EDISON

# Brooge Energy

## An expanding independent oil storage provider

Initiation of coverage

Oil & gas

**Brooge Energy (BROG) is an independent oil and refined oil products storage and service provider located in the Port of Fujairah, in the United Arab Emirates (UAE). The company is initially developing its terminal's storage capacity in two phases and differentiates itself from competitors by providing fast order processing times and high accuracy blending services with low oil losses using the latest technology. Phase I has been operational since late 2017 and Phase II is expected to be completed by the end of 2020. The company is looking to develop a Phase III, which would increase its storage capacity by 3.5x. The COVID-19 pandemic highlighted the importance of oil storage infrastructure and the vital role the business plays in the logistics and trading of crude oil and refined oil products, as oil demand slumped in H120. Our valuation is based on a blend of DCF, EV/EBITDA and P/E approaches, resulting in a valuation of $11.00/share.**

| Year-end | Revenue ($m) | Adjusted EBITDA* ($m) | Operating cash flow ($m) | Net debt** ($m) | Capex ($m) |
|---|---|---|---|---|---|
| 12/18 | 36 | 30 | 28 | 129 | (0) |
| 12/19 | 44 | 37 | 53 | 100 | (60) |
| 12/20e | 45 | 38 | 23 | 174 | (98) |
| 12/21e | 123 | 113 | 103 | 96 | (24) |

Note: *Profit before finance costs, income tax expense (currently not applicable in the UAE), depreciation, listing expenses and net change in the value of derivative financial instruments. **Including financial leases.

## State-of-the-art facilities in a strategic location

BROG, through its wholly-owned subsidiary Brooge Petroleum and Gas Investment Company FZE (BPGIC), operates 14 oil storage tanks with a capacity of 399,324m$^3$ and expects to increase its capacity by 602,064m$^3$ by the end of 2020, making it one of the biggest storage players in the Port of Fujairah. The Port of Fujairah is the main bunkering location in the Middle East, located outside the Strait of Hormuz, through which c 20% of the world's oil passes each year. In addition to storage, BROG is looking to operate a 25,000bbld low sulphur oil refinery from Q321.

## On-track to be the largest storage provider in Fujairah

BROG is looking at growth opportunities and is in the pre-FEED stages of pursuing a major expansion near existing facilities, which it refers to as Phase III. In February 2020, the company entered into a land lease agreement to secure a new plot of land of c 450,000m$^2$, and currently intends to use the land to increase capacity by 3,500,000m$^3$ (c 22.0mmbbl) and build a 180,000bbld refinery. Post Phase III, BROG is expected to be the largest storage provider in Fujairah.

## Valuation: Substantial upside to $11.00/share valuation

Edison's valuation of BROG is based on a blend of DCF, FY21 P/E multiple and FY21 EV/EBITDA multiple. BROG's peer group currently trades at a 30% discount to end-2019 values, still reflecting the impact of COVID-19 in valuations, despite the oil storage industry not being directly affected by commodity price volatility. In this note we do not ascribe value to Phase III, due to the uncertainties around project development and financing strategy. However, we highlight there is potential for significant upside to our current $11.00/share valuation.

**17 August 2020**

| | |
|---|---|
| **Price** | **$9.7** |
| **Market cap** | **$1,065m** |

| | |
|---|---|
| Net debt ($m) at 31 December 2019 (including lease liabilities of $31m) | 100 |
| Shares in issue | 109.6m |
| Free float | 9.9% |
| Code | BROG |
| Primary exchange | NASDAQ |
| Secondary exchange | N/A |

### Share price performance


| % | 1m | 3m | 12m |
|---|---|---|---|
| Abs | 0.5 | (20.7) | (18.7) |
| Rel (local) | 6.0 | (6.3) | (3.4) |
| 52-week high/low | | $13.0 | $7.8 |

### Business description

Brooge Energy is an oil storage and service provider strategically located in the Port of Fujairah in the UAE. Current storage capacity stands at 399,324m$^3$ and will be increased by 602,064m$^3$ once Phase II is completed.

### Next events

| | |
|---|---|
| Phase III FEED completion | H220 |
| Phase II start-up | Q420/Q121 |
| BIA refinery start-up | Q321 |

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# Investment summary

## Company description: Strategic storage by the Strait of Hormuz

Brooge Energy is an independent crude oil and refined oil products storage and service provider strategically located just outside the Strait of Hormuz, in the Port of Fujairah in the UAE. BPGIC Terminal provides fast order processing times and high accuracy blending services increasing profitability. The company currently operates 14 oil storage tanks with an aggregate oil storage capacity of 399,324m$^3$ (c 2.5mmbbl) and expects to increase its storage capacity by 602,064m$^3$ (c 3.8mmbbl) by the end of 2020, making it one of the biggest storage players in the Port of Fujairah.

## Valuation: Additional value beyond Phase II

Edison's valuation of BROG is based on a blend of DCF, and FY21e P/E and EV/EBITDA multiples. BROG currently trades at an FY21e P/E of 12.3x relative to its peers on 10.9x, and 10.9x FY21e EV/EBITDA relative to peers on 8.6x. We believe this premium is attributed to BROG's growing momentum, efficient operations and the impact of COVID-19 on the majority of BROG's peers. BROG's peers are mostly North American companies that, in addition to storage terminals, also own pipeline networks or distribution infrastructure. This sector has been directly affected by COVID-19 as oil demand decreased. Peers are trading at c 40% discounts versus early 2018, and at c 30% discounts since early 2020. However, BROG's closest oil storage peer, Vopak, like BROG has seen its share price trade broadly flat since the beginning of the year. In this note we do not take into consideration the impact of Phase III in our valuation, due to current uncertainties around project development and financing; however we highlight there is potential significant upside and we will be updating our valuation as new developments take place.

## Financials: Fixed fee for storage services

BROG recorded FY19 adjusted EBITDA of c $37m. We expect FY20 revenue to remain in line with the previous year, and to ramp-up when Phase II begins operations. We forecast FY21 adjusted EBITDA of c $113m. Around 54% of the company's FY19 revenues were based on fixed price contracts for storage services, with the remainder from ancillary services. Ancillary services revenue may vary, and depends on the end user needs; consequently, there is significant uncertainty in precise forecasts of this revenue stream. However, we expect operations to remain broadly in line with the last two years of operations. The company is relatively unlevered, with total debt at year-end 2019 of $119m through a number of term loans, and net debt of $100m. On 10 August 2020, BROG announced that it was pursuing the issuance of a new five-year Nordic bond which would consolidate debt for Phase I and II in a single facility. We estimate BROG will become net cash positive in FY22, under the assumption that management will direct capital to debt reduction and growth opportunities, such as Phase III, deferring shareholder returns.

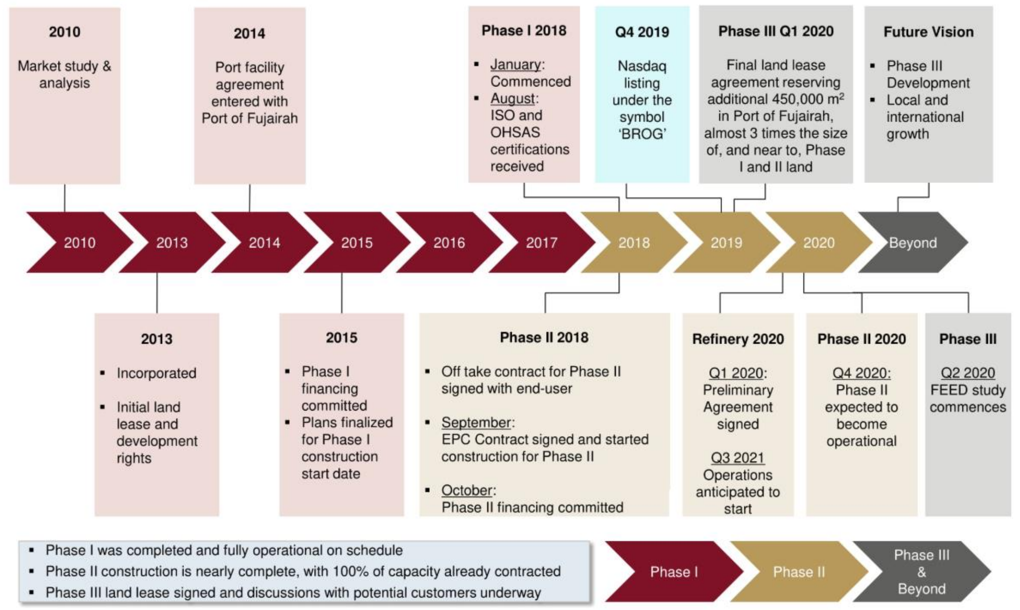
## Risks and sensitivities

The main sources of potential risks are developments in the global economy and their impact on global supply and demand for oil products. The COVID-19 outbreak and efforts to contain it have affected the global economy and market valuations of midstream/oil storage companies. COVID-19 related restrictions might also affect construction of Phase II, and consequently BROG's operating and financial results. Most of BROG's capacity is contracted to Al Brooge International Advisory (BIA), which represents a concentration risk in the event BROG needs to seek new customers. BROG also failed to make certain payments and comply with certain covenants in 2019 and early 2020 that could qualify as a technical default under its debt agreements. However, the company has been able to agree on a new payment schedule with the debtholder First Abu Dhabi Bank PJSC (FAB).

## Aiming to be the largest storage provider in Fujairah

BROG is an oil storage and service provider strategically located in the Port of Fujairah in the UAE. BROG's wholly owned subsidiary BPGIC was initially incorporated in 2013, the same year the Fujairah Free Zone Authority provided the company with a licence to engage in trading and storing crude oil and oil products. BPGIC initially aimed to develop its storage terminal in two phases. Phase I has a storage capacity of 399,324m$^3$, and has been operational since December 2017, and Phase II, currently under construction, will provide additional 602,064m$^3$ of storage capacity. BROG is also negotiating with BIA the construction of a 25,000bbld low sulphur oil modular refinery to be brought online in Q321. BIA would build and own the refinery, and BROG would operate it.

**Exhibit 1: BROG history**

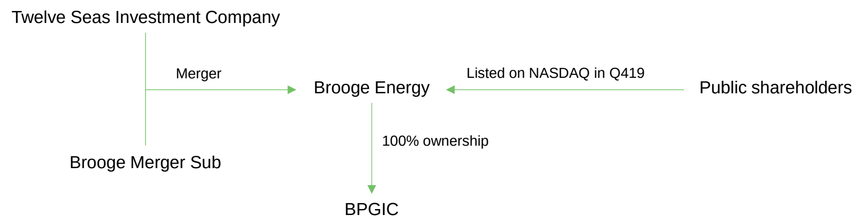



Source: BROG

Given the company's ambition to expand its footprint in the Port of Fujairah by developing Phase III, with an estimated storage capacity 3.5x bigger than Phase I and Phase II, at 3,500,000m$^3$, and a 180,000bbld refinery, and potentially expand across different geographies, BROG initiated a process to make the company public and reach a broader number of investors. Phase III will be transformational to BROG and the company estimates a capital investment of c $1.1bn will be required to proceed with the development.

In 2019, the company merged with Twelve Seas Investment Company (a blank cheque company formed to effect a merger with one or more businesses) and brought the company public later that year. Given BROG's business size and type of industry, the company chose to list on NASDAQ where multiple midstream companies and storage providers trade and where the investment community has a deep knowledge of the business and keeps track of the latest developments.

**Exhibit 2: BROG corporate structure**




Source: Edison Investment Research

$32.6m was raised during the merger with Twelve Seas and subsequent listing and, based on the terms of the transaction, this means that c 85% of BROG's equity is owned by BPGIC. Of the remaining 15% a substantial portion of the equity is held by employees with only 9.9% of the overall equity effectively as free float.

BROG's vision is to develop an oil storage business that differentiates itself from competitors by providing fast order processing times, and high accuracy blending services with low oil losses. To achieve this, the company has been led by a management team with over 30 years of experience in the oil storage terminal industry, with Nicolaas Paardenkooper at the helm.

**Exhibit 3: BPGIC Terminal overview**

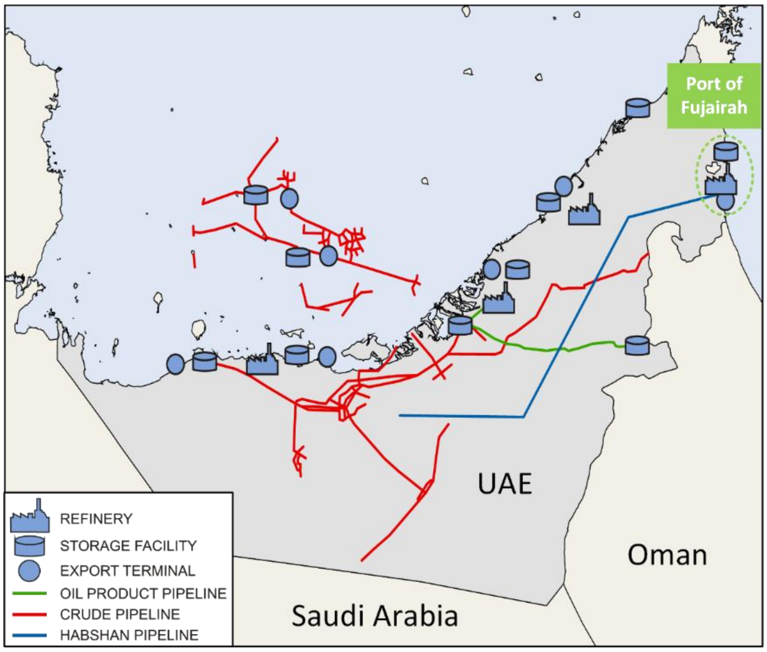
| | Phase I | Phase II | Phase III |
|---|---|---|---|
| Status | Operational | Q420e | tbd |
| Tanks | 14 | 8 | tbd |
| Total storage ($m^3$) | 399,324 | 602,064 | 3,500,000 |
| Products | Fuel oil, clean products | Fuel oil, clean products, crude oil | Fuel oil, clean products, crude oil |
| Flow rate ($m^3$/h) | 4,500 | 16,000 | 16,000 |

Source: BROG

## Strategic location outside the Strait of Hormuz

BPGIC Terminal is located in the Port of Fujairah, which is the main bunkering location in the Middle East and North Africa (MENA) region and the second largest bunkering hub in the world. The Port of Fujairah is located just outside the Strait of Hormuz, and allows oil traders to bypass the strait, which is one of world's most vulnerable chokepoints given that c 20% of the world's seaborne oil and oil products pass through it each year; the EIA reported in 2018 that the strait's daily oil flow averaged 21mmbod, c 21% of global petroleum liquids consumption. There is an increasing preference among companies to avoid sending their vessels through the Strait of Hormuz due to geopolitical risk, higher transportation costs due to increased insurance costs as well as congestion and queuing times at ports inside the Persian Gulf. The Habshan-Fujairah 1.5mmbbld crude oil pipeline was inaugurated in 2012, giving oil companies the ability to send crude oil from Abu Dhabi directly to Fujairah and, from there, to the Indian Ocean.

**Exhibit 4: UAE pipeline network and terminals**

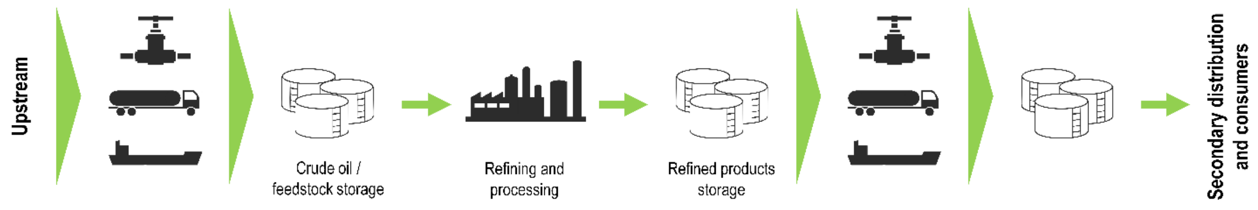



Source: BROG

# Oil storage facilities play a vital role in the oil industry

Storage facilities play a vital role in the business of crude oil and oil products. They serve as a logistical midstream link between the upstream (exploration and production) and the downstream (refining) segments of the oil industry. They are used to store primary, intermediate and end products and facilitate a continuous supply of feedstocks to refineries and chemical plants in the processing industry on the one hand and absorb fluctuations in sales volumes on the other. Each change in the mode of transport requires temporary storage capacities, ie terminals with tank storage facilities. An efficient oil logistics chain would be inconceivable without such infrastructure.

**Exhibit 5: Oil storage activities**




Source: Edison Investment Research

The oil and oil products storage business has evolved from its beginnings as a component of an integrated production and transportation process, into a mature, stand-alone operation. Many major energy companies and traders own and operate terminal storage facilities to help integrate their upstream or downstream assets into the marketplace. Although such terminals often have the same basic capabilities as terminals owned by independent operators such as BROG, they generally do not provide storage to third parties. Independent storage providers have more flexibility and can adjust to prevailing market conditions as their storage is made accessible to the open market for third-party usage. Tank storage terminals can generally be classified into:

- **Hub terminals:** Located near the major oil hubs (Amsterdam-Rotterdam-Antwerp (ARA), Houston, Singapore and UAE) where high-volume product flows intersect. BROG is located in the Port of Fujairah, which is the second largest bunking hub in the world.
  - The ARA Terminal consists of 68 terminals with a total capacity of c 36,000,000m$^3$. Based on capacity the most relevant players are Vopak, Koole, VTTI and Oiltanking.
  - The Port of Houston has 52 terminals with a capacity of c 29,000,000m$^3$. The main players are Kinder Morgan, Enterprise Products and Magellan Midstream.
  - Singapore has 21 terminals with a total capacity of c 16,000,000m$^3$. The biggest players are Vopak, Oiltanking and Universal Group.
  - The UAE has 61 terminals with a capacity of 18,500,00m$^3$. The current main players are Vopak, ADNOC and Horizon Terminals.
- **Import/export terminals:** Used for storing products that are exported or imported by local companies and distributed on the domestic market.
- **Industrial terminals:** Designed as a component of larger complexes of the chemicals industry.

## Drivers of demand

The main demand driver for the tank storage industry is the development of the (seaborne) transport volume of oil and oil products. The volume handled is determined by the total consumption and/or the processing volume of crude oil and oil products, which in particular is influenced by trade flows. Oil consumption growth has been very strong in the UAE since 2008, growing at an annual average rate of c 5%, based on data from the BP Statistical Review of World Energy 2019.

Storage capacity additions are driven by market structure (contango versus backwardation) and do not exhibit a strong correlation with spot oil prices. In a contango scenario (future prices expected to be higher than current prices), if the spread between these prices is large enough to cover storage, finance and shipping costs, a trader is able to make a profit by buying oil now and selling it on the futures market for a later delivery. However, in order to capitalise on this profit, a trader needs storage (and transport) capacity. In this scenario, storage rates tend to increase, but the fees from ancillary services, like blending and heating, might fall due to lower utilisation of these services. In a backwardation scenario (future expected rates are lower than current rates), storage rates tend to fall, but are balanced by higher ancillary fees as utilisation of ancillary services is expected to rise.

**2020 put a spotlight on the importance of oil storage**

Just a few months into 2020, the coronavirus pandemic eroded oil and oil products demand as billions of people globally were facing government lockdowns and travel restrictions. This situation was heightened when Russia and Saudi Arabia could not agree terms regarding the degree of production cuts required to stabilise the fall in oil prices, and Russia stepped out of the OPEC+ alliance. This resulted in Saudi Arabia selling its crude with high discounts to its international customers, which triggered a free fall of oil prices and resulted in a super contango. The EIA estimates that global oil consumption decreased from c 100mmbbld at the end of 2019 to c 85mmbbld in Q220. As oil companies continued to produce, the resulting oversupply led to a surge in demand for third-party storage capacity, resulting in high occupancy rates in the major hubs putting a premium on free tank capacity. BROG was able to secure a contract with Total's wholly owned subsidiary Totsa Total Oil Trading SA during this period. With market dynamics stabilising, as economies re-open and demand picks up, alongside production cutbacks from OPEC+, oil trading and the storage businesses should also stabilise.

## BROG's competitive advantages

BROG operates the BPGIC Terminal under a 60-year lease of land, acquired in 2013, for its operations located in close proximity to the Port of Fujairah's berth connection points. This has allowed BROG to design and build a terminal for long-term use by using equipment including pumps, valves and steel structures that have longer expected life spans than comparable materials utilised by other oil storage terminals in the MENA region.

### Phase I came online in December 2017

Phase I comprises 14 oil storage tanks with an aggregate oil storage capacity of 399,324m$^3$, c 2.5mmbbl, and was constructed by Audex, an EPC contractor with over 20 years of experience in the industry. BROG's aim in developing the terminal was to create a new standard for oil storage tank terminals by designing a terminal that would reduce user oil losses and achieve better blending results than existing oil storage tank terminals. BROG designed Phase I with several key features that enable it to provide users with high-accuracy blending services with low oil losses. The operations of Phase I are focused primarily on the storage, heating and blending of fuel oil and clean petroleum products, including aviation fuel, gas oil, gasoline, marine gas oil and naphtha.

BROG commenced operations with limited availability to ensure a safe and efficient start-up of operations. From the time the company began its operations in December 2017 to March 2018, storage capacity was limited to 40%, allowing management to test all systems and make any necessary adjustments. BROG increased the availability of its storage capacity to c 70% on 1 March 2018, and to 100% on 1 April 2018. In 2019, Phase I generated $44m of revenues and adjusted EBITDA of $37m.

## Phase II is expected to be completed by the end of 2020

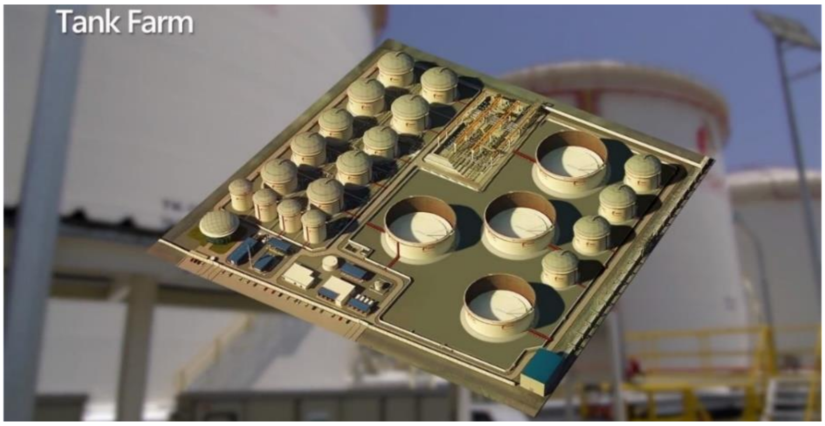
Phase II, for which the EPC was also awarded to Audex, is currently under construction and is expected to focus primarily on the storage and blending of crude oil, diversifying the terminal's storage offer. Phase II will involve eight additional oil storage tanks with an aggregate oil storage capacity of 602,064m$^3$, or c 3.8mmbbl, which will increase BROG's aggregate oil storage capacity to 1,001,388m$^3$, or c 6.3mmbbl. Project development commenced in September 2018 and is expected to be completed by the end of 2020. Phase II is being constructed adjacent to Phase I.

The expected capital expenditure for Phase II is $160.6m, which is comprised of construction costs of $150.0m and capitalised interest and land lease and consultancy charges of $10.6m. This will be funded by drawings of $90.6m under the Phase II financing facility, and shareholders' contributions and internally generated cash flow of $70.0m. Of the $160.6m expected capital expenditure for Phase II, $39.2m was paid in FY19. By June 2020, another $24.8m had been paid.

## 25,000bbld low sulphur content refinery

On the remaining land available under the BPGIC Terminal Land Lease, the company intends to incorporate a low sulphur content modular refinery. In March 2019, BROG partnered with Sahara Energy Resources to develop and operate a modular refinery within the BPGIC Terminal with minimal capital expenditure by BROG. Under the terms of the Refinery and Services Agreement, Sahara would finance and develop, construct and commission the refinery. However, in February 2020, BROG and Sahara mutually agreed to discontinue their joint development and BROG entered into a new Refinery Agreement with BIA. The parties further agreed to negotiate the Refinery Operations Agreement, a sublease agreement and a joint venture agreement to govern the terms on which BROG will sublease land to BIA, BIA will construct, and BROG will operate the refinery. Due to COVID-19, the parties agreed to extend the period for their negotiations until 4 August 2020. BROG has not given an update on these negotiations since the passing of this date.

**Exhibit 6: BPGIC Terminal schematic**




Source: BROG. Note: Phase I 14 tanks on the left and Phase II 8 tanks (4 + 4) on the right

Management estimates annualised revenues from Phase I, Phase II and the low sulphur oil refinery will amount to $130m and generate $128m of EBITDA.

## Stable and predictable revenue stream from storage services

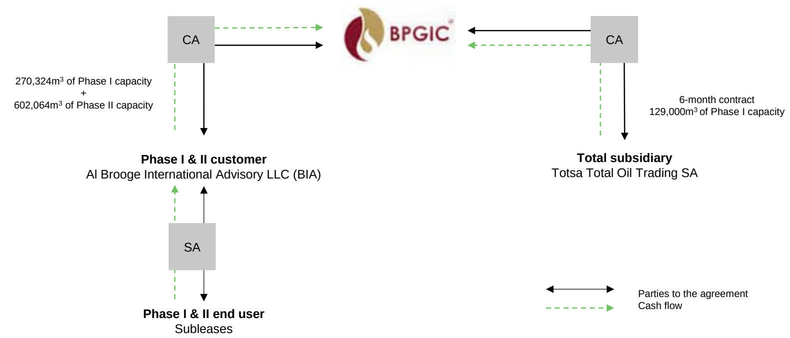
In August 2019, BROG entered into the Phase I Customer Agreement to restructure its relationship with the Phase I end user, BIA. Pursuant to the Phase I Customer Agreement, BROG leases the Phase I facility to the Phase I and II customer, BIA. Under the Customer Agreement, BROG generates stable and predictable cash flows for its storage services by providing fee-based, take-or-pay storage services to the Phase I and II customer.

The Phase I and II customer is required to pay:

- a monthly take-or-pay fixed storage fee to lease all of the storage capacity,
- monthly variable ancillary service fees for throughput, blending, heating and tank transfers, and
- any additional fees charged by the Port of Fujairah in connection with customer activities.

Because the Phase I and II customer subleases the facility to the Phase I and II end users, BROG's monthly revenue for ancillary services depends on the extent to which the Phase I and II end user utilises the ancillary services. Notwithstanding the sublease, the Phase I and II customer's obligation to pay both the monthly fixed storage fee and the ancillary services fees to BROG is independent of the Phase I end user's obligation to pay, and actual payment to, the Phase I and II customer. In May 2020, BIA agreed to release 129,000m$^3$ of the Phase I capacity back to the company. BROG leased this capacity to Totsa Total Oil Trading for a six-month period subject to renewal for an additional six-month period by mutual agreement of the parties.

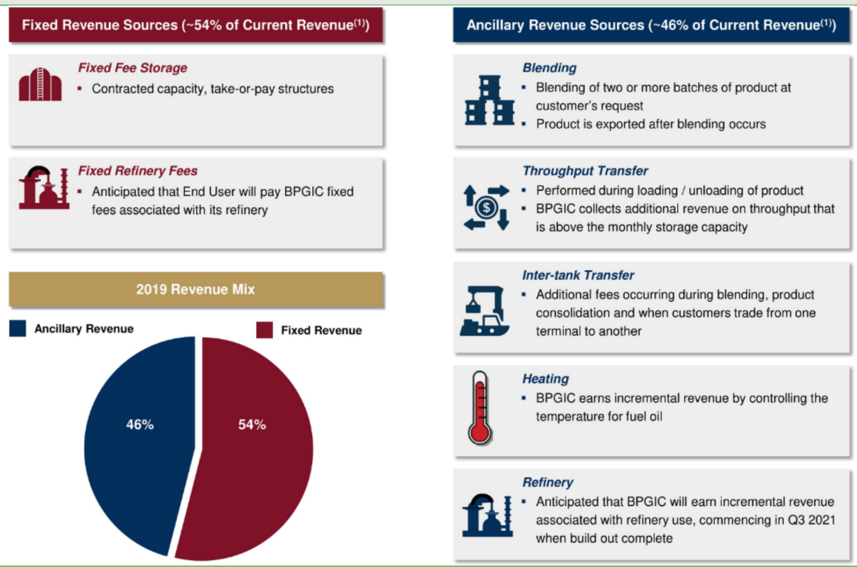
**Exhibit 7: BPGIC Terminal commercial framework**




Source: BROG, Edison Investment Research. Note: CA – Customer Agreement, SA – Services Agreement

The Phase I Customer Agreement is for an initial period of four years with a renewal period of five years. The Phase I Customer Agreement also provides that every two years, BROG may elect to review and seek to amend the storage fee and the ancillary services fees, and the outcome of this review can result only in either an increase in rates or no change. The terms of Phase II Customer Agreement are similar to Phase I, however the initial period is five years. In 2019, BROG generated 54% of its revenue from its take-or-pay monthly fees for storage services and 46% from ancillary services. These fees were, and are, owed to BROG regardless of the storage actually used.

**Exhibit 8: BROG's fixed and ancillary revenue streams**

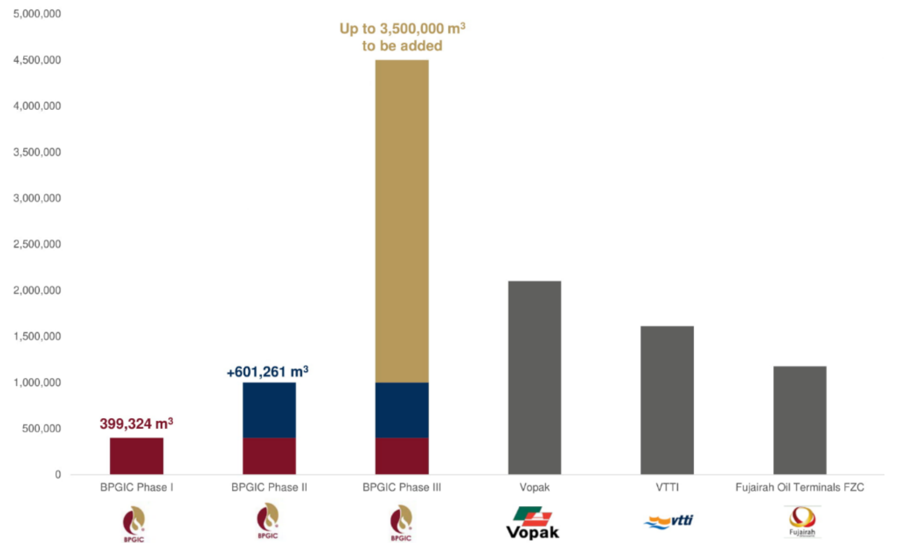



Source: BROG

## Assessing growth alternatives: Phase III and new geographies

BROG intends to initially focus on the Persian Gulf, with a strategy to ultimately expand across different geographies, expand its solution offerings and increase shareholder value. Within the Fujairah market, BROG is in the pre-FEED stages of pursuing a major expansion near its existing facilities, which it refers to as Phase III. In February 2020, BROG entered into the Phase III Land Lease Agreement to secure a new plot of land of approximately 450,000m$^2$, near its existing facilities. BROG currently intends to use the land to increase its capacity for crude oil storage and services and a 180,000bbld refinery. The company expects Phase III could be more than three times the size of the projected operations post-Phase II, at 3,500,000m$^3$ (c 22.0mmbbl), resulting in a total storage of 4,500,000m$^3$ (c 28.3mmbbl), and generate additional annualised revenues of $502m and EBITDA of $422m. Post Phase III, BROG is expected to be the largest storage provider in Fujairah. The company is in discussions with oil majors, which have expressed interest in securing portions of the capacity of a Phase III facility.

**Exhibit 9: BROG is expected to be the largest storage provider in Fujairah post-Phase III**




Source: BROG

## Board and management highlights

**Dr Yousef Alassaf, chairman**. Dr Alassaf joined BROG in October 2018. Dr Alassaf is also the president of the Rochester Institute of Technology (Dubai). Prior to this, Dr Alassaf held a range of other academic positions over the last 30 years, most recently as the dean of the College of Engineering at the American University of Sharjah (from 2006 to 2013), which he joined as an associate professor in 1991. Dr Alassaf started his academic career as a research and teaching assistant at Oxford University from 1985 to 1987. Dr Alassaf holds a BSc from Sussex University in electrical engineering, a PhD from Oxford University and completed the Executive Leadership Certificate Program from Cornell University in 2008.

**Nicolaas Paardenkooper, chief executive officer.** Mr Paardenkooper joined BROG in May 2017. Mr Paardenkooper has over 30 years of experience in the oil and gas mid and downstream sector. Prior to joining BROG, he was terminal manager at Oiltanking Odfjell Terminal, Oman, since October 2014. Prior to that, Mr Paardenkooper worked in various positions at Emirates National Oil Company from 2010 to 2014 (including as manager terminal UAE and operations manager) and worked for 21 years at Vopak in various roles. Mr Paardenkooper started his career in various nautical positions on several types of vessels, mainly tankers, and has a nautical and maritime educational background, complemented with dedicated oil and gas mid and downstream diplomas.

**Syed Masood, chief financial officer.** Mr Syed joined BROG in April 2020. Prior to joining BROG, Mr Syed worked with various local and regional banks and has extensive experience in corporate and institutional banking. He has experience in leading and managing independent treasury and banking functions in the Middle East, Africa and Europe. Mr Syed holds an MBA degree with a major in MIS from Newport University.

**Lina Saheb, chief strategy officer**. Ms Saheb joined BROG in 2013. Prior to joining BROG, Ms Saheb worked with the initial shareholders of BROG on many different ventures including the establishment of BROG in Fujairah in 2010. Ms Saheb has a bachelor's degree in software engineering from Mansour University, has completed a course in banking and finance from Emirates College of Technology and is pursuing a master's degree in international business law at Paris Sorbonne University Abu Dhabi, in the UAE.

## Risks and sensitivities

BROG is subject to several sector-specific and company-specific risks, which we highlight below.

- BROG is susceptible to general economic conditions such as the impact of COVID-19, which could adversely affect operating results. Governments in affected countries, including the UAE, have imposed travel bans, and other emergency public health measures. Even though oil storage operations have not been significantly affected, the current environment may result in delays in negotiations with counterparties and the construction of Phase II. The outbreak has already slowed down the economy. Such an adverse impact on the global economy may also negatively affect the availability of debt and equity financing on commercially reasonable terms, which, in turn, may adversely affect BROG's ability to successfully execute its business strategy for Phase III construction and global expansion.
- The usage of BROG's ancillary services has an impact on BROG's profitability. The demand for such ancillary services can be influenced by a number of factors including current or expected prices and market demand for refined petroleum products, each of which can be volatile.
- BROG is currently reliant on BIA for the majority of its revenues and any material non-payment or non-performance by BIA could have a material adverse effect on BROG's business, and short-term financial condition and results of operations.
- Accidents in the handling of oil products could disrupt business operations during any repair or clean-up period, which could negatively affect its business operations.
- All of BROG's operations are located in the Port of Fujairah. The port is located near an area of strategic economic and military importance for the entire region. While the UAE enjoys domestic political stability and generally healthy international relations, since early 2011 there has been political unrest in a range of countries in the MENA region, including severing diplomatic relations with Qatar. BROG's operations could be adversely affected or disrupted by terrorist attacks. The occurrence of any of such events at the BPGIC Terminal may affect operations and financial results given its operations' geographic concentration.

## Financials

Short-term financial forecasts will be driven by Phase I and Phase II storage and ancillary services revenue. In 2019, storage revenue accounted for c 54% of revenues, and we estimate the breakdown will remain at c 50% once Phase II becomes operational. The ancillary services revenue may vary, and depends on the end user needs. These needs tend to vary based on expected refinery product prices and trading activity. Consequently, there is significant uncertainty in precise forecasts of revenue and cash flows from the ancillary services. However, we expect BROG to generate positive free cash flow from FY21. The company is relatively unlevered, with its total debt as at 31 December 2019 being $119m, through a number of term loans, and net debt of $100m. We expect net debt to increase in 2020 as capital is being invested in Phase II, with $122m of the total capex of $160m to be employed in 2020 and early 2021. For FY20 we estimate revenue and EBITDA to be in line with FY19, standing at $45m and $38m respectively. Management guides that once Phase II and the refinery are online, annualised revenue and EBITDA could stand at c $130m and $128m respectively. We estimate Phase II coming online in the beginning of 2021 and the refinery in Q321. This results in our forecast FY21 revenue of $123m and EBITDA of $113m. As can be observed in Exhibit 10, in FY19 BROG registered a net loss of $77m. This was due to a one-time, non-recurring expense related to the listing on Nasdaq, which amounted to $102m ($98.6m is recorded as non-cash expenses in accordance with IFRS requirements).

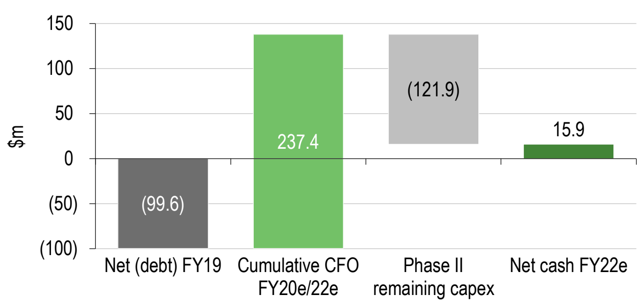
**Exhibit 10: Edison forecasts**

| $m | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Phase I** | | | | | |
| Fixed consideration – leasing component | 14.6 | 16.8 | 17.3 | 17.7 | 18.1 |
| Fixed consideration – service component | 6.2 | 7.1 | 7.3 | 7.5 | 7.7 |
| Ancillary services | 15.1 | 20.1 | 20.6 | 21.1 | 21.7 |
| **Phase II** | | | | | |
| Fixed consideration – leasing component | - | - | - | 26.7 | 27.3 |
| Fixed consideration – service component | - | - | - | 11.3 | 11.5 |
| Ancillary services | - | - | - | 31.8 | 32.6 |
| 25,000bbld refinery | - | - | - | 6.9 | 13.8 |
| **Total revenue** | **35.8** | **44.1** | **45.2** | **123.0** | **132.8** |
| Direct costs | 9.6 | 10.2 | 10.5 | 23.1 | 24.8 |
| **Adjusted EBITDA** | **29.9** | **37.1** | **38.0** | **113.3** | **122.6** |
| Adjusted EBIT | 24.2 | 31.3 | 32.1 | 97.1 | 105.2 |
| Finance costs | 7.0 | 5.7 | 15.1 | 10.7 | 10.7 |
| Net income/(loss) | 16.1 | (76.6) | 17.0 | 86.5 | 94.5 |

Source: BROG, Edison Investment Research

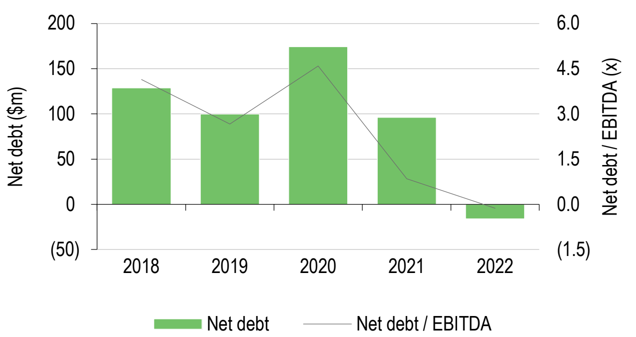
Below we look at a cash flow bridge, which highlights BROG's potential to generate cash. In Q419 the company announced it intended to pay a $0.25 quarterly dividend to shareholders from Q120. In the event, this was not paid as, in light of the economic impact of COVID-19, the board of directors determined that it was in the best interests of the company to prudently preserve cash and delay the issuance of dividends. Under the assumption that dividends will not be distributed in the near term, we see a decrease in the company's debt and it becoming cash positive in 2022.

**Exhibit 11: End FY19 to end FY22e cash flow bridge**




Source: Edison Investment Research

**Exhibit 12: Net debt and net debt/EBITDA estimates**




Source: Brooge Energy accounts, Edison Investment Research

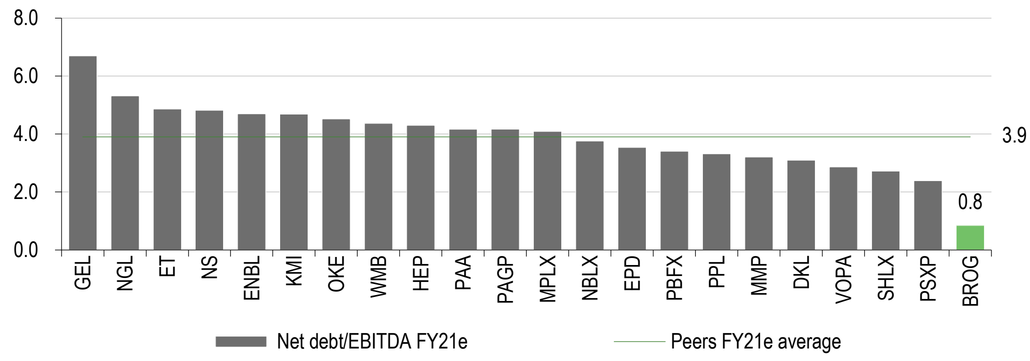
## Debt rescheduled and new bond issue planned

In June 2020, BROG entered into an agreement with its lender, FAB, to amend its Phase I Construction Facilities payment schedule. This followed a period of non-payments and non-compliance with covenants in 2019 and early 2020 while BROG negotiated more favourable terms with FAB. While these were technically events of default, FAB did not declare an event of default, pending the refinancing agreements.

On 10 August 2020, BROG announced that it was pursuing the issuance of a new five-year senior secured bond of up to $200m (with potential follow-on issuances of up to $125m) in the Nordic bond market. The net proceeds from the new bond issue are expected to repay existing debt facilities (including, we presume, the FAB facilities) and to fund remaining capital expenditures for Phase II, among other initiatives. We estimate that BROG will require peak net debt ahead of commissioning of Phase II of c $150m, hence we believe the new Nordic bond will comfortably fund all Phase II activities and give the company headroom to progress with Phase III preparatory work.

We believe BROG has been able to renegotiate its debt facilities due to its low leverage levels, especially compared to its peer group and the industry in which it operates. The certainty of cash flows from the storage services and the upside from the ancillary services revenues cover direct operating costs and the finance costs under the agreed schedule.

**Exhibit 13: Net debt/EBITDA (x) for FY21e for BROG and its peers**



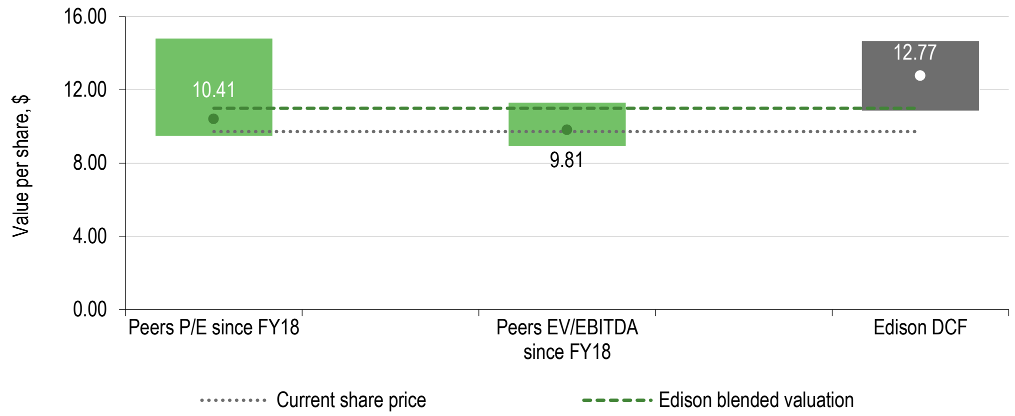

Source: Edison Investment Research, Refinitiv consensus estimates. Note: Prices at 11 August 2020.

# Valuation

We value BROG using a blend of DCF, and leveraged and unleveraged multiples, arriving at a valuation of $11.00/share. The key assumptions in our valuation include estimates of asset development costs, operational costs, and revenue and operating results for BPGIC Terminal Phase I and Phase II. We use publicly available sources for key assumptions including company guidance.

Even though the company achieved important milestones for Phase III this year by entering into the Phase III Land Lease Agreement with the Port of Fujairah, securing a total area of 450,000m$^2$, and completed basic design for the project, there is still significant uncertainty around timings and the project financing structure. Phase III will be transformational for BROG and will involve an investment of c $1.1bn; therefore, there is significant upside potential to the company's valuation. Once we have more clarity around these developments, and how they might be funded, we will update our valuation accordingly.

**Exhibit 14: BROG valuation based on historic peer multiples and Edison DCF**



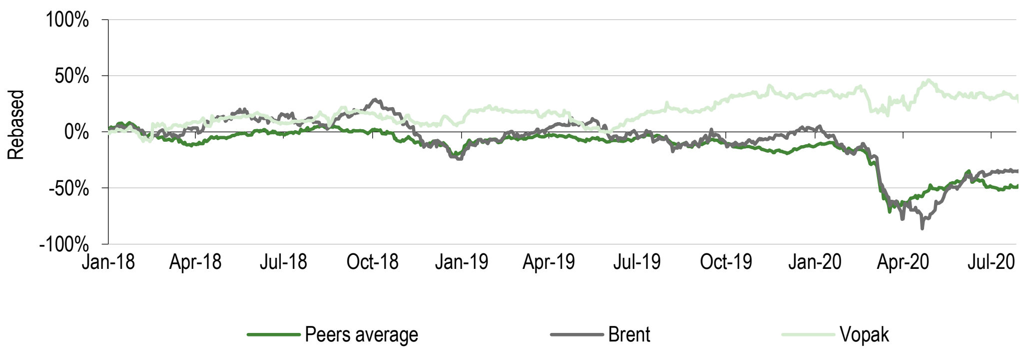

Source: Edison Investment Research. Note: Price as at 11 August 2020.

Our peer-based valuation of BROG is based on FY21 multiples instead of FY20. We believe the market is already attributing value to Phase II, which is expected to come online by the end of 2020, and therefore, for comparison purposes, FY21 numbers are more relevant. Due to recent market volatility we look at peers' metrics since FY18 to account for historical and actual valuations. The peer group average P/E from FY18 to date was 13.2x and for EV/EBITDA was 10.3x, both higher than current valuations for the peer group.

Under our assumptions for FY21, BROG currently trades at a P/E of 12.3x and an EV/EBITDA of 10.9x, ie at a discount to historical P/E metrics but at a slight premium to historical EV/EBITDA metrics. We believe the EV/EBITDA premium is due to BROG's low net debt/EBITDA.

Looking at the peer group on FY21e metrics (Exhibit 19), BROG trades at a premium on both metrics (peers currently trade at a FY21e P/E of 10.9x and an EV/EBITDA of 8.6x) and we believe the premium the market is attributing to BROG accounts for the fact that it is a growing company with efficient operations and significant expansion in the near future. We highlight that there is not an extensive list of listed midstream companies identical to BROG. Most peers are North American companies that, in addition to storage terminals, also own pipeline networks or distribution infrastructure, with recent valuations and earnings directly affected by COVID-19 as oil demand reduced and oil exports and trading decreased. Peers are trading at c 40% discounts versus early 2018, and at c 30% discounts since early 2020. Kinder Morgan reported a net loss of $637m in Q220 compared with a profit of $518m in Q219 as a consequence of reduced energy demand. Its second-quarter revenue declined by 20% to c $2.6bn and it wrote down the value of some pipelines by c $1bn. Exhibit 15 shows the impact of COVID-19 on the share prices of BROG's peers.

**Exhibit 15: Peer market value and Brent evolution since 2018**




Source: Edison Investment Research. Note: Prices as at 11 August 2020. Note: BROG, not shown above, commenced trading in Q419.

We believe the most similar peer to BROG is Dutch company Koninklijke Vopak. Even though Vopak is significantly bigger than BROG, in market value and storage capacity, the business model is more in line with BROG than the North American peers. Vopak has storage terminals in the most important global hubs, including the Port of Fujairah, and currently trades on FY21e EV/EBITDA of 11.3x and P/E of 15.2x, a significant premium to BROG. Similarly to BROG, Vopak's share price has largely held its value since the beginning of the year due to the nature of its business and the fact that it does not have pipeline transportation systems exposure. While BROG's share price increased 10% from the beginning of the year until 11 August 2020, Vopak's decreased 2%. The peer group valuation table can be found in Exhibit 19. We also highlight that all peers in this analysis already distribute dividends, for which most investors would attribute a certain premium.

Our DCF valuation is based on discounted cash flows to 2025, using an 8% cost of capital. We incorporate a terminal value, which assumes 2% terminal growth. The DCF reflects the impact of Phase II from assuming a conservative timing for start of operations at the beginning of 2021. The company expects to start operations before the end of 2020; however, COVID-19 related restrictions and a possible second wave could affect the start-up timings. We also assume the modular refinery to start operations in Q321 instead of Q121 for the same reasons. This results in a DCF valuation of $12.77/share. In Exhibit 16 we provide a sensitivity to the impact of varying costs of capital and terminal growth on the DCF valuation, and in Exhibit 17 the consequent impact in our blended valuation.

**Exhibit 16: DCF ($/share) sensitivity to terminal growth and WACC**

| Terminal growth/ WACC | 0% | 0.50% | 1.00% | 1.50% | 2.00% | 2.50% | 3.00% |
|---|---|---|---|---|---|---|---|
| **6%** | 14.48 | 15.53 | 16.77 | 18.30 | 20.21 | 22.67 | 25.94 |
| **7%** | 12.06 | 12.77 | 13.60 | 14.57 | 15.74 | 17.17 | 18.96 |
| **8%** | 10.26 | 10.76 | 11.33 | 12.00 | **12.77** | 13.68 | 14.78 |
| **9%** | 8.86 | 9.23 | 9.64 | 10.11 | 10.65 | 11.27 | 12.00 |
| **10%** | 7.74 | 8.02 | 8.33 | 8.68 | 9.07 | 9.51 | 10.01 |

Source: Edison Investment Research

**Exhibit 17: Blended valuation ($/share) sensitivity to terminal growth and WACC**

| Terminal growth/ WACC | 0% | 0.50% | 1.00% | 1.50% | 2.00% | 2.50% | 3.00% |
|---|---|---|---|---|---|---|---|
| **6%** | 11.57 | 11.92 | 12.33 | 12.84 | 13.48 | 14.30 | 15.39 |
| **7%** | 10.76 | 11.00 | 11.27 | 11.60 | 11.99 | 12.47 | 13.06 |
| **8%** | 10.16 | 10.33 | 10.52 | 10.74 | **11.00** | 11.30 | 11.67 |
| **9%** | 9.69 | 9.82 | 9.96 | 10.11 | 10.29 | 10.50 | 10.74 |
| **10%** | 9.32 | 9.41 | 9.52 | 9.63 | 9.76 | 9.91 | 10.08 |

Source: Edison Investment Research

Currently, there are a total of 21,228,900 warrants at an exercise price of $11.50. However, since our resulting blended valuation is below the warrants' exercise price, these are not being taken into consideration for our share count.

We also stress test the impact of lower revenues from ancillary services on our DCF valuation and consequently on our blended valuation given the less predictable growth around this revenue stream relative to the fixed price storage business and tolling fee from the refinery. Below we provide a sensitivity to realised ancillary revenues at 25%, 50% and 75% below our base case forecasts in our valuation and the impact of the extreme case of no revenues from ancillary services.

**Exhibit 18: Impact of reduced ancillary revenues on BROG valuation**

| $/share | Base case | -25% ancillary revenue | -50% ancillary revenue | -75% ancillary revenue | No ancillary revenue |
|---|---|---|---|---|---|
| BROG valuation | **11.00** | 10.28 | 9.53 | 8.71 | 7.81 |

Source: Edison Investment Research

**Exhibit 19: Peer group valuation table**

| | Market cap ($m) | EV ($m) | P/E FY20e (x) | P/E FY21e (x) | EV/EBITDA FY20e (x) | EV/EBITDA FY21e (x) | P/CF FY20e (x) | P/CF FY21e (x) | FCF yield FY20e (%) | FCF yield FY21e (%) | Net debt/ EBITDA FY20e (x) | Net debt/ EBITDA FY21e (x) | Dividend yield FY20e (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Edison estimates – BROG** | **1,065** | **1,239** | **62.8** | **12.3** | **32.6** | **10.9** | **46.5** | **10.4** | **-7.0%** | **7.3%** | **4.6** | **0.8** | **0.0%** |
| **Peer group average** | **9,966** | **22,837** | **2.9** | **10.9** | **8.9** | **8.6** | **5.8** | **5.5** | **13.3%** | **18.1%** | **4.2** | **4.0** | **11.1%** |
| Delek Logistics Partners LP | 982 | 1,915 | 9.0 | 7.9 | 8.8 | 7.2 | 6.7 | 6.6 | 7.5% | 15.8% | 3.8 | 3.1 | 11.0% |
| Enable Midstream Partners LP | 2,521 | 7,278 | 9.9 | 10.2 | 7.6 | 7.8 | 3.8 | 4.1 | 19.1% | 21.5% | 4.6 | 4.7 | 10.7% |
| Energy Transfer LP | 17,604 | 82,583 | 10.3 | 5.8 | 7.9 | 7.9 | 3.0 | 2.9 | 16.4% | 23.5% | 4.9 | 4.9 | 18.7% |
| Enterprise Products Partners LP | 39,761 | 69,138 | 8.9 | 9.6 | 8.9 | 9.0 | 6.4 | 6.5 | 7.4% | 8.9% | 3.5 | 3.5 | 9.8% |
| Genesis Energy LP | 799 | 5,125 | (121.9) | 17.7 | 8.7 | 8.2 | 3.1 | 2.5 | 23.7% | 31.2% | 7.1 | 6.7 | 16.2% |
| Holly Energy Partners LP | 1,619 | 3,277 | 8.5 | 8.0 | 9.7 | 9.3 | 6.0 | 5.5 | 14.8% | 17.0% | 4.5 | 4.3 | 9.1% |
| Kinder Morgan Inc | 32,640 | 67,700 | 19.4 | 15.4 | 9.8 | 9.5 | 7.7 | 7.0 | 10.4% | 11.7% | 4.8 | 4.7 | 7.4% |
| Koninklijke Vopak NV | 7,099 | 10,140 | 16.3 | 15.2 | 11.9 | 11.3 | 9.8 | 9.4 | 4.1% | 5.9% | 3.0 | 2.9 | 3.0% |
| Magellan Midstream Partners LP | 9,209 | 13,999 | 11.1 | 10.0 | 10.5 | 9.7 | 8.8 | 7.9 | 8.7% | 9.6% | 3.5 | 3.2 | 10.0% |
| MPLX LP | 20,466 | 42,781 | (21.4) | 8.4 | 8.6 | 8.5 | 5.8 | 5.3 | 15.1% | 16.3% | 4.2 | 4.1 | 14.2% |
| NGL Energy Partners LP | 563 | 4,597 | 47.8 | 16.4 | 8.1 | 7.8 | 2.1 | 2.0 | 29.3% | 39.6% | 5.5 | 5.3 | 18.3% |
| Noble Midstream Partners LP | 891 | 2,991 | 3.6 | 4.8 | 7.7 | 7.6 | 2.8 | 3.0 | 20.3% | 29.6% | 3.8 | 3.8 | 10.0% |
| NuStar Energy LP | 1,688 | 6,403 | (19.2) | 19.6 | 9.1 | 9.1 | 6.0 | 5.5 | 7.0% | 5.0% | 4.8 | 4.8 | 10.3% |
| ONEOK Inc | 13,339 | 26,678 | 11.9 | 10.9 | 10.3 | 9.5 | 7.4 | 6.4 | 3.3% | 12.2% | 4.9 | 4.5 | 12.5% |
| PBF Logistics LP | 686 | 1,433 | 4.7 | 4.8 | 6.2 | 6.4 | 3.9 | 3.9 | 22.2% | 23.0% | 3.3 | 3.4 | 12.2% |
| Pembina Pipeline Corp | 14,584 | 25,496 | 17.1 | 15.0 | 10.4 | 10.1 | 9.2 | 8.7 | 6.1% | 7.6% | 3.4 | 3.3 | 5.3% |
| Phillips 66 Partners LP | 6,508 | 11,259 | 7.8 | 7.7 | 9.2 | 8.3 | 7.0 | 6.7 | 3.3% | 6.2% | 2.6 | 2.4 | 12.1% |
| Plains All American Pipeline LP | 5,963 | 18,480 | 15.5 | 6.5 | 7.4 | 8.0 | 3.6 | 4.1 | 18.8% | 23.5% | 3.9 | 4.2 | 9.6% |
| Plains GP Holdings LP | 1,564 | 21,432 | (11.3) | 7.8 | 8.7 | 9.3 | 4.3 | 3.1 | 20.5% | 49.4% | 3.9 | 4.2 | 9.1% |
| Shell Midstream Partners LP | 4,810 | 6,159 | 9.2 | 8.0 | 7.6 | 6.9 | 6.8 | 6.4 | 13.7% | 15.4% | 3.0 | 2.7 | 15.0% |
| Williams Companies Inc | 25,994 | 50,713 | 24.2 | 20.1 | 10.2 | 10.1 | 8.2 | 8.0 | 8.0% | 7.9% | 4.4 | 4.4 | 7.5% |
| **Total average** | **9,562** | **21,855** | **5.6** | **11.0** | **10.0** | **8.7** | **7.7** | **5.7** | **12.4%** | **17.6%** | **4.2** | **3.9** | **10.6%** |

Source: Edison Investment Research, Refinitiv estimates. Note: Prices at 11 August 2020.

**Exhibit 20: Financial summary**

| $m | 2018 | 2019 | 2020e | 2021e | 2022e |
|---|---|---|---|---|---|
| **Year-end: 31 December** | IFRS | IFRS | IFRS | IFRS | IFRS |
| **PROFIT & LOSS** | | | | | |
| Revenue | 36 | 44 | 45 | 123 | 133 |
| Cost of Sales | (10) | (10) | (10) | (23) | (25) |
| Gross Profit | 26 | 34 | 35 | 100 | 108 |
| EBITDA | 30 | (65) | 38 | 113 | 123 |
| Adjusted EBITDA | 30 | 37 | 38 | 113 | 123 |
| Operating Profit (before amort. and except.) | 24 | 31 | 32 | 97 | 105 |
| Intangible Amortisation | 0 | 0 | 0 | 0 | 0 |
| Exceptionals | 0 | (102) | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 |
| Operating Profit | 24 | (70) | 32 | 97 | 105 |
| Net Interest | (8) | (6) | (15) | (11) | (11) |
| Profit Before Tax (norm) | 16 | 25 | 17 | 86 | 95 |
| Profit Before Tax (FRS 3) | 16 | (77) | 17 | 86 | 95 |
| Tax | 0 | 0 | 0 | 0 | 0 |
| Profit After Tax (norm) | 16 | 25 | 17 | 86 | 95 |
| Profit After Tax (FRS 3) | 16 | (77) | 17 | 86 | 95 |
| Average Number of Shares Outstanding (m) | 80.0 | 88.1 | 109.6 | 109.6 | 109.6 |
| EPS – normalised (c) | 0.0 | 0.03 | 0.02 | 0.08 | 0.09 |
| EPS – normalised and fully diluted (c) | 0.0 | 0.0 | 0.02 | 0.08 | 0.09 |
| EPS – (IFRS) (c) | 0.0 | (0.09) | 0.02 | 0.08 | 0.09 |
| Dividend per share (c) | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Gross Margin (%) | 73.2 | 76.9 | 76.9 | 81.2 | 81.3 |
| EBITDA Margin (%) | 83.5 | -146.8 | 84.1 | 92.1 | 92.3 |
| Operating Margin (before GW and except.) (%) | 67.5 | 70.9 | 70.9 | 79.0 | 79.2 |
| **BALANCE SHEET** | | | | | |
| Fixed Assets | 198 | 285 | 376 | 385 | 367 |
| Intangible Assets | 0 | 0 | 0 | 0 | 0 |
| Tangible Assets | 198 | 263 | 355 | 363 | 346 |
| Investments | 0 | 22 | 22 | 22 | 22 |
| Current Assets | 2 | 22 | 3 | 3 | 64 |
| Stocks | 0 | 0 | 0 | 0 | 0 |
| Debtors | 2 | 2 | 2 | 2 | 2 |
| Cash | 0 | 20 | 0 | 0 | 61 |
| Other | 0 | 0 | 0 | 0 | 0 |
| Current Liabilities | (111) | (79) | (79) | (79) | (79) |
| Creditors | (10) | (63) | (63) | (63) | (63) |
| Short term leases | (2) | (2) | (2) | (2) | (2) |
| Short term borrowings | (99) | (15) | (15) | (15) | (15) |
| Long Term Liabilities | (28) | (103) | (158) | (79) | (29) |
| Long term borrowings | 0 | (74) | (129) | (51) | (0) |
| Long term leases | (28) | (29) | (29) | (29) | (29) |
| Other long term liabilities | (0) | (0) | (0) | (0) | (0) |
| Net Assets | 61 | 125 | 142 | 229 | 323 |
| **CASH FLOW** | | | | | |
| Operating Cash Flow | 28 | 53 | 23 | 103 | 112 |
| Net Interest | 0 | 0 | 0 | 0 | 0 |
| Tax | 0 | 0 | 0 | 0 | 0 |
| Capex | (0) | (60) | (98) | (24) | 0 |
| Acquisitions/disposals | 0 | 0 | 0 | 0 | 0 |
| Financing | (36) | 30 | 0 | 0 | 0 |
| Dividends | 0 | 0 | 0 | 0 | 0 |
| Net Cash Flow | (8) | 24 | (75) | 78 | 112 |
| Opening net debt/(cash) | 121 | 129 | 100 | 174 | 96 |
| HP finance leases initiated | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 6 | 0 | 0 | 0 |
| Closing net debt/(cash) | 129 | 100 | 174 | 96 | (16) |
| Closing net debt/(cash) excluding financial leases | 99 | 69 | 144 | 65 | (47) |

Source: BROG accounts, Edison Investment Research

## Appendix A

Phase I has 14 oil storage tanks, which are capable of storing clean oil products. Each of the oil storage tanks has been designed to allow fast and efficient cleaning, which permits efficient conversions from storing one product to another.

**Exhibit 21: Key attributes of Phase I 14 oil storage tanks**

| Tank | Capable of servicing* | Diameter (m) × height (m) | Blending capability | Roof type** | Tank heating capability | Geometric capacity (m³) | Max capacity (m³) |
|---|---|---|---|---|---|---|---|
| **101** | GO/FO | 42 × 30 | Yes | AGDR | Yes | 41,563 | 40,207 |
| **102** | GO/FO | 42 × 30 | Yes | AGDR | Yes | 41,563 | 40,207 |
| **103** | GO/FO | 42 × 30 | Yes | AGDR | Yes | 41,563 | 40,207 |
| **104** | GO/FO | 42 × 30 | Yes | AGDR | Yes | 41,563 | 40,207 |
| **105** | Gasoline/AF/GO/MGO/Naphtha/ Pygas/Reformate | 36 × 30 | Yes | AGDR with IFR | Yes, but not currently enabled | 30,536 | 29,031 |
| **106** | Gasoline/AF/GO/MGO/Naphtha/ Pygas/Reformate | 36 × 30 | Yes | AGDR with IFR | Yes, but not currently enabled | 30,536 | 29,031 |
| **107** | Gasoline/AF/GO/MGO/Naphtha/ Pygas/Reformate | 36 × 30 | Yes | AGDR with IFR | Yes, but not currently enabled | 30,536 | 29,031 |
| **108** | Gasoline/AF/GO/MGO/Naphtha/ Pygas/Reformate | 36 × 30 | Yes | AGDR with IFR | Yes, but not currently enabled | 30,536 | 29,031 |
| **109** | Gasoline/AF/GO/MGO/Naphtha/ Pygas/Reformate | 36 × 30 | Yes | AGDR with IFR | No | 30,536 | 29,031 |
| **110** | Gasoline/AF/GO/MGO/Naphtha/ Pygas/Reformate | 36 × 30 | Yes | AGDR with IFR | No | 30,536 | 29,031 |
| **111** | Gasoline/AF/GO/Naphtha/Pygas/ Reformate/CS | 23 × 30 | Yes | AGDR | No | 12,464 | 11,850 |
| **112** | Gasoline/AF/GO/Naphtha/Pygas/ Reformate/CS | 23 × 30 | Yes | AGDR | No | 12,464 | 11,850 |
| **113** | MTBE/Gasoline/AF/GO/Naphtha/ Pygas/Reformate | 23 × 30 | Yes | AGDR with IFR | No | 12,464 | 11,850 |
| **114** | MTBE/Gasoline/AF/GO/Naphtha/ Pygas/Reformate | 23 × 30 | Yes | AGDR with IFR | No | 12,464 | 11,850 |
| **Total** | | | | | | **399,324** | **382,414** |

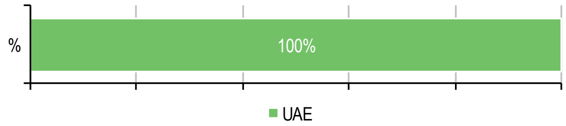
Source: BGPIC. Note: *All the oil storage tanks are convertible and can be cleaned and converted to service other oil products; GO means gas oil; FO means fuel oil; AF means aviation fuel; MGO means marine gas oil; CS means cutter stock; MTBE means methyl tertiary-butyl ether. **AGDR means aluminium geodesic dome roof; AGDR with IFR means aluminium geodesic dome roof with internal floating roof.

Phase II has eight oil storage tanks. Each of the oil storage tanks has been designed to allow fast and efficient cleaning, which permits efficient conversions from storing one product to another.

**Exhibit 22: Key attributes of Phase II eight oil storage tanks**

| Tank | Capable of servicing | Diameter (m) × height (m) | Blending capability | Roof type* | Tank heating capability | Geometric capacity (m³) | Max capacity (m³) |
|---|---|---|---|---|---|---|---|
| **201** | Crude oil | 70 × 28 | Yes | EFRT | No | 107,756 | 101,900 |
| **202** | Crude oil | 70 × 28 | Yes | EFRT | No | 107,756 | 101,900 |
| **203** | Crude oil | 70 × 28 | Yes | EFRT | No | 107,756 | 101,900 |
| **204** | Crude oil | 70 × 28 | Yes | EFRT | No | 107,756 | 101,900 |
| **205** | Crude oil/fuel oil | 42 × 30 | Yes | AGDR with CS IFR | Yes | 42,759 | 40,600 |
| **206** | Crude oil/fuel oil | 42 × 30 | Yes | AGDR with CS IFR | Yes | 42,759 | 40,600 |
| **207** | Crude oil/fuel oil | 42 × 30 | Yes | AGDR with CS IFR | Yes | 42,759 | 40,600 |
| **208** | Crude oil/fuel oil | 42 × 30 | Yes | AGDR with CS IFR | Yes | 42,759 | 40,600 |
| **Total** | | | | | | 602,064 | 570,000 |

Source: BGPIC. Note: *EFRT means external floating roof tank; AGDR/ With CS IFR means aluminium geodesic dome roof with carbon steel internal floating roof.

| Contact details | Revenue by geography |
|---|---|
| Al Sayegh Centre Hamdan St.<br>P.O. Box: 50170<br>Abu Dhabi<br>United Arab Emirates<br>+971 2 6333 149<br>www.broogeholdings.com |  |

| Management team | |
|---|---|
| **Chairman: Dr Yousef Alassaf** | **Chief executive officer: Nicolaas Paardenkooper** |
| Dr Alassaf joined BROG in October 2018. He is also president of the Rochester Institute of Technology (Dubai). Prior to this, he held a range of other academic positions over the last 30 years, most recently as dean of the College of Engineering at the American University of Sharjah (2006–13), which he joined as an associate professor in 1991. Dr Alassaf started his academic career as a research and teaching assistant at Oxford University from 1985 to 1987. He holds a BSc from Sussex University in electrical engineering, a PhD from Oxford University and completed an Executive Leadership Certificate Program at Cornell University in 2008. | Mr Paardenkooper joined BROG in May 2017. He has over 30 years of experience in the oil and gas mid and downstream sector. Prior to joining BROG, he was terminal manager at Oiltanking Odfjell Terminal, Oman, since October 2014. Prior to that, he worked in various positions at Emirates National Oil Company from 2010 to 2014 (including as manager terminal UAE and operations manager) and worked for 21 years at Vopak in various roles. Mr Paardenkooper started his career in various nautical positions on several types of vessels, mainly tankers, and has a nautical and maritime educational background, complemented with dedicated oil and gas mid and downstream diplomas. |
| **Chief financial officer: Syed Masood** | **Chief strategy officer: Lina Saheb** |
| Mr Syed joined BROG in April 2020. Prior to joining BROG, he worked with various local & regional banks and has extensive experience in corporate and institutional banking. He has experience in leading and managing independent treasury and banking functions in the Middle East, Africa and Europe. Mr Syed holds an MBA degree with a major in MIS from Newport University. | Ms Saheb joined BROG in 2013. Prior to joining BROG, she worked with the initial shareholders of BROG on many different ventures including the establishment of BROG in Fujairah in 2010. Ms Saheb has a bachelor's degree in software engineering from Mansour University, completed a course in banking and finance from Emirates College of Technology and is pursuing a master's degree in international business law at Paris Sorbonne University Abu Dhabi, in the UAE. |

| Principal shareholders | (%) |
|---|---|
| BPGIC Holdings Limited | 85.62% |
| Richardson (Neil) - North Sea Capital | 4.63% |
| Magnetar Capital Partners LP | 1.83% |
| BlueCrest Capital Management LLP | 0.87% |
| Twelve Seas Sponsors I, LLC | 0.48% |
| Millennium Management LLC | 0.32% |

## General disclaimer and copyright



## Australia



## New Zealand



## United Kingdom



## United States



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