolidated financial statements. Where necessary, management has made informed judgments and estimates in accounting for transactions which were not complete at the balance sheet date. In the opinion of management, the consolidated financial statements have been prepared within acceptable limits of materiality and are in accordance with International Financial Reporting Standards appropriate in the circumstances.

Management maintains appropriate systems of internal controls. Policies and procedures are designed to give reasonable assurance that transactions are properly authorised, assets are safeguarded and financial records are properly maintained to provide reliable information for the preparation of financial statements. An independent firm of Chartered Professional Accountants, as appointed by the Shareholders, audited the consolidated financial statements in accordance with the Canadian Generally Accepted Auditing Standards to enable them to express an opinion on the fairness of the consolidated financial statements in accordance with International Financial Reporting Standards.

The Board of Directors carries out its responsibility for the financial reporting and internal controls of the Company principally through an Audit Committee. The committee has met with the independent auditors and Management in order to determine if Management has fulfilled its responsibilities in the preparation of the consolidated financial statements. The consolidated financial statements have been approved by the Board of Directors on the recommendation of the Audit Committee.



Nigel Friend
Chief Executive Officer
April 28, 2020

Blaine E. Karst
Chief Financial Officer
April 28, 2020

INDEPENDENT AUDITORS' REPORT

To the Shareholders of Orca Exploration Group Inc.

Opinion

We have audited the consolidated financial statements of Orca Exploration Group Inc. (the "Company"), which comprise:

- the consolidated statements of financial position as at December 31, 2019 and December 31, 2018
- the consolidated statements of comprehensive income for the years then ended
- the consolidated statements of changes in shareholders' equity for the years then ended
- the consolidated statements of cash flows for the years then ended
- and notes to the consolidated financial statements, including a summary of significant accounting policies

(Hereinafter referred to as the "financial statements").

In our opinion, the accompanying financial statements present fairly, in all material respects, the consolidated financial position of the Company as at December 31, 2019 and December 31, 2018, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards ("IFRS").

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the "Auditors' Responsibilities for the Audit of the Financial Statements" section of our auditors' report.

We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada 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.

Other Information

Management is responsible for the other information. Other information comprises:

- the information included in Management's Discussion & Analysis filed with the relevant Canadian Securities Commissions.

Our opinion on the financial statements does not cover the other information and we do not and will 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 identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

We obtained the information included in Management's Discussion & Analysis filed with the relevant Canadian Securities Commissions as at the date of this auditors' report. If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditors' report.

We have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with IFRS, and for such internal control as management determines 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, management is 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 management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Company's financial reporting process.

INDEPENDENT AUDITORS' REPORT CONTINUED

Auditors' 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 auditors' 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 Canadian generally accepted auditing standards 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 the financial statements.

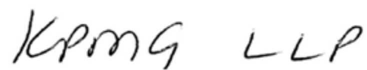
As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion.

  The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- 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.
- Provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

The engagement partner on the audit resulting in this auditors' report is John Waiand.



Chartered Professional Accountants
Calgary, Canada
April 28, 2020

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

		Years ended December 31	
$'000	Note	2019	2018
Revenue	6, 7	**85,595**	57,766
Production, distribution and transportation		**11,865**	12,378
Net production revenue		**73,730**	45,388
Operating expenses			
General and administrative		**14,397**	12,827
Stock based compensation	8,17	**2,455**	4,643
Depletion		**15,005**	9,495
Finance income	9	**(13,909)**	(19,136)
Finance expense	9	**9,866**	15,378
Income before tax		**45,916**	22,181
Income tax expense – current	10	**10,657**	4,588
Income tax expense – deferred	10	**2,326**	1,016
Additional Profits Tax	11	**6,587**	3,014
Net income		**26,346**	13,563
Net income attributable to non-controlling interest	24	**1,628**	293
Net income attributable to shareholders		**24,718**	13,270
Foreign currency translation gain (loss) from foreign operations		**38**	(83)
Comprehensive income		**24,756**	13,187
Net income attributable to shareholders per share *($)*			
Basic and diluted	18	**0.71**	0.38

See accompanying notes to the consolidated financial statements.

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

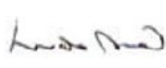
		As at December 31	
$'000	Note	2019	2018
ASSETS			
Current assets			
Cash and cash equivalents		**93,899**	64,660
Investment in short-term bonds	9	**44,756**	66,837
Trade and other receivables	12	**22,167**	15,862
Prepayments		**6,752**	1,217
		167,574	148,576
Non-current assets			
Long-term receivables	15	**2,250**	2,424
Investments	24	**3,967**	3,967
Capital assets	13	**97,981**	107,474
		104,198	113,865
Total Assets		**271,772**	262,441
EQUITY AND LIABILITIES			
Current liabilities			
Trade and other payables	14	**48,161**	59,634
Tax payable		**501**	–
Current portion of long-term loan	16	**–**	4,760
Current portion of Additional Profits Tax	11	**11,940**	–
		60,602	64,394
Non-current liabilities			
Deferred income taxes	10	**15,153**	12,828
Lease liabilities	13	**1,129**	–
Long-term loan	16	**54,057**	53,900
Additional Profits Tax	11	**32,264**	37,617
		102,603	104,345
Total Liabilities		**163,205**	168,739
SHAREHOLDERS' EQUITY			
Capital stock	17	**84,099**	86,508
Contributed surplus		**4,181**	6,319
Accumulated other comprehensive loss		**(210)**	(248)
Accumulated income		**20,334**	1,636
Non-controlling interest	24	**163**	(513)
		108,567	93,702
Total equity and liabilities		**271,772**	262,441

See accompanying notes to the consolidated financial statements.

Nature of Operations (Note 1); Contractual Obligations and Committed Capital Investment (Note 20); Contingencies (Note 21); Subsequent Events (Note 25).

The consolidated financial statements were approved by the Board on April 23, 2020.

Director



Director

CONSOLIDATED STATEMENTS OF CASH FLOWS

$'000	Note	Years ended December 31 2019	2018
OPERATING ACTIVITIES			
Net Income		**26,346**	13,563
Adjustment for:			
Depletion and depreciation	13	**15,329**	9,660
Indirect tax	9	**1,298**	3,689
Stock-based compensation expense	17	**2,455**	4,643
Deferred income taxes expense	10	**2,326**	1,016
Additional Profits Tax	11	**6,587**	3,014
Unrealized loss on foreign exchange		**(84)**	(103)
Interest expense	9	**8,279**	10,994
Change in non-cash operating working capital	23	**(27,663)**	(17,724)
Net cash flows from operating activities		**34,873**	28,752
INVESTING ACTIVITIES			
Capital expenditures	13	**(4,171)**	(5,843)
Change in non-cash working capital	23	**(114)**	792
Net cash used in investing activities		**(4,285)**	(5,051)
FINANCING ACTIVITIES			
Long-term loan repayment	16	**(4,760)**	–
Lease payments		**(254)**	–
Normal course issuer bid	17	**(4,547)**	–
Investment in bonds, net	9	**22,081**	(66,837)
Interest paid, net	9	**(6,164)**	(6,249)
Participation interest paid	9	**(2,267)**	(6,103)
Proceeds on sale of interest in a subsidiary	24	**–**	15,374
Dividends paid to shareholders	17	**(4,476)**	(16,866)
Dividends paid to non-controlling interest	24	**(952)**	(984)
Net cash used in financing activities		**(1,339)**	(81,665)
Increase (decrease) in cash		**29,249**	(57,964)
Cash and cash equivalents at the beginning of the year		**64,660**	122,322
Effect of change in foreign exchange on cash for the year		**(10)**	302
Cash and cash equivalents at the end of the year		**93,899**	64,660

See accompanying notes to the consolidated financial statements.

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

$'000	Capital stock	Contributed surplus	Accumulated other comprehensive loss	Accumulated income	Non-Controlling Interest	Total
Note	*17*			*17*	*24*	
Balance as at December 31, 2018	86,508	6,319	(248)	1,636	(513)	93,702
Share repurchase	(2,409)	(2,138)	–	–	–	(4,547)
Dividends declared	–	–	–	(6,020)	–	(6,020)
Foreign currency translation adjustment on foreign operations	–	–	38	–	–	38
Net income	–	–	–	24,718	1,628	26,346
Non-controlling interest dividend declared and paid	–	–	–	–	(952)	(952)
Balance as at December 31, 2019	**84,099**	**4,181**	**(210)**	**20,334**	**163**	**108,567**

$'000	Capital stock	Contributed surplus	Accumulated other comprehensive loss	Accumulated income	Non-Controlling Interest	Total
Note	*17*			*17*	*24*	
Balance as at December 31, 2017	86,508	6,319	(165)	(13,931)	–	78,731
Dividend declared and paid	–	–	–	(16,866)	–	(16,866)
Foreign currency translation adjustment on foreign operations	–	–	(83)	–	–	(83)
Net income	–	–	–	13,270	293	13,563
Gain on sale of interest in a subsidiary *(Note 24)*	–	–	–	19,163	–	19,163
Non-controlling interest recorded at date of acquisition	–	–	–	–	178	178
Non-controlling interest dividend declared and paid	–	–	–	–	(984)	(984)
Balance as at December 31, 2018	86,508	6,319	(248)	1,636	(513)	93,702

See accompanying notes to the consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

General Information

Orca Exploration Group Inc. was incorporated on April 28, 2004 under the laws of the British Virgin Islands with registered offices located at PO Box 146, Road Town, Tortola, British Virgin Islands, VG110. The Company produces and sells natural gas to the power and industrial sectors in Tanzania.

The consolidated financial statements of the Company as at and for the year ended December 31, 2019 comprise accounts of the Company and its subsidiaries (collectively, the "Company" or "Orca Exploration") and were authorised for issue in accordance with a resolution of the directors on April 23, 2020.

1. Nature of Operations

The Company's principal operating asset is an interest held by a subsidiary, PanAfrican Energy Tanzania Limited ("PAET") in a Production Sharing Agreement ("PSA") with the Tanzania Petroleum Development Corporation ("TPDC") and the Government of Tanzania ("GoT") in the United Republic of Tanzania. This PSA covers the production and marketing of certain gas from the Songo Songo Block offshore Tanzania.

The PSA defines gas in the Songo Songo field as "Protected Gas" and "Additional Gas". The "Protected Gas" is owned by TPDC and is sold under a 20-year gas agreement until July 2024 ("Gas Agreement") to Songas Limited ("Songas"). Songas is the owner of the infrastructure that enables the gas to be delivered to Dar es Salaam, which includes a gas processing plant on Songo Songo Island. The Company operates the gas processing plant and field on a 'no gain no loss' basis and receives no revenue for the Protected Gas delivered to Songas.

Under the PSA, the Company has the right to produce and market all gas in the Songo Songo Block in excess of the Protected Gas requirements ("Additional Gas").

The Tanzania Electricity Supply Company Limited ("TANESCO") is a parastatal organization wholly-owned by the Government of Tanzania, with oversight by the Ministry for Energy ("ME"), previously known as the Ministry of Energy and Minerals ("MEM"). TANESCO is responsible for the majority of electricity generation, transmission and distribution throughout Tanzania. The Company currently supplies Additional Gas directly to TANESCO by way of a Portfolio Gas Supply Agreement ("PGSA") and indirectly through the supply of Protected Gas and Additional Gas to Songas which in turn generates and sells power to TANESCO.

The Company recently began delivering gas to TPDC through a new long-term gas sales agreement ("LTGSA") to the TPDC operated National Natural Gas Infrastructure ("NNGI") on Songo Songo Island where the natural gas is processed before being transported to Dar es Salaam for power and industrial use.

In addition to gas supplied to Songas and TANESCO for the generation of power, the Company has developed and supplies an industrial gas market in the Dar es Salaam area.

2. Basis of Preparation

Statement of Compliance

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB"). Certain comparative period amounts have been reclassified to conform with the current period presentation.

Basis of Measurement

These consolidated financial statements have been prepared on a historical cost basis and have been prepared using the accrual basis of accounting. The consolidated financial statements are presented in US dollars ("$").

Basis of Consolidation

Subsidiaries

Subsidiaries are those enterprises controlled by the Company. The following companies have been consolidated within the Orca Exploration financial statements:

Subsidiary	Registered	Holding	Functional currency
Orca Exploration Group Inc.	British Virgin Islands	Parent Company	US dollar
Orca Exploration Italy Inc.[1]	British Virgin Islands	100%	Euro
Orca Exploration Italy Onshore Inc.[1]	British Virgin Islands	100%	Euro
PAE PanAfrican Energy Corporation("PAEM")	Mauritius	92%	US dollar
PanAfrican Energy Tanzania Limited	Jersey	92%	US dollar
Orca Exploration UK Services Limited	United Kingdom	100%	British pound

[1] The companies are expected to be wound up during 2020.

Transactions Eliminated Upon Consolidation

Inter-company balances and transactions and any unrealized gains or losses arising from inter-company transactions are eliminated in preparing the consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

2. Basis of Preparation continued

Foreign Currency

i) Foreign Currency Transactions

Transactions in foreign currencies are recorded at the rate of exchange prevailing at the date of the transaction. Monetary assets and liabilities in foreign currencies are translated at period-end rates. Non-monetary items are translated at historic rates, unless such items are carried at market value, in which case they are translated using the exchange rates that existed when the values were determined. Any resulting exchange rate differences are recognized in earnings.

ii) Foreign Currency Translation

Foreign currency differences are recognized in comprehensive income and accumulated in the translation reserve. The assets and liabilities of these companies are translated into the functional currency at the period-end exchange rate. The income and expenses of the companies are translated into the functional currency at the average exchange rate for the period. Translation gains and losses are included in other comprehensive income.

3. Summary of Significant Accounting Policies

The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements.

Capital Assets

i) Capital Assets

Capital assets comprises the Company's tangible natural gas assets, development wells, leasehold improvements, computer equipment, motor vehicles and fixtures and fittings carried at cost, right-of-use assets less any accumulated depletion, depreciation and accumulated impairment losses. Cost includes purchase price and construction costs for qualifying assets. Depletion of these assets commences when the assets are ready for their intended use. Only costs that are directly related to the discovery and development of specific oil and gas reserves are capitalized. The cost associated with tangible natural gas assets are amortized on a unit of production method based on commercial proven reserves. The calculation of the unit of production amortization takes into account the estimated future development cost associated with proven reserves.

ii) Impairment of Property, Plant and Equipment

At each balance sheet date, the Company reviews the carrying amounts of its property, plant and equipment to determine if indicators of impairment exist. Individual assets are grouped together as a cash generating unit ("CGU") for impairment assessment purposes at the lowest level at which there are identifiable cash flows that are independent from other group assets. If any such indication of impairment exists, the Company makes an estimate of its recoverable amount. The recoverable amount is the higher of fair value less costs to sell and value in use. Where the carrying amount of a CGU exceeds its recoverable amount, the CGU is considered impaired and is written down to its recoverable amount. In assessing the value in use, the estimated future cash flows are adjusted for the risks specific to the CGU and are discounted to their present value with a pre-tax discount rate that reflects the current market indicators. The fair value less costs to sell is the amount that would be obtained from the sale of a CGU in an arm's length transaction between knowledgeable and willing parties. Where an impairment loss subsequently reverses, the carrying amount of the asset CGU is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the CGU in prior years. A reversal of an impairment loss is recognized in earnings.

Operatorship

The Company operates the Songo Songo Gas Field, flowlines and gas processing plant. The Songas wells, flowlines and gas plant are operated by the Company on behalf of Songas on a 'no gain no loss' basis. The cost of operating and maintaining the wells and flowlines is paid for by the Company and Songas in proportion to the respective volumes of Protected Gas and Additional Gas sales. The costs of operating and maintaining the wells and flowlines are reflected in the accounts to the extent that the costs were incurred to accomplish Additional Gas sales. The cost of operating the gas processing plant and pipeline to Dar es Salaam is paid by Songas. Costs incurred by the Company in connection with the operatorship of the Songas plant are recorded as receivables which are re-charged to Songas. Subsequent payments received from Songas are credited to receivables. When there are Additional Gas sales, a tariff is paid to Songas as compensation for using the gas processing plant and pipeline.

Employment Benefits

i) Pension

The Company does not operate a pension plan, but it does make defined contributions to the statutory pension fund for employees in the United Kingdom and Tanzania. Obligations for contributions to the statutory pension fund are recognized as an expense as incurred.

ii) Stock Appreciation Rights and Restricted Stock Units

Stock appreciation rights ("SARs") and restricted stock units ("RSUs") are issued to certain key managers, officers, directors and employees. The fair value of SARs and RSUs are recorded in earnings in accordance with the service period. The fair value of the SARs and RSUs is revalued every reporting date with the change in the value recognized in earnings.

Asset Retirement Obligations

No provision has been made for future site restoration costs in Tanzania because the Company currently has no legal or contractual or constructive obligation under the PSA to restore the fields at the end of their commercial lives, should such occur within the term of the PSA. If an amendment to the PSA is agreed requiring the Company to restore the fields at the end of the commercial lives, a provision will be made for future site restoration costs.

3. Summary of Significant Accounting Policies continued

Revenue Recognition, Production Sharing Agreements and Royalties

Pursuant to the terms of the PSA, the Company has exclusive rights to (i) to carry on Exploration Operations in the Songo Songo Gas Field; (ii) to carry on Development Operations in the Songo Songo Gas Field and (iii) jointly with TPDC, to sell or otherwise dispose of Additional Gas.

The Company recognizes revenue related to Additional Gas sales to all customers at specified delivery points at benchmark and contractual prices. A good or service is transferred when the customer obtains control of that good or service. The transfer of control of natural gas occurs at the metering points at the inlet to the customer's facility (see Note 7). Under the terms of the PSA, the Company pays both its share and TPDC's share of operating, administrative and capital costs. The Company recovers all reasonably incurred operating, administrative and capital costs including TPDC's share of these costs from future revenues over several years ("Cost Gas"). TPDC's share of operating and administrative costs is recorded in operating and general and administrative costs when incurred and capital costs are recorded in capital assets. All recoveries are recorded as Cost Gas in the year of recovery.

The Company has gas sales contracts under which the customers are required to take, or pay for, a minimum quantity of gas. In the event that a customer has paid for gas that was not delivered, the additional income received by the Company is carried on the balance sheet as deferred revenue. If the customer consumes volumes in excess of the minimum, it will be charged at the current rate, but may receive a credit for volumes paid but not delivered. At the end of each reporting period the Company reassesses the volumes for which the customer may receive credit, any remaining balance is credited to income.

In any given year, the Company is entitled to recover as Cost Gas up to 75% of the net revenue (gross revenue less processing and pipeline tariffs). Any net revenue in excess of the Cost Gas ("Profit Gas") is shared between the Company and TPDC in accordance with the terms of the PSA. Under the PSA the Profit Gas payable to TPDC is adjusted by the amount necessary to fully pay and discharge the Company's liability for taxes on income. Revenue represents the Company's share of Profit Gas and Cost Gas during the period.

The Company records revenues for sales to TANESCO based on the expected amount to be collected, which represents a percentage of the amounts invoiced to TANESCO determined by comparison of TANESCO's payment history to the amounts invoiced by the Company. Management believes this approach provides the best estimate of TANESCO's ability to pay and remain reasonably current; it also reflects the economic reality of the situation (see Notes 4 and 7).

The estimated percentage used to recognize TANESCO revenue will be reviewed periodically as circumstances require. If there is a significant difference between the amount of revenue recorded and amounts received, the percentage used to record revenue as well as any existing receivable or deferred revenue balance will be revised accordingly. Since April 1, 2018 the Company has recognized 100% of amounts invoiced for TANESCO gas deliveries in revenue as payments from TANESCO for the past three years have consistently been higher than amounts invoiced for gas deliveries.

Prior to April 1, 2018 cash received in excess of the revenue recorded for deliveries to TANESCO in any given period was recorded as deferred revenue. In periods when the deferred revenue balance was greater than the amounts invoiced to TANESCO for gas deliveries for the previous four quarters, any amount in excess of the previous four quarter average was recorded as current period revenue to the extent there had been unrecognized revenue resulting from the expected collectability approach. If such unrecognized revenue is reduced to nil, additional amounts collected in excess of the quarterly average will be applied to pay the oldest TANESCO invoice recorded and previously provided for, the corresponding doubtful debt provision is released and recorded as finance income.

In periods when cash received is less than revenue recorded, the deferred revenue will be reduced accordingly. If the deferred revenue amount is reduced to nil, the difference will be recorded as accounts receivable.

The Company sells its natural gas to power customers (TANESCO, TPDC and Songas) and one industrial customer (a cement manufacturer) pursuant to fixed-price contracts. Sales to other industrial customers are at fixed-price discounts (subject to certain floors and ceilings) to the lowest alternative fuel source in Dar es Salaam, Heavy Fuel Oil ("HFO") and coal. Under all contracts, the Company is required to deliver volumes of natural gas to the contract counterparty. Natural gas revenue is recognized when the Company gives up control of the natural gas which occurs at metering points located at the inlets of customers' facilities. The amount of production revenue recognized is based on the agreed transaction price and the volumes delivered.

The Company has entered into contracts with customers with terms ranging from four to seven years.

Additional Profits Tax

Under the terms of the PSA, in the event that all costs have been recovered with an annual return from the PSA of 25% plus the percentage change in the United States Industrial Goods Producer Price Index, an Additional Profits Tax ("APT") is payable to the Government of Tanzania. APT is provided for by forecasting the total APT payable in the future as a proportion of the forecast Profit Gas over the term of PSA license. The actual APT that will be paid is dependent on the achieved value of the Additional Gas sales and the quantum and timing of the operating costs and capital expenditure program.

The PSA states that APT shall be calculated for each year and shall vary with the real rate of return earned by the Company on the net cash flow from the Contract Area (as defined in the PSA). The calculation of APT includes a working capital adjustment reflecting the effect of the timing of actual receipt of amounts owing from TANESCO on net cash flow.

Income Taxes

The Company is liable for Tanzanian income tax on the income for the year; this comprises current and deferred tax. Where current income tax is payable, this is shown as a current tax liability. Deferred tax is provided using the balance sheet method, providing for temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The amount of deferred tax provided is based on the expected manner of realization or settlement of carrying amounts of assets and liabilities using tax rates substantively enacted at the balance sheet date. A deferred tax asset is recognized only to the extent that it is probable that future taxable profits will be available, against which the asset can be utilized. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefits will be realized.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

3. Summary of Significant Accounting Policies continued

Depreciation

Depreciation for non-natural gas properties is charged to earnings on a straight-line basis over the estimated useful economic lives of each class of asset. The estimated useful lives are as follows:

Leasehold improvement	Over remaining life of the lease
Computer equipment	3 years
Vehicles	3 years
Fixtures and fittings	3 years
Leased assets and right-of-use assets	Over the remaining life of the lease

Financial Instruments

All financial instruments are initially recognized at fair value on the consolidated statement of financial position. The Company has classified each financial instrument into one of the following categories: (i) fair value through the statement of comprehensive income (loss), (ii) loans and receivables, and (iii) other financial liabilities. Measurement in subsequent periods depends on the classification of the financial instrument as described below:

- Fair value through profit or loss: financial instruments under this classification include cash and cash equivalents and derivative assets and liabilities.
- Amortized cost: financial instruments under this classification include accounts receivable, investments in bonds, investments, accounts payable and accrued liabilities, dividends payable, finance lease obligations, and long-term debt.

Financial assets and liabilities are recognized when the Company becomes a party to the contractual provisions of the instrument. Financial assets are derecognized when the rights to receive cash flows from the assets have expired or have been transferred and the Company has transferred substantially all risks and rewards of ownership. Financial assets and liabilities are offset and the net amount is reported on the statement of financial position when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis, or realize the asset and settle the liability simultaneously.

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, term deposits and short-term highly liquid investments with the original term to maturity of three months or less, which are convertible to known amounts of cash and which, in the opinion of management, are subject to an insignificant risk of changes in value. The fair value of cash and cash equivalents approximates their carrying amount. There are no restrictions on the movement of funds out of Tanzania.

Investments in Short-Term Bonds

Investments in short-term bonds includes highly liquid investments with the original term to maturity of 12-months or less which are convertible to known amounts of cash and which, in the opinion of management, are subject to an insignificant risk of changes in value. The fair value of the investments in short-term bonds approximates their carrying amount.

Impairment of Financial Assets

A financial asset is assessed at each reporting date to determine whether there is any objective evidence that it is impaired. A financial asset is considered to be impaired if objective evidence indicates that one or more events have had a negative effect on the estimated future cash flows of that asset.

An impairment loss in respect of a financial asset measured at amortized cost is calculated as the difference between its carrying amount and the present value of the estimated future cash flows discounted at the original effective interest rate. Individually significant financial assets are tested for impairment on an individual basis. The remaining financial assets are assessed collectively in groups that share similar credit risk characteristics.

All impairment losses are recognized in earnings. An impairment loss is reversed if the reversal can be related objectively to an event occurring after the impairment loss was recognized. For financial assets measured at amortized cost the reversal is recognized in earnings.

Leases

Effective January 1, 2019 the Company adopted IFRS 16 using the modified retrospective approach, and therefore the comparative information has not been restated and continues to be reported under IAS 17 and IFRIC 4. The implementation of the new policy has not resulted in any material changes to the Company's financial statements.

On adoption of IFRS 16 the Company elected to apply the practical expedient of retaining the assessment of which transactions are leases. IFRS 16 was applied only to contracts that were previously identified as leases. Contracts that were not identified as leases under IAS 17 and IFRIC 4 were not reassessed as to whether or not there is a lease. Therefore, the definition of a lease under IFRS 16 was applied only to contracts entered into or changed after January 1, 2019.

The Company recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is depreciated using the straight-line method from its commencement date to the earlier of the end of the useful life of the right-of-use asset or end of the lease term. The estimated useful lives of right-of-use assets are determined on the same basis as those of property, plant and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain re-measurements of the lease liability.

3. Summary of Significant Accounting Policies continued

The lease liability is initially measured at the present value of the minimum lease payments that are not yet paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Company's incremental borrowing rate for that asset. Generally, the Company uses its incremental borrowing rate as the discount rate. The lease liability is subsequently increased by the interest cost on the lease liability and decreased by lease payments made. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, a change in estimate of the amount expected to be payable under a residual value guarantee, changes in the assessment of whether a purchase or extension option is reasonably certain to be exercised or a termination option is reasonably certain not to be exercised.

As a result of adopting IFRS 16, the Company has recorded right-of-use assets and lease liabilities related to contracts which previously had been off-balance sheet and classified as operating leases under IAS 17. The following table details the impact of the adoption of IFRS 16 on the Company's balance sheet:

$'000	Balance sheet impact	As at December 31 2019
Capital assets	Increase	**1,665**
Trade and other payables	Increase	**(282)**
Lease liabilities	Increase	**(1,129)**

Short-Term Leases and Leases of Low Value Assets

The Company has elected not to recognize right-of-use assets and lease liabilities for short term leases that have a term of 12-months or less and leases of low value assets defined as less than $5,000 USD or less. The Company recognizes the lease payments associated with these leases as an expense when incurred, over the lease term.

Future Accounting Changes

The following pronouncements from the IASB will become effective or were amended for financial reporting periods beginning on or after January 1, 2020.

On October 22, 2018, the IASB issued "Definition of a Business (Amendments to IFRS 3)" aimed at resolving the difficulties that arise when an entity determines whether it has acquired a business or a group of assets. The amendments are effective for business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020.

On October 31, 2018, the IASB issued "Definition of Material (Amendments to IAS 1 and IAS 8)" to clarify the definition of 'material' and to align the definition used in the Conceptual Framework and the standards themselves. The amendments are effective for annual reporting periods beginning on or after January 1, 2020.

The Company continues to review its position with respect to the IASB pronouncements but is not expecting any significant impact on its consolidated financial statements.

4. Use of Estimates and Judgments

The following are the critical judgments, apart from those involving estimations (see below), that management has made in the process of applying the Company's accounting policies and that have the most significant effect on the accounts recognized in these consolidated financial statements.

Critical Judgments in Applying Accounting Policies:

A. Natural gas assets

The Company assesses its natural gas assets for impairment when events or circumstances indicate that the carrying amount of its assets may not be recoverable. If any indication of impairment exists, the Company performs an impairment test on the CGU, which is the lowest level at which there are identifiable cash flows. The carrying amount of the CGU is compared to its recoverable amount which is defined as the greater of its fair value less cost to sell and value in use and is subject to management estimates. These estimates include quantities of reserves and future production, future commodity pricing, development costs, operating costs, and discount rates. Any changes in these estimates may have an impact on the recoverable amount of the CGU.

B. Collectability of receivables

The Company evaluates the collectability of its receivables on the basis of payment history, frequency and predictability, as well as Management's assessment of the customer's willingness and ability to pay. Management performs impairment tests each period on the Company's current and long-term receivables.

C. Statutory taxes

The Company operates in a jurisdiction with complex tax laws and regulations, which are evolving over time. The Company has taken certain tax positions in its tax filings and these filings are subject to audit and potential reassessment after the lapse of considerable time. Accordingly, the actual income tax impact may differ significantly from that estimated and recorded by management.

The recognition or reversal of deferred tax assets requires judgment as to whether or not there will be sufficient taxable profits available to offset the tax assets when they do reverse. This requires assumptions regarding future profitability and is therefore inherently uncertain.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

4. Use of Estimates and Judgments continued

Key Sources of Estimation of Uncertainty

D. Reserves

There are numerous uncertainties inherent in estimating quantities of proved and probable reserves and cash flows to be derived therefrom, including many factors beyond the control of the Company. The reserves and estimated future net cash flow from the Company's properties have been evaluated by independent petroleum engineers. These evaluations include a number of assumptions relating to factors such as initial production rates, production decline rates, ultimate recovery of reserves, timing and amount of capital expenditures, marketability of production, crude oil price differentials to benchmarks, future prices of oil and natural gas, operating costs, transportation costs, cost recovery provisions and royalties, TPDC "back-in" methodology and other Government levies that may be imposed over the producing life of the reserves. These assumptions were based on price forecasts in use at the date the relevant evaluations were prepared and many of these assumptions are subject to change and are beyond the control of the Company. To date, TPDC has neither elected to back in within the prescribed notice period nor contributed any costs associated with backing in.

Reserves are integral to the amount of depletion and impairment test.

E. Fair Value of Stock Based Compensation

All SARs and RSUs granted by the Company are required to be measured at their fair value for each reporting period. In assessing the fair value of the equity based compensation, estimates have to be made as to (i) the volatility in share price, (ii) the risk free rate of interest, (iii) the level of forfeiture, and (iv) the dividend yield.

F. Cost Recovery

The Company is able to recover reasonable costs incurred on the development of the Songo Songo project out of 75% of the gross field revenue less processing and pipeline tariffs ("field net revenue"). There are inherent uncertainties in estimating when costs have been recovered as these costs are subject to Government audit and in exceptional circumstances a potential reassessment after the lapse of a considerable period of time.

5. Risk Management

The Company, by its activities in oil and gas exploration, development and production, is exposed to the risk associated with the unpredictable nature of the financial markets as well as political risk associated with conducting operations in an emerging market. The Company seeks to manage its exposure to these risks wherever possible.

A. Foreign Exchange Risk

Foreign exchange risk arises when transactions and recognized assets and liabilities of the Company are denominated in a currency that is not the US dollar functional currency.

The Company operates internationally and is exposed to foreign exchange risk arising from currency exposures to US dollars. The main currencies to which the Company has an exposure are: Tanzanian shillings, British pounds sterling, Euros and Canadian dollars.

The majority of contracts with customers are based on US dollar prices for gas delivered however the majority of invoices and receipts are in Tanzanian shillings. Invoices are priced and then converted to Tanzanian shillings at the time of invoicing however payments are based on the US dollar invoiced amount translated to shillings at the time of payment. While conversion of Tanzanian shillings into US dollars is unrestricted, the foreign exchange market for Tanzanian shillings is limited and not highly liquid, reducing the Company's ability to convert large amounts of Tanzanian shillings into US dollars at any given time. To mitigate the risk of Tanzanian shilling devaluation, the Company regularly converts Tanzanian shilling receipts into US dollars to the extent practicable taking into consideration that the majority of operating expenditures are denominated in Tanzanian shillings.

The majority of capital expenditures are denominated in US dollars. Capital stock, equity financing and any associated stock based compensation are denominated in Canadian dollars.

There are no forward exchange rate contracts in place.

A 10% increase in the US dollar against the relevant foreign currency would result in an overall increase in working capital (defined as current assets less current liabilities) of $1.2 million from $107.0 million to $108.2 million and an increase in the income before tax from $45.9 million to $47.0 million. The sensitivity includes only outstanding foreign currency denominated monetary items and adjusts their translation at period end for a 10% change in the foreign currency rates. A 10% sensitivity rate is used when reporting foreign currency risk internally to key management personnel and represents management's assessment of the reasonable possible change in foreign exchange rates.

The following balances are denominated in foreign currency (stated in US dollars at period end exchange rates):

Balances as at December 31, 2019

$'millions	Canadian dollars	Tanzanian shillings	Euros	Other currencies	Total
Cash	0.1	9.4	0.2	0.5	**10.2**
Trade and other receivables	–	9.6	–	0.1	**9.7**
Trade and other payables	(1.5)	(9.2)	–	(0.1)	**(10.8)**
Net	(1.4)	9.8	0.2	0.5	**9.1**

B. Commodity Price Risk

The Company negotiated industrial gas sales contracts with gas prices which, subject to certain floors and ceilings, are determined as a discount to the lowest cost alternative fuels in Dar es Salaam, namely Heavy Fuel Oil ("HFO") and coal. The price of HFO is exposed to the volatility in the market price of crude oil.

C. Interest Rate Risk

Interest rate risk is the risk that future cash flows will fluctuate as a result of changes in market interest rates. The Company has minimal exposure to interest rates as the long-term loan has a fixed interest rate, interest rates on short-term investments are fixed and interest received on cash balances is not significant.

D. Concentration Risk

All the Company's sales are currently made in Tanzania. The sales are made to the Power sector and the Industrial sector. In relation to sales to the Power sector, the Company has a contract with Songas for the supply of gas to the Ubungo power plant, a contract with TANESCO to supply gas to some of the TANESCO power plants, and a contract with TPDC to supply gas through NNGI. The contracts with Songas, TANESCO and TPDC accounted for 57% of the Company's gross field revenue operating revenue during 2019 and $9.6 million of the short and long-term receivables at December 31, 2019.

E. Credit Risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations and arises principally from the Company's receivables from TANESCO, Songas and TPDC. The carrying amount of accounts receivable and the long-term receivable represents the maximum credit exposure. As at December 31, 2019 and 2018, provisions exist against all of the long-term TANESCO receivable, gas plant operations and capital expenditure receivables from Songas, and a receivable of $0.5 million from one industrial customer. No write-off of any receivables occurred in 2019 or 2018 (see Note 12).

The Company manages the credit exposure related to cash and cash equivalents by selecting counterparties based on credit ratings and monitoring all investments to ensure a stable return, avoiding complex investment vehicles with higher risk such as asset backed commercial paper. The Company's cash resources are placed with reputable financial institutions with no history of default.

F. Liquidity Risk

Liquidity risk is the risk that the Company will not have sufficient funds to meet its liabilities. Cash forecasts identifying liquidity requirements of the Company are produced on a regular basis. These are reviewed to ensure sufficient funds exist to finance the Company's current operational and investment cash flow requirements. At December 31, 2019 the Company has working capital of $107.0 million which is net of $60.6 million of financial liabilities with regards to trade and other payables of which $34.6 million is due within one to three months, nil is due within three to six months, and $26.0 million is due within six to twelve months (see Note 14).

At the end of the year approximately 56% of the current liabilities relate to TPDC (see Note 14). The amounts due to TPDC represent its share of Profit Gas and the current portion of Additional Profit Tax; in accordance with the terms of the PSA, TPDC is entitled to the payment of its share of Profit Gas on a quarterly basis proportional to the cash receipts during the quarter. A large proportion of the TPDC liability is associated with the long-term TANESCO arrears and payments to TPDC are made when cash is received for the arrears.

G. Capital Risk Management

The Company's objectives when managing capital are to safeguard the Company's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to achieve an optimal capital structure to reduce the cost of capital.

H. Country Risk

The Company has unresolved disputes with TPDC related to Cost Gas revenue, TANESCO and Songas regarding unpaid invoices, and the Tanzanian Revenue Authority ("TRA") in relation to tax disputes (see Note 21). The Company continues to rely upon its rights under the existing PSA and has initiated notices of disputes as required under the PSA and by local tax regulations to resolve outstanding issues. The Company has put in place an advisory committee of experienced individuals with significant experience working with the Tanzanian Government to mitigate the risks of doing business in Tanzania.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

6. Segment Information

The Company has one reportable industry segment which is international exploration, development and production of petroleum and natural gas. During 2019 the Company's producing and exploration assets were entirely located in Tanzania. Previously, the Company had exploration and appraisal interests in Italy.

	Years ended December 31				
	2019		2018		
$'000	Tanzania	Total	Italy	Tanzania	Total
External revenue	**85,595**	**85,595**	–	57,766	57,766
Segment net income attributable to shareholders	**24,718**	**24,718**	340	12,930	13,270
Finance income (Note 9)	**13,909**	**13,909**	–	19,136	19,136
Finance expense (Note 9)	**9,577**	**9,577**	–	14,683	14,683
Capital expenditures (Note 13)	**5,836**	**5,836**	–	5,843	5,843
Depletion & depreciation (Note 13)	**15,329**	**15,329**	–	9,660	9,660

	Years ended December 31				
	2019		2018		
$'000	Tanzania	Total	Italy	Tanzania	Total
Total assets	**271,772**	**271,772**	748	261,693	262,441
Total liabilities	**163,205**	**163,205**	16	168,723	168,739

7. Revenue

	Years ended December 31	
$'000	2019	2018
Industrial sector	**38,530**	39,095
Power sector	**62,329**	40,395
Gross field revenue	**100,859**	79,490
TPDC share of revenue	**(28,334)**	(25,056)
Company operating revenue	**72,525**	54,434
Current income tax adjustment	**13,070**	3,332
Revenue	**85,595**	57,766

Since April 1, 2018 the Company has recognized 100% of amounts invoiced for deliveries to TANESCO as revenue. The 2018 trend, which saw TANESCO paying in excess of gas delivered, continued in 2019. The Company invoiced TANESCO $50.6 million (2018: $31.7 million) for gas deliveries and received $61.6 million (2018: $43.3 million) in payments during 2019. Based on the consistent payments from TANESCO, the Company: (i) recognized all amounts invoiced for gas deliveries in 2019 as revenue; and (ii) recognized $11.0 million during the year (2018: $15.9 million) as finance income relating to the amounts collected during 2019 that were applied towards the long-term TANESCO arrears previously provided for (see Note 9).

8. Personnel Expenses

	Years ended December 31	
$'000	2019	2018
Employee and related costs included in:		
Production, distribution and transportation	**3,036**	2,907
General and administrative	**6,188**	6,084
	9,224	8,991
Stock based compensation (Note 17)	**2,455**	4,643
	11,679	13,634

Personnel expenses include Company employees who operate the Songas facilities on behalf of Songas; these expenses are recharged to Songas.

9. Finance Income and Expense

Finance Income

$'000	Years ended December 31 2019	2018
Interest income	**666**	625
Investment income	**2,199**	1,084
Reversal of provision for doubtful accounts	**11,044**	17,427
	13,909	19,136

The reversal of the provision for doubtful accounts of $11.0 million (2018: $15.9 million) follows collection of TANESCO arrears which had been previously provided for and represents the excess of receipts over gas sales invoiced during the year (see Notes 7 and 12). The 2018 amount also includes reversals of provisions re Songas of $1.2 million and value added tax of $0.3 million.

At December 31, 2019 the Company had $44.8 million invested in US dollar short-term bonds with maturity dates from February 2020 to July 2020 and a range of interest rates from 1.375% to 2.75% (December 31, 2018: $66.8 million with maturity dates from March 2019 to December 2019 and a range of interest rates from 0.875% to 2.125%). The $2.2 million investment income for the year ended December 31, 2019 (2018: $1.1 million) includes interest earned of $1.4 million (2018: $0.6 million) and amortization of the discount on the acquisition of the bonds of $0.8 million (2018: $0.5 million). The Company's intent is to hold the bond investments to maturity; however, the bonds are highly liquid by their nature and may readily be liquidated into cash if necessary. To date, there have been no sale of bond investments prior to their maturity.

Finance Expense

$'000	Years ended December 31 2019	2018
Base interest expense	**6,164**	6,249
Participation interest expense	**2,071**	4,745
Lease interest expense	**44**	–
Interest expense	**8,279**	10,994
Net foreign exchange loss	**289**	695
Indirect tax	**1,298**	3,689
	9,866	15,378

Base interest expense and participation interest expense relate to the long-term loan ("Loan") with the International Finance Corporation ("IFC"). Base interest on the Loan is payable quarterly at 10% per annum on a 'pay-if-you-can-basis' using a formula to calculate the net cash available for such payments as at any given interest payment date. The interest expense is payable quarterly in arrears. The participation interest expense is paid annually in arrears. It equates to 6.4% of PAET's net cash flows from operating activities net of net cash flows used in investing activities for the year. Initially the annual variable participation interest equated to 7% but was reduced as a prepayment of $2.6 million was made in January 2018 associated with the sale of a 7.9% interest in PAEM in accordance with the terms of the Loan. Such participation interest will continue until October 15, 2026 regardless of whether the Loan is repaid prior to its contractual maturity date. The participation interest for the year ended December 31, 2018 included an additional payment of $2.6 million associated with the sale of a 7.9% interest in PAEM in January 2018 in accordance with the terms of the Loan (see Notes 16 and 24).

The indirect tax is for VAT associated with invoices to TANESCO for interest on late payments and invoices under the take or pay provisions within the PGSA. The decline in indirect taxation is a result of no invoice being issued under the take or pay provisions of the PGSA. No take or pay invoice was issued as TANESCO took the required volumes during the contract year to June 30, 2019. In 2018 a take or pay invoice of $16.6 million was raised but not recognized in the financial statements as not meeting revenue recognition criteria with respect to assurance of collectability.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

10. Income Taxes

The tax charge is as follows:

	Years ended December 31	
$'000	2019	2018
Current income tax expense	**10,657**	4,588
Deferred income tax expense	**2,326**	1,016
	12,983	5,604

Tax of $ nil was paid during 2019 in relation to the settlement of the prior year's tax liability (2018: $ nil). Installment tax payments totaling $10.0 million were made in respect of 2019 (2018: $5.5 million). These are presented as a reduction in tax payable on the consolidated statement of financial position.

Tax Rate Reconciliation

	Years ended December 31	
$'000	2019	2018
Income before tax per Consolidated Statements of Comprehensive Income	**45,916**	22,181
Less Additional Profits Tax	**(6,587)**	(3,014)
Income before statutory tax	**39,329**	19,167
Provision for income tax calculated at the statutory rate of 30%	**11,799**	5,750
Effect on income tax of:		
Administrative and operating expenses	**1,827**	1,478
Foreign exchange loss	**61**	92
Stock-based compensation	**532**	878
TANESCO interest not recognized as interest income	**2,164**	1,936
Change in unrecognized tax asset	**(2,924)**	(4,903)
Other permanent differences	**(476)**	373
	12,983	5,604

As at December 31, 2019 the provision for doubtful debts against TANESCO had resulted in a $22.2 million unrecognized deferred tax asset (December 31, 2018: $22.8 million). If this debt is ultimately not recovered, the Company will also be entitled to a $15.3 million (2018: $15.7 million) refund of Value Added Tax.

The deferred income tax liability includes the following temporary differences:

	As at December 31	
$'000	2019	2018
Differences between tax base and carrying value of property, plant and equipment	**(27,153)**	(24,746)
Tax recoverable from TPDC	**(4,560)**	(2,128)
Provision for doubtful debt	**2,720**	2,720
Additional Profits Tax	**13,287**	11,248
Unrealized exchange losses/other provisions	**553**	78
	(15,153)	(12,828)

11. Additional Profits Tax

Under the terms of the PSA, in the event that all costs have been recovered with an annual cash return from the PSA of 25% plus the percentage change in the United States Industrial Goods Producer Price Index ("PPI"), an Additional Profits Tax ("APT") is payable.

The Company provides for APT by forecasting the total APT payable as a proportion of the Company's forecast Profit Gas over the term of the PSA. The effective APT rate of 19.0% (2018: 19.4%) has been applied to Profit Gas of $34.6 million (2018: $15.5 million). Accordingly, $6.6 million of APT has been recorded as Additional Profits Tax for the year ended December 31, 2019 (2018: $3.0 million). As at December 31, 2019 the current portion of APT payable was $11.9 million (December 31, 2018: $ nil) with a long-term APT payable of $32.3 million (December 31, 2018: $37.6 million).

12. Trade and Other Receivables

Current Receivables

	As at December 31	
$'000	2019	2018
Trade receivables		
Songas	**2,332**	2,489
TPDC	**7,284**	–
Industrial customers	**9,121**	9,107
Less provision for doubtful accounts	**(452)**	(452)
	18,285	11,144
Other receivables		
Songas gas plant operations	**6,431**	6,496
Other	**1,166**	1,937
Less provision for doubtful accounts	**(3,715)**	(3,715)
	3,882	4,718
	22,167	15,862

Trade Receivables Aged Analysis

	As at December 31, 2019				
$'000	Current	>30 <60	>60 <90	>90	Total
	7,631	**8,228**	**640**	**1,786**	**18,285**

	As at December 31, 2018				
$'000	Current	>30 <60	>60 <90	>90	Total
	3,457	5,057	1,657	973	11,144

TANESCO

TANESCO has consistently paid more than the amounts invoiced for gas deliveries during the past two years and as a result the current TANESCO receivable as at December 31, 2019 was $ nil (December 31, 2018: $ nil). See Note 15 in relation to the long-term receivable due from TANESCO.

Songas

As at December 31, 2019 Songas owed the Company $8.8 million (December 31, 2018: $9.0 million), while the Company owed Songas $2.4 million (December 31, 2018: $2.2 million). The amounts due to the Company are mainly for sales of gas of $2.3 million (December 31, 2018: $2.5 million) and for the operation of the gas plant of $6.4 million (December 31, 2018: $6.5 million) against which the Company has made a provision for doubtful accounts of $3.7 million (December 31, 2018: $3.7 million). The amounts due to Songas primarily relate to pipeline tariff charges of $1.8 million (December 31, 2018: $1.8 million). The operation of the gas plant is conducted at cost and the charges are billed to Songas on a flow through basis.

TPDC

The current receivable from TPDC is for gas deliveries through the NNGI pursuant to the signing of the LTGSA. In accordance with the LTGSA, any unpaid, overdue amounts can be offset against TPDC profit share.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

13. Capital Assets

$'000	Natural gas interests	Office and other	Right-of-use	Total
Costs				
As at December 31, 2018	210,010	3,860	–	213,870
Additions	4,153	18	1,665	5,836
Disposals	–	(1,008)	–	(1,008)
As at December 31, 2019	**214,163**	**2,870**	**1,665**	**218,698**
Accumulated depletion and depreciation				
As at December 31, 2018	102,753	3,643	–	106,396
Additions	15,005	135	189	15,329
Disposals	–	(1,008)	–	(1,008)
As at December 31, 2019	**117,758**	**2,770**	**189**	**120,717**
Net book values				
As at December 31, 2019	**96,405**	**100**	**1,476**	**97,981**

$'000	Natural gas interests	Office and other	Right-of-use	Total
Costs				
As at December 31, 2017	204,266	3,761	–	208,027
Additions	5,744	99	–	5,843
As at December 31, 2018	210,010	3,860	–	213,870
Accumulated depletion and depreciation				
As at December 31, 2017	93,258	3,478	–	96,736
Additions	9,495	165	–	9,660
As at December 31, 2018	102,753	3,643	–	106,396
Net book values				
As at December 31, 2018	107,257	217	–	107,474

In determining the depletion charge, it is estimated that future development costs of $67.9 million (December 31, 2018: $72.0 million) will be required to bring the total proved reserves to production. The decrease in estimated future development costs is a result of expenditures during the year of $4.2 million and the revision of future cost estimates. The future development cost is an estimate of the capital expenditure required to ensure the Company can produce the required gas volumes to meet its contractual obligations for the remaining life of the license. During the year the Company recorded depreciation of $0.3 million (2018: $0.2 million) in general and administrative expenses.

Leases

Effective January 1, 2019, the Company adopted IFRS 16 – Leases which replaced IAS 17 – Leases. The new standard was adopted using the modified retrospective approach.

On transition to IFRS 16, the Company recognized additional right-of-use assets and lease liabilities. The Company leases office space which previously were classified as operating leases under IAS 17 and payments were expensed. The impact of the transition and activity in the period is summarized below.

13. Capital Assets continued

Right-of-use assets

$'000	
As at January 1, 2019 (effect from IFRS 16 adoption)	537
Additions	1,128
Depreciation	(189)
As at December 31, 2019	**1,476**

Lease liabilities

$'000	
As at January 1, 2019 (effect from IFRS 16 adoption)	537
Additions	1,128
Lease interest expense	44
Lease payments	(298)
As at December 31, 2019	**1,411**

Right-of-use assets is presented as part of capital assets on the Company's balance sheet. Of the total lease liability of $1.4 million, $0.3 million is current and is presented in trade and other payables.

14. Trade and Other Payables

	As at December 31	
$'000	2019	2018
Songas	**2,354**	2,163
Other trade payables	**1,310**	2,347
Trade payables	**3,664**	4,510
TPDC Profit Gas entitlement, net	**33,134**	40,260
Accrued liabilities	**11,363**	14,864
	48,161	59,634

TPDC share of Profit Gas

	As at December 31	
$'000	2019	2018
TPDC share of Profit Gas	**38,077**	40,606
Less "Adjustment Factor"	**(4,943)**	(346)
TPDC share of Profit Gas entitlement	**33,134**	40,260

Under the PSA revenue sharing mechanism, the Company is to adjust TPDC's Profit Gas entitlement by the "Adjustment Factor". The Adjustment Factor is equal to the amount necessary to fully pay and discharge the PAET liability for taxes on income derived from petroleum operations.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

15. Long-term Receivables

	As at December 31	
$'000	2019	2018
TANESCO receivable	**47,454**	58,498
Provision for doubtful accounts	**(47,454)**	(58,498)
Net TANESCO receivable	**–**	–
VAT Songas workovers	**2,205**	2,205
Lease deposit	**45**	219
	2,250	2,424

During the year the amounts received from TANESCO were in excess of the revenue recognized for gas sales to TANESCO and $11.0 million of cumulative excess cash receipts over sales invoiced in 2019 were recorded to reduce the long-term arrears along with the associated reversal of the provision for doubtful accounts (2018: $15.9 million).

In 2017, based on agreement with TPDC, the Songas share of workover costs of $14.5 million was transferred to the cost pool to recover the costs via the PSA cost recovery mechanism. This resulted in $2.2 million relating to VAT on the workovers that had already been paid being reclassified as a long-term receivable. The Company continues to take action to collect the workover costs. Amounts not collected will be pursued through the mechanisms provided in the agreements with Songas.

16. Long-term Loan

In 2015 PAET took out the Loan with the IFC, a member of the World Bank Group, for $60 million. The Loan was fully drawn down in 2016.

The Loan is to be paid out through six semi-annual payments of $5 million starting April 15, 2022 and one final payment of $25.2 million due on April 15, 2025. The Company may voluntarily prepay all or part of the Loan but must simultaneously pay any accrued base interest costs related to the principal amount being prepaid. The Loan is an unsecured subordinated obligation of PAET and was initially guaranteed by the Company to a maximum of $30 million. The initial guarantee may only be called upon by IFC at maturity in 2025 and, subject to IFC approval and receipt of all required regulatory approvals, the Company, at its discretion, may issue shares in fulfillment of all or part of the guarantee obligation in 2025. Pursuant to the sale of the non-controlling interest in PAEM, the Company agreed with the IFC to reduce the outstanding amount of the loan by the percentage interest sold of 7.9% ($4.8 million) on the fourth anniversary of the first drawdown. PAET made this payment on October 16, 2019.

Dividends and distributions from PAET to the Company are restricted, if at any time amounts of interest, principal or participating interest are due and outstanding. All amounts due under the Loan have been paid when due.

	As at December 31	
$'000	2019	2018
Loan principal	**55,240**	60,000
Financing costs	**(1,183)**	(1,340)
Current portion of loan	**–**	(4,760)
	54,057	53,900

17. Capital Stock

Authorised

50,000,000	Class A common shares ("Class A Shares")	No par value
100,000,000	Class B subordinate voting shares ("Class B Shares")	No par value
100,000,000	First preference shares	No par value

The Class A and Class B Shares rank pari passu in respect of dividends and repayment of capital in the event of winding-up. Class A Shares carry twenty (20) votes per share and Class B Shares carry one vote per share. The Class A Shares are convertible at the option of the holder at any time into Class B Shares on a one-for-one basis. The Class B Shares are convertible into Class A Shares on a one-for-one basis in the event that a take-over bid is made to purchase Class A Shares which must, by reason of a stock exchange or legal requirements, be made to all or substantially all of the holders of Class A Shares and which is not concurrently made to holders of Class B Shares.

Changes in the capital stock

	As at December 31					
	2019			2018		
Number of shares	Authorised (000)	Issued (000)	Amount ($'000)	Authorised (000)	Issued (000)	Amount ($'000)
Class A Shares	**50,000**	**1,750**	**983**	50,000	1,750	983
Class B Shares	**100,000**	**32,557**	**83,116**	100,000	33,506	85,525
First preference shares	**100,000**	**–**	**–**	100,000	–	–
Total	**250,000**	**34,307**	**84,099**	250,000	35,256	86,508

During the year the Company repurchased and canceled 933,028 Class B Shares (2018: nil) at a weighted average price of CDN$6.43 per Class B Share under a normal course issuer bid ("NCIB"). Total cash payments of $4.5 million were applied to the capital stock and contributed surplus accounts (see Note 25 re substantial issuer bid). All issued capital stock is fully paid.

Changes in Stock Appreciation Rights ("SARs")

	2019		2018	
	SARs (000)	Exercise price (CDN$)	SARs (000)	Exercise price (CDN$)
Outstanding as at January 1	**645**	**2.30 to 3.87**	2,485	2.12 to 3.87
Issued	**2,169**	**5.00 to 6.65**	–	–
Exercised	**(405)**	**2.30 to 3.87**	(1,630)	2.12 to 3.87
Forfeited	**(87)**	**5.00**	(210)	2.30 to 3.87
Outstanding as at December 31	**2,322**	**2.30 to 6.65**	645	2.30 to 3.87

The number outstanding, the weighted average remaining life and weighted average exercise prices of SARs at December 31, 2019 were as follows:

Exercise price (CDN$)	Number outstanding (000)	Weighted average remaining contractual life (years)	Number exercisable (000)	Weighted average exercise price (CDN$)
2.30	30	–	30	2.30
3.02	120	1.00	60	3.02
3.87	90	3.00	–	3.87
5.00 to 6.65	2,082	3.00	–	6.06
2.30 to 6.65	**2,322**	**2.86**	**90**	**4.95**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

17. Capital Stock continued

Change in Restrictive Stock Units ("RSUs")

	2019		2018	
	RSUs (000)	Exercise price (CDN$)	RSUs (000)	Exercise price (CDN$)
Outstanding as at January 1	**88**	**0.001**	1,148	0.001
Issued	**218**	**0.01**	–	–
Exercised	**(63)**	**0.01**	(1,060)	0.001
Forfeited	**(8)**	**0.01**		
Outstanding as at December 31	**235**	**0.001 to 0.01**	88	0.001

The number outstanding, the weighted average remaining life and weighted average exercise prices of RSUs at December 31, 2019 were as follows:

Exercise price (CDN$)	Number outstanding (000)	Number exercisable (000)	Weighted average remaining contractual life (years)
0.001 to 0.01	**235**	**235**	**2.93**

As SARs and RSUs are settled in cash, they are re-valued at each reporting date using the Black-Scholes option pricing model with the resulting liability being recognized in trade and other payables. In the valuation of stock appreciation rights and restricted stock units as at December 31, 2019, the following assumptions have been made: a risk free rate of interest of 1.0%, stock volatility of 30.1% to 40.9%, 0% dividend yield, 5% forfeiture and a closing stock price of CDN$6.05 per share.

	As at December 31	
$'000	2019	2018
SARs	**1,996**	1,196
RSUs	**536**	364
	2,532	1,560

As at December 31, 2019 a total accrued liability of $2.5 million (December 31, 2018: $1.6 million) has been recognized in relation to SARs and RSUs which is included in other payables. The Company recognized an expense for the year of $2.5 million (2018: $4.6 million) as stock based compensation.

Dividend Summary

Declaration date	Record date	Payment date	Amount per share (CDN$)
February 25, 2020	March 31, 2020	April 30, 2020	0.06
November 28, 2019	December 31, 2019	January 31, 2020	0.06
September 17, 2019	September 30, 2019	October 31, 2019	0.06
May 29, 2019	June 30, 2019	July 31, 2019	0.06
January 22, 2019	March 31, 2019	April 30, 2019	0.05
January 18, 2018	January 31, 2018	February 7, 2018	0.60

18. Earnings Per Share

	As at December 31	
(000)	2019	2018
Outstanding shares		
Weighted average number of Class A and Class B Shares	**34,931**	35,256
Weighted average diluted number of Class A and Class B Shares	**34,931**	35,256

The calculation of basic earnings per share is based on a net income attributable to shareholders for the year of $24.7 million (2018: $13.3 million) and a weighted average number of Class A and Class B Shares outstanding during the period of 34,931,144 (2018: 35,256,432).

19. Related Party Transactions

The Chairman of the Company's Board of Directors is counsel to a law firm that provides legal advice to the Company and its subsidiaries. During the year ended December 31, 2019 fees for services provided by this firm totaled $0.4 million (2018: $0.3 million).

As at December 31, 2019 the Company had a total of $0.2 million (December 31, 2018: $0.04 million) recorded in trade and other payables in relation to related parties.

20. Contractual Obligations and Committed Capital Investments

Protected Gas

Under the terms of the Gas Agreement for the Songo Songo project ("Gas Agreement"), in the event that there is a shortfall/insufficiency in Protected Gas as a consequence of the sale of Additional Gas, the Company is liable to pay the difference between the price of Protected Gas ($0.55/MMbtu escalated) and the price of an alternative feedstock multiplied by the volumes of Protected Gas up to a maximum of the volume of Additional Gas sold which was 214 Bcf as at December 31, 2019 (191 Bcf as at December 31, 2018). The Company did not have a shortfall during the reporting period and does not anticipate a shortfall arising during the term of the Protected Gas delivery obligation to July 2024.

Terms of the Gas Agreement were modified by the Amended and Restated Gas Agreement ("ARGA") which was initialed by all parties but remains unsigned. In certain respects, the parties thereto are conducting themselves as though the ARGA is in effect. Management does not foresee a material risk with the conduct of the Company's business with an unsigned ARGA at this time.

Re-Rating Agreement

In 2011 the Company, TPDC and Songas signed a Re-Rating Agreement which evidenced an increase to the gas processing capacity of the Songas Infrastructure to a maximum of 110 MMcfd (the pipeline and delivery pressure requirements at the Ubungo power plant restrict the infrastructure capacity to a maximum of 102 MMcfd). Under the terms of the Re-Rating Agreement, the Company paid additional compensation of $0.30/mcf for sales between 70 MMcfd and 90 MMcfd and $0.40/mcf for volumes above 90 MMcfd by issuing credit notes to TANESCO. This was in addition to the tariff of $0.59/mcf payable to Songas as set by the energy regulator, EWURA.

Although Songas notified the Company in 2014 that the Re-Rating Agreement was terminated, the parties have continued to produce, transport and sell gas volumes in line with the re-rated plant capacity. In May 2016 the Company notified TANESCO and Songas that the additional compensation for sales over 70 MMcfd would no longer be paid effective June 2016. The additional compensation was always intended to be temporary in nature until the expansion of the Songas Infrastructure, at which time Songas would apply to EWURA to obtain approval of a new tariff for the processing of volumes over 70 MMcfd. The PGSA provides for passing on to TANESCO any tariff charged to the Company in the event that a new tariff is approved.

The parties to the Re-Rating Agreement are in the process of negotiating a replacement agreement which may address the additional compensation paid through the establishment of an approved tariff from EWURA. In the interim, the processing capacity at the Songas Infrastructure remains unaltered and is fully available for utilization by the Company. This capacity is in addition to the capacity available within the NNGI.

Portfolio Gas Supply Agreement ("PGSA")

On June 17, 2011, the PGSA was signed (term to June 2023) between TANESCO (as the buyer) and the Company and TPDC (collectively as the seller). TANESCO requested a change to the PGSA MDQ in accordance with clause 7.6(b) which PAET and TPDC approved effective January 29, 2018. The seller is now obligated, subject to infrastructure capacity, to sell a maximum of approximately 26 MMcfd (previously 36 MMcfd) for use in any of TANESCO's current power plants, except those operated by Songas at Ubungo. Under the agreement, the basic wellhead price of approximately $2.98/mcf increased to $3.04/mcf on July 1, 2017 and to $3.10/mcf on July 1, 2019. Previously under the PGSA any sales in excess of 36 MMcfd were subject to a 150% increase in the basic wellhead gas price. On December 22, 2018 a side letter amendment to the PGSA was agreed with TPDC to allow PGSA volumes up to a maximum monthly average volume of 35 MMscf/d to temporarily flow through the NNGI. The temporary arrangement was terminated in September 2019 once the refrigeration unit became fully operational and all PGSA volumes were again processed through the Songas Infrastructure.

Long-term Gas Sales Agreement ("LTGSA")

On May 14, 2019 the Company and TPDC signed the LTGSA for an initial delivery of 20 MMcfd through the NNGI, at a price of $3.10/MMbtu as at January 1, 2019, (escalating 2% per annum) exclusive of any processing and transportation tariff associated with the NNGI. The LTGSA was amended on September 24, 2019 to increase the volumes supplied through the NNGI up to a maximum daily quantity of 30 MMcfd. All volumes above 20 MMcfd are supplied on a best endeavors basis until compression facilities are added to the Songas facilities.

Leases

The Company has three office rental agreements, one in Dar es Salaam, Tanzania and two in England, one in Winchester and one in London. A new agreement for the office in Dar es Salaam was entered into on November 1, 2019 and expires on October 31, 2023 at an annual rent of $0.4 million. The Winchester lease expires on September 25, 2022 at an annual rental of $0.2 million per annum. The Winchester office is currently vacant as the Company was trying to sublet and is now considering options for utilizing the office space. The lease of the London office was for a 12-month period and was renewed on February 1, 2020 at $0.2 million per annum for a further six months. The cost of the London office lease is recognized in the general and administrative expenses.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

20. Contractual Obligations and Committed Capital Investments continued

Capital Commitments

The Company is adapting to the recent outbreak of the novel coronavirus ("COVID-19") and the related economic and social disruption, volatility in financial markets, potential disruption to global supply chains, and the ability to directly and indirectly staff the Company's day to day operations. The current challenging economic climate may lead to further adverse changes in cash flows, working capital levels and/or debt balances, which may also have a direct impact on the Company's operating results and financial position. These and other factors may adversely affect the Company's liquidity and ability to generate income and cash flows in the future. The current volatility in commodity prices and uncertainty regarding the timing for recovery creates inherent challenges with the preparation of financial forecasts.

Tanzania

There are no contractual commitments for exploration or development drilling or other field development, either in the PSA or otherwise agreed, which would give rise to significant capital expenditure at Songo Songo. Any significant additional capital expenditure in Tanzania is discretionary.

Italy

As a result of the delays in developing the Italian permit due to changes in the Italian environmental regulations, the Company relinquished its rights to farm-in on the Central Adriatic permit in Q2 2019 and has no further capital obligations relating to Italian operations. The subsidiary companies previously used for the Company's Italian operations are expected to be wound up in 2020.

21. Contingencies

Upstream and Downstream Activities

The Petroleum Act, 2015 (the "Petroleum Act") provides TPDC with exclusive rights over the distribution of gas in Tanzania. The Petroleum Act has grandfathering provisions upholding the rights of the Company to develop and market natural gas produced under the PSA as it was signed prior to the Petroleum Act coming into effect in 2015. However, it is still unclear how the provisions of the Petroleum Act will be interpreted and implemented regarding upstream and downstream activities and the Company is uncertain regarding the potential impact on its business in Tanzania.

On October 7, 2016 the Government of Tanzania issued the Petroleum (Natural Gas Pricing) Regulation made under Sections 165 and 258 (I) of the Petroleum Act. Article 260 (3) of the Petroleum Act preserves the Company's pre-existing right with TPDC to market and sell Additional Gas together or independently on terms and conditions (including prices) negotiated with third party Natural Gas customers. The impact of the Natural Gas Pricing Regulation, if any, cannot be determined at this time.

TPDC Back-in

TPDC has the right under the PSA to 'back in' to the Songo Songo field development and convert this into a carried working interest in the PSA. The current terms of the PSA require TPDC to provide formal notice in a defined period and contribute a proportion of the costs of any development, sharing in the risks in return for an additional share of the gas. To date, TPDC has not contributed any costs.

Cost Recovery

TPDC conducted an audit of the historic Cost Pool and in 2011 disputed approximately $34.0 million of costs that had been recovered from the Cost Pool from 2002 through to 2009. In 2014 a substantial portion of the disputed costs were agreed to be cost recoverable by TPDC. Under the dispute mechanism outlined in the PSA, parties are to agree the appointment of an independent specialist to assist the parties in reaching agreement on costs that are still subject to dispute. In 2014, prior to appointing an independent specialist, TPDC suspended the process. From 2010 to 2015 TPDC rejected a further $18.0 million of costs. In 2016 PURA assumed the role of auditing the PSA cost pool from TPDC and for 2016 and 2017 has rejected all costs pertaining to downstream development amounting to $5.9 million and a further $0.8 million of other costs. To date there remains a total of $45.1 million of costs that have been queried or rejected by TPDC or PURA through the cost pool audit process.

During 2019 discussions on the disputed amounts briefly resumed with TPDC based on the most recent report published by the Tanzanian Attorney General highlighting the lack of progress in resolving the long-standing dispute. At the time of writing this report no independent specialist has been appointed and neither TPDC nor PURA have issued a formal dispute regarding cost recovery. If the matter is not resolved to the Company's satisfaction, the Company intends to proceed to arbitration via the International Centre for Settlement of Investment Disputes ("ICSID") pursuant to the terms of the PSA. The Company's view is that all costs have been correctly included in the Cost Pool however should any of the costs be rejected as not being cost recoverable, the Company would be required to retroactively adjust its share of revenue for the period under dispute.

21. Contingencies continued

Taxation

Amounts in $'millions					As at December 31	
					2019	2018
Area	Period	Reason for dispute	Principal	Interest	Total	Total
Pay-As-You-Earn ("PAYE") tax	2008-16	PAYE tax on grossed-up amounts in staff salaries which are contractually stated as net.	1.2	0.3	1.5 [1]	0.3
Withholding tax ("WHT")	2005-16	WHT on services performed outside of Tanzania by non-resident persons.	5.7	2.6	8.3 [2]	1.7
Income tax	2008-16	Deductibility of capital expenditures and expenses (2009, 2012, 2015 and 2016), additional income tax (2008, 2010, 2011 and 2012), tax on repatriated income (2012), deemed branch dividend (2015 and 2016), foreign exchange rate application (2013 and 2015) and underestimation of tax due (2014).	35.2	15.7	50.9 [3]	42.6
VAT	2008-16	Output VAT on imported services and SSI Operatorship services.	2.8	2.9	5.7 [4]	5.5
			44.9	**21.5**	**66.4**	**50.1**

During the year and following completion of audits for the years ended December 31, 2015 and December 31, 2016, Tanzania Revenue Authority ("TRA") issued assessments for $15.1 million with regards to corporation tax, withholding tax, VAT, excise duty and payroll tax. With the exception of $0.1 million of VAT and WHT on rent which the Company has conceded, the Company has objected to the other components of the assessment and requested a waiver of the deposit required to allow a dispute of the assessment and is awaiting a TRA response. The Company has also objected to several other assessments from TRA demanding deposits to allow the dispute to be made and is awaiting a Tax Revenue Appeals Board ("TRAB") hearing dates. Management, with advice from its legal counsels, has reviewed the Company's position on the objections and appeals related to the disputed amounts and has concluded that no provision is required with regard to these matters and that the maximum potential exposure is $66.4 million (December 31, 2018: $50.1 million).

The process of appealing assessments issued by TRA start by initially filing an appeal with TRA. If this is not successful, claims can be taken to higher authorities starting with the TRAB, followed by an appeal to the Tax Revenue Appeals Tribunal ("TRAT") and finally to the Court of Appeal of Tanzania ("CAT"). Below is a summary of the status of the various assessments:

1 (a) 2008-10 ($0.3 million): Subsequent to December 31, 2019 the Company lost an appeal with CAT on the principal amount and now intends to file an application for judicial review at CAT;

(b) 2015-16 ($1.2 million): The Company has objected to an assessment and is awaiting a TRA response;

2 (a) 2005-2009 ($1.6 million): In 2018 the CAT ruled in favor of the Company that no WHT was required on services performed outside Tanzania by non-resident persons. Waiting to see whether TRA will file an application to object to the CAT ruling;

(b) 2010 ($0.1 million): The Company filed a Statement of Appeal with TRAT and is awaiting a hearing date. The Company has also filed an application for stay of execution with TRAT in response to the TRA demand notice for payment of the amount in dispute and is awaiting a hearing date;

(c) 2015-16 ($6.6 million): The Company objected to several assessments in Q4 2019 issued by TRA with regards to withholding tax. The Company has objected to these assessments and is awaiting a TRA response;

3 (a) 2008 ($0.6 million): The Company has objected to a TRA assessment that did not recognize a tax loss carried forward and is awaiting a response;

(b) 2009 ($2.6 million): The Company has filed an application for review of a CAT judgment and is awaiting a hearing date ($1.8 million). The Company objected to an amended assessment from TRA ($0.8 million) for being time-barred and arbitrary and is awaiting a TRA response;

(c) 2010 ($2.4 million): The Company is awaiting a judgment from a TRAB hearing held in 2019;

(d) 2011 ($1.9 million): The Company is awaiting a judgment from TRAB ($1.7 million). The Company is also awaiting a TRA response on an objection of an assessment ($0.2 million);

(e) 2012 ($15.5 million): The Company has objected to TRA assessments with respect to understated revenue, timing of deductibility of capital expenditures, expenses and tax on repatriated income. The Company is awaiting a CAT hearing date for waiver of a deposit payment required to file its objection;

(f) 2013 ($8.7 million): The Company filed an objection to TRA assessment ($0.2 million) and is awaiting a response. The Company has objected to two assessments as being time-barred and without merit ($8.5 million) and is in the process of appealing to CAT that a deposit is required to file the objection;

(g) 2014 ($11.4 million): The Company filed an objection to a TRA assessment ($3.3 million) and is in the process of appealing to CAT that a deposit is required to file the objection. TRA issued two additional assessments for the year for corporation tax of $5.0 million and tax on repatriated income of $3.1 million. The Company has objected to the assessments and is awaiting a TRA response;

(h) 2015-16 ($7.8 million): The Company filed objections to TRA assessments and is awaiting a response;

4 (a) 2008-2010 ($5.4 million): The Company has filed an appeal of a TRA assessment and is awaiting a TRAT judgment;

(b) 2015-16 ($0.3 million): The Company has filed an objection to a TRA assessment and is awaiting a response.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS CONTINUED

21. Contingencies continued

In 2016 TRA introduced significant changes in relation to the income tax treatment of the extractive sector with separate new chapters in Part V of the Income Tax Act 2004 ("ITA, 2004") for mining and for petroleum to be effective commencing in 2018. Further changes were subsequently made by the Written Laws (Miscellaneous Amendments) Act, 2017 ("WLMAA, 2017") and in particular section 36(a)(ii) of the WLMAA, 2017. The WLMAA, 2017 amended section 65M and 65N of the ITA 2004 to exclude cost oil/cost gas from inclusion in both income and expenditure. The Company is still evaluating the tax effects of the changes as there are a number of uncertainties and ambiguities as to the interpretation and application of certain provisions of the WLMAA, 2017. In the absence of guidance on these matters, the Company has used what it believes are reasonable interpretations and assumptions in applying the WLMAA, 2017 for purposes of determining its tax liabilities and the results of operations, which may change as it receives additional clarification and implementation guidance. The Company does not expect a significant impact from the changes as it is able to recover taxes payable from the TPDC Profit Gas entitlement under the terms of the PSA.

22. Directors and Officers Emoluments

$'000	Year	Base	Bonus	Stock based compensation expense	Total
Directors	**2019**	**554**	**–**	**273**	**827**
Directors	2018	528	–	583	1,111
Officers	**2019**	**1,486**	**–**	**1,082**	**2,568**
Officers	2018	1,845	–	2,116	3,961

The table above provides information on compensation relating to the Company's officers and directors. Four officers (year ended December 31, 2018: three) and six non-executive directors (year ended December 31, 2018: four) comprised the key management personnel during the year ended December 31, 2019.

23. Change in Non-Cash Operating Working Capital

	As at December 31	
$'000	2019	2018
Increase in trade and other receivables	**(7,552)**	(7,309)
Increase in prepayments	**(5,535)**	(351)
Decrease in trade and other payables	**(15,365)**	(8,780)
Increase (decrease) in tax payable	**501**	(865)
Decrease in long-term receivable	**174**	373
	(27,777)	(16,932)
Changes in non-cash operating working capital	**(27,663)**	(17,724)
Changes in non-cash investing working capital	**(114)**	792
Changes in non-cash working capital	**(27,777)**	(16,932)

24. Non-Controlling Interest

On January 16, 2018 the Company sold 7.9% (7,933 Class A common shares) of PAEM to a wholly owned subsidiary of Swala Oil & Gas (Tanzania) plc. ("Swala") for $15.4 million cash (net of closing adjustments) and $4.0 million of Swala convertible preference shares ("Preference Shares") pursuant to a share purchase agreement. The Preference Shares were issued to the Company on June 18, 2018 and entitle the Company to a 10% per annum distribution payable 15 days after each quarter end commencing from the closing date, January 16, 2018. Payment of the quarterly distributions is at the discretion of Swala based on funds available, however, the liability accrues if any amount is unpaid when due. If any distributable amount remains unpaid at December 31, 2021, the Company may demand settlement and Swala is obligated to comply by transferring and returning the Class A common shares of PAEM sold to Swala. The aggregate value of these shares will equal the amount of the outstanding distributions. As at December 31, 2019 the Company has not received any distributions or recorded any amount receivable related to the Preference Shares.

Swala is obligated to redeem 20% of the Preference Shares for cash annually starting from December 31, 2021 until all shares are redeemed. If at any time Swala does not redeem in cash the required number of Preference Shares, Swala is obligated to redeem the Preference Shares by transferring and returning the Class A common shares of PAEM sold to Swala. The aggregate value of these Class A common shares will equal the amount of any outstanding redemption.

A reconciliation of the non-controlling interest is detailed below:

	As at December 31	
$'000	2019	2018
Balance, beginning of year	**(513)**	–
Recorded at the date of disposition	**–**	178
Share of post-disposition income	**1,628**	293
Dividends paid	**(952)**	(984)
Balance, end of year	**163**	(513)

During the year PAEM paid a dividend of $1.0 million (2018: $1.0 million) to Swala.

25. Subsequent Events

On January 24, 2020, the Company announced the authorization of a substantial issuer bid, the outcome of its strategic review process and its focused strategy to grow an integrated gas business in Africa. The announcement followed the work of a special committee of the directors appointed on July 25, 2019 to review strategic alternatives.

On February 25, 2020 the Company declared a dividend of CDN$0.06 per share on each of its Class A Shares and Class B Shares for a total of $1.2 million to holders of record as of March 31, 2020 to be paid on April 30, 2020.

On March 12, 2020 the Company announced the final results of the substantial issuer bid whereby the Company took up and paid for 7,692,297 Class B Shares at a price of CDN$6.50 per Class B Share. This resulted in an aggregate purchase of CDN$50.0 million of Class B Shares representing 23.6% of the Company's issued and outstanding Class B Shares and 22.4% of the total number of the Company's issued and outstanding shares.

On April 7, 2020 the Company announced its intention to amend the NCIB for purchase of its Class B shares initiated in June 2019. Additional purchases made pursuant to the NCIB will not exceed 700,000 Class B Shares (subject to a maximum aggregate purchase limit of CDN$3,850,000) representing not more than 5% of the issued and outstanding Class B Shares as at June 14, 2019 (33,505,915 Class B Shares) less 933,028 Class B Shares already purchased under the NCIB. The NCIB will be in effect until June 14, 2020.

CORPORATE INFORMATION

Board of Directors

Nigel Friend
Executive Director and Chief Executive Officer
London, UK

David W. Ross
Chairman and Non-Executive Director
Calgary, Canada

Dr Frannie Léautier
Non-Executive Director
Washington DC, United States

Jay Lyons
Non-Executive Director
Vancouver, Canada

Linda Beal
Non-Executive Director
London, UK

Ebbie Haan
Non-Executive Director
The Hague, Netherlands

Carole Wainaina
Non-Executive Director
Nairobi, Kenya

Officers

Nigel Friend
Chief Executive Officer
London, UK

Blaine Karst
Chief Financial Officer
Calgary, Canada

Andrew Hanna
Managing Director, PAET
Guildford, UK

Pierre Raillard
Head of Business Development
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