

Research Report (Initiation of coverage)

Saturn Oil & Gas Inc.



Profitable Drilling Operation with significant upside potential

Target Price: 0.31 CAD (0.21 EUR)

Rating: BUY

IMPORTANT NOTE: Please take note of the disclaimer/risk warning, as well as the disclosure of potential conflicts of interest as required by section § 85 WpHG und Art. 20 MAR on page 36

Note on research as a "minor non-monetary benefit" according to the MiFID II regulation: This research meets the requirements for being classified as a "minor non-monetary benefit". For more information, see the disclosure under "I. Research under MiFID II"

Date and time of completion of this research: 22/11/2019 (16:00) Date and time of first distribution: 25/11/2019 (08:30) Target price valid until: max. 31/12/2020



Saturn Oil & Gas Inc.*5a,5b,7,11

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Current price: 0.125 CAD (0.086 €) 19/11/2019 TSX (19:30) 19/11/2019 Tradegate (22:01) Currency: CAD

Key Data:

ISIN: CA80412L1076 WKN: A2DJV8 TSX.V: SOIL FSE: SMK Number of shares³: 234.50 Marketcap³: 29.31 EV: 46.80 ³ in m / in m CAD /

Primary listing: TSX-Venture Secondary listing: Frankfurt

Accounting Standard: IFRS

FY End: 31/12/

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* possible conflicts of interest on page 39

Company Profile

Sector: Energy Focus: Oil & Gas

Headquartered in Calgary, Alberta

Management: John Jeffrey (CEO), Scott Newman (COO), Geoff Jones (CFO), Justin Kaufmann (VP Exploration), Stuart Houle (VP Engineering)



Saturn Oil & Gas is a Canadian exploration and development company. The Company holds licenses for oil, gas exploration in the northern Williston Basin, Saskatchewan. Saturn Oil & Gas Inc. is an energy company focused on the acquisition and development of undervalued, low-risk assets. Saturn plans to build a cash flow strong portfolio with strategic land positions.

P&L in CAD m FY	FY 2018	FY 2019e	FY 2020e	FY 2021e
Sales	4,52	20,40	20,81	21,23
EBITDA	1,10	13,19	13,45	13,85
EBIT	-0,85	7,69	7,95	8,35
Net income	-1,52	7,34	3,97	4,38

Key figures				
EPS	-0,008	0,031	0,017	0,019
Dividends per share	0,00	0,00	0,00	0,00

Key figures				
EV/Sales	10,80	2,39	2,35	2,30
EV/EBITDA	44,41	3,70	3,63	3,53
EV/EBIT	-57,47	6,35	6,15	5,85
PE	-19,24	3,99	7,38	6,70
PB	3,62			

** Last research by GBC:	
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Date: publication/target price in CAD/rating

** The research studies indicated above may be viewed at www.gbc-ag.de, or requested at GBC AG, Halderstr. 27, D86150 Augsburg

Financial calendar

25/11/2019: Ivory Club & EKF 11/12/2019: MKK – Müchner Kapitalmarkt Konferenz



EXECUTIVE SUMMARY

- Saturn Oil & Gas is an oil and gas producing company located in Alberta, Canada. It operates in the low-cost Viking oil field and offers the sector's highest net cash back compared to its peers.
- The company has a higher than average successful drilling and well completion rate.
- Saturn Oil & Gas has acquired enough land position to maintain their 3 to 1 ratio of well in reserve per well in production.
- The company posted revenues of CAD \$0.210 million in 2017 and CAD \$4.522 million in 2018. We foresee the company achieving just over CAD \$20.4 million revenues in 2019 and entering 2020 with over 1,000 boe/d resulting in a constant revenue level for 2020 and 2021.
- Saturn Oil & Gas is well positioned with operating costs of under 13\$ per boe/d, the sector's lowest.
- The current market environment has in our opinion an enormous monetary potential for the oil industry. Rising demand and flourishing business developments provide the market with important support for further growth. In the event of stable growth in demand and a healthy production level of the OPEC+ nations, fundamental market data forecast average prices in a corridor between USD 60 and 70 per barrel until 2020.
- The company business model makes use of their unique expertise and maximizes the current downtime in the oil sector in their operating region.
- Saturn Oil & Gas has overcome the hurdles of the start-up phase and will soon enter a stabilization phase. The company's actual advantageous land development opportunities and stable future production in the Viking Oil field will lead the way to a profitable M&A or organic growth period.
- Saturn Oil & Gas Inc. plans further acquisitions in the Viking Oil field. Many "too big to fail" shale and sandstone oil companies are now in distressed position and we believe Saturn Oil & Gas could profit of such a context and could provide a unique growth opportunity.
- However, we have currently valued Saturn Oil & Gas without additional acquisitions. Based on our DCF-Model we have determined a target price of 0.31 CAD (0.21 EUR) and initiate our research coverage with a BUY rating.



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Corporate structure as of 18/11/2019

Saturn Oil & Gas is a Canadian oil and gas company headquartered in Calgary, Alberta. They are developing several assets in the Viking Oil field in Saskatchewan and are acquiring strong land positions neighboring current production sites. They currently operate 34 wells where they drill for sandstone oil through a technique called fracking. Their current production is 840 boe/d.

Business Model

Saturn Minerals was founded in 2014. In 2016, it changed its name to Saturn Oil & Gas and a new management was put in place by the shareholders. Since then, the company has continuously pursued the same objective: to acquire and develop quality light oil assets in the Viking oil field. The company has focused exclusively on the Viking oil field due to its historical high netbacks and strong capital efficiencies.

The company had decided to focus exclusively on the Viking Oil. This oil field formation consists of oil trapped in underground porous rocks (made of sand and stone), communally called sandstone oil. The team had specifically chosen the region for its superior economics and affordable land acquisition opportunities. With a low Capex, high economics and land availability, it was the ideal location to implement their business plan.

Saturn Oil & Gas' business model relies on their team's unique geological and operational expertise and aims to be the Viking Oil field's most economical and capital efficient producer. The company's unique abilities and knowledge allowed them to acquire cheap land rights from public auctions and create value by producing oil in overlooked geological formations.

The company's future is based on secure growth, both in reserves and production. The company's stated goal is to ensure that, all times, they have three wells in reserve for every well in production. A revolving credit line of USD \$20 million with Prudential Capital Group, signed in September 2018, allows them to maintain and increase Year-on-Year (YoY) average production. Saturn Oil & Gas is also committed to fiscal prudence and privileges a strong balance sheet position in order to ensure future profitable growth.

Where are Saturn Oil operations located?



Saturn Oil and Gas operations



Historical Events

In the fourth quarter of 2016, new management took over Saturn Minerals. This company owned assets in the Viking oil field but had insufficient means to develop them. The new management changed the name to Saturn Oil & Gas, raised capital and proceeded to drill wells on their properties. The first well came online in November 2017. Since then, the company has drilled 33 additional wells and reached a peak production of over 1,400 boe/d in Q1 2019.

Overview o	f important milestones in the history of Saturn Oil & Gas
11-2016	Saturn Minerals Inc. changes name to Saturn Oil & Gas Inc. and announces new additions to Executive Team
03-2017	Saturn Oil & Gas Inc. announces Viking acquisition and appointment of new mem- bers to the Board of Directors
07-2017	Company announces plans to drill first Viking horizontal well at its Lucky Hills Property
01-2018	Saturn Oil & Gas Inc. announces Viking IP30 results exceeding 115 boe/day
07-2018	Saturn Oil & Gas Inc. commences Viking horizontal drill program
07-2019	Company announces peak production of 1,400 boe
09-2018	Saturn Oil & Gas announces USD \$20 million Senior Secured Note Facility with Prudential Capital Group
11-2018	Saturn Oil & Gas announces 1,000 boe/d production rate

Sources: SATURN OIL & GAS AG; GBC AG

Saturn Oil & Gas' operations

In contrast to oil sands, sandstone oil exploitation poses only slight risks to the environment and has a very limited footprint at surface (about 80m² per well). The method of retrieving sandstone oil is called fracking. This method uses a liquid that is pushed into horizontal wells under the phreatic nap in order to break apart the porous rocks containing underground oil at different depths.

The Viking oil field is located at a depth of around 750m. In contrast to fracking in the USA, Saturn Oil & Gas does not add chemicals to the liquid they inject into the well. As is common practice in the Viking oil field, they use only two natural ingredients: water and salt. Over 80% of the water is recuperated throughout the well's life. The salt injected is K-Cl coming from the potash mines located nearby.

Graphic representation of oil fracking



Source: Saturn Oil & Gas, GBC AG



Each of Saturn's production units is composed of a well (1), a pump (2), a tank (3) and an energy reserve (gas tank) (4) to run the pump. Maintenance and upkeep work is performed daily, and when the tank has reached a predetermined volume, an oil tank truck empties the reservoir and brings the oil to a liquid separator to eliminate all the water that had not deposited in the bottom of the tank previously. Then, the oil is sold to the company's customers (e.g. refineries) and shipped out by truck, train or pipeline to reach their clients.

Saturn Oil & Gas 6 well pad surface footprint



Source: GBC AG

Truck taking delivery of Saturn Oil & Gas production



Source: GBC AG

Saturn Oil & Gas Horse Head pump in Saskatchewan



Source: GBC AG



Once a fracking well is done producing and the oil within its reach emptied, the company must rehabilitate the land. This is a straightforward process. The company takes away its equipment, checks the area for possible contamination and replants greenery over it. Once the exploited land has been remediated, farmers usually plant crops directly over the area, leaving no marks on the surface of the previous oil well.

Viking sandstone oil field characteristics

Saturn Oil & Gas produces light oil from wells located in different sectors of the Viking oil field. This specific oil field provides the company with important advantages. It produces light oil, has a lower environmental footprint, a higher BOE/d production, and a very low Capex and Opex. It has a minimum gas percentage component, small land costs and land availability is very high. However, wells in other oil formations could have a higher 90-day initial production and a higher end-of-life barrel of oil equivalent production rate.

Light crude oil

Light crude oil extracted from the Viking oil field has one of the smallest environmental footprints in the world's oil production. Its surface area per well is minimal, it neither requires heavy infrastructure to produce nor special chemical compounds to be injected into the ground. Light crude oil allows for higher resell prices than heavy crude oil because of the higher percentage of gasoline and diesel fuel produced and the minimal operations performed in obtaining these end products in the refinery.

Additionally, light crude oil is very low in Sulphur content and has a very low density. These two factors minimize the operations necessary in the refining of light oil into gasoline or diesel. The transformations achieved in a refinery for heavy crude oil that has a high level of Sulphur and/or a low density can become energy-demanding and expensive.

Another advantage of light sandstone oil is that drilling is not a huge mining operation as is mining for the Canadian Oil Sands but rather a simple liquid extraction with a pump, an oil tank and a horse head well.



Crude Oil density and sulfur content per geographic location

Source: Federal Reserve Bank of Dallas



WTI vs. Brent

Light oil produced in North America have their own benchmark price, the Western Texas Intermediate. As the oil is cleaner than the Brent or other benchmark, it should trade at a premium. However, WTI is produced and mainly consumed in north America and has therefore a unique offer and demand market. With the American overproduction, the WTI has been trading at a discount compared to the Brent benchmark but exportation is difficult because of the additional transportation costs that cancels the price advantage. The difference between the WTI and the Brent price is called the WTI-Brent spread. With the massive shale oil production in America since 2016, we saw a increasing spread resulting in lower prices for the WTI. However, it is important to note that Saturn Oil & Gas production wells are located in Canada and therefore benchmarked in USD. Their revenues gain 30% on the price of oil simply from the conversion rate that has been relatively stable to between CAD 1,30\$ and CAD 1.34\$. This is a net advantage for the Canadian shale oil producer compared to their American counterparts. This also means a more resilient industry in Canada to lowered WTI prices and better margins.



BOE Production

The Viking oil field production rate, both in the first 90 days and at the end of life of a well, is not as high as for some other oil fields in Saskatchewan, such as the Cardium's oil play (but Cardium wells cost about three times as much). However, through engineering solutions, innovation, new technology and many other factors, Saturn Oil & Gas is able to extract oil more economically than the average of its Viking oil field peers. This oil field has also seen important YoY production improvements, which results in better economics for every new well drilled and we believe that this trend should continue for the next few years.

Average oil production of Viking wells grouped by year



Source: Energie media



Capex/Opex

According to the financials of competitors of Saturn Oil & Gas, the drilling of a horizontal oil fracking well in the Viking field costs between CAD \$1 million and CAD \$1.3 million. Saturn Oil & Gas drilled their first well in 2017 for just over CAD \$1.2 million. The company has been able to constantly reduce their CAPEX per well down to CAD \$950,000 in Q3 2019.

Based on their average production per well, this difference means that the Return on Investment (ROI) is not 1.4 years as for their peers but rather 1.2 years for their best wells. This not only helps the company to control their capital expenditure but it also allows for a faster recycling rate (rate at which a producing well is replaced with a new one).



COMPANY MANAGEMENT

Executive Team

John Jeffrey

Chief Executive Officer, Chairman

Mr. Jeffrey obtained a Bachelor of Commerce in Economics as well as an MBA in Finance from the University of Saskatchewan and started his professional career as Director of Operations for WesTower Communications in Hawaii. He gathered further experience as Area Finance Manager for AECOM, a Fortune 500 engineering consulting firm in Canada.

His background in operations and finance lead him to the execution of many large international projects as well as becoming CEO and co-founder of a geological and engineering consulting company, Axiom Exploration Ltd., which has drilled over 800 wells in western Canada. Besides his position as CEO for Saturn Oil & Gas, he has also been appointed CFO of RHC.

Scott Newman

VP operation, Director

Mr. Newman studied in Geology at the University of Saskatchewan. He then gained technical and management experience through executive positions at different private and public oil and gas companies. He was CEO and Founding Partner at Axiom Exploration and President, CEO and Director at RHC Capital Corp.

Geoff Jones

Chief Financial Officer

Mr. Jones earned a Bachelor's degree in Commerce from the University of Saskatchewan and his professional designation as a Chartered Professional Accountant. He was Staff Accountant for ParkerQuine LLP as well as Manager of Assurance at Virtus Group LLP. His expertise ranges from oil and gas to engineering, construction and manufacturing as well as computer hardware and software design.

Justin Kaufmann

VP Exploration

Mr. Kaufmann graduated from the University of Saskatchewan with a B.Sc. in Geology and is a registered professional geologist with APEGS. He has worked as a geologist in different positions for over 12 years and has consulted on over 100 oil/gas wells while working at Geometric Consulting Inc. He has also served as a consultant for Lightstream Resources and Novus Energy and was a founder of Axiom Energy Services, a division of Axiom Group.

Stuart Houle

VP Engineering

Mr. Houle earned a degree in Chemical Engineering from the University of Saskatchewan, during which he also started his professional career as a precision driller at Roughneck. He is a registered Professional Engineer with APEGA and has held engineering positions at Husky Energy as well as Frontier Engineering. Including his position as Project Manager for Drilling, Completions and Facility Engineering at Horizon Resource Management Ltd., he has had over 13 years of experience in the oil and gas industry.



Directors

Ivan Bergerman

Mr. Bergerman earned a J.D. degree from the College of Law of the University of Saskatchewan. He has worked over eight years in major law firms both in Calgary and Saskatoon, practicing general corporate commercial law with a focus on securities, M&A and Oil and Gas law. In 2010 he founded his own company, Bergerman Smith LLP with a primary focus on Public Company Advising, Initial Public Offerings, Corporate Governance, M&A, Natural Resources and others.

Simon Akit

Mr. Akit earned a Bachelor in Mechanical Engineering at McGill University as well as an MBA from the Rotman School of Management at the University of Toronto. He is also a registered Professional Engineer with APEGA. He worked over six years at EnCana Corp as a Drilling Engineer and Production Operator after which he started in Equity Research for Energy and Pipelines at UBS Securities. He was VP Institutional Equities at Raymond James and Director Institutional Equities at BMO Nesbitt Burns. Since 2008 he has been the Managing Director and Global Head of Energy Sales at Canaccord Genuity. He has had over 20 years of experience in capital markets and the oil and gas industry.

Calvin J. Payne

Mr. Payne holds a Bachelor of Applied Science from the University of British Columbia as well as an MBA from the University of Western Australia. He is also a Registered Professional Engineer in North America and Australia. He has worked for over 40 years as a construction worker, design engineer and manager in the communications tower industry. He was co-founder and CEO of Wes Tower Communications, one of the largest communications tower companies in North America. Mr. Payne retired from its operations in 2014.

Chris Ryan

Mr. Ryan earned a degree in Engineering Physics from the University of Saskatchewan. As Science Associate at the Canadian Light Source Inc. he published over 25 scientific publications. He then worked as an Exploitation Engineer at Tundra Oil and Gas Limited and as Operations Engineer, Director of Operation Services and Director of Midstream for Tundra Energy Marketing Ltd. He currently is President and CEO of Broadbill Energy Inc. Mr. Ryan is a member of the Board of the Canadian Crude Quality Technical Association and Co-Chair of the Sampling and Frequency Working Group for the Crude Oil Quality Association as well as sitting on various Canadian Association of Petroleum Producers (CAPP) committees.



Land

The company holds 57.6 net sections of land. (Each section is 1.6km x 1.6km). The favorable petro geology on their land amounts to Proven and Probable reserves of 4,554,972 barrels of oil. At the current production level of 840 boe/d, the company has just less than 15 additional years of production in reserve. The company could produce over 2,000 boe/d for over 6 years. We therefore believe that Saturn Oil & Gas has a very sound and secure oil reserve.

It is also relevant to point out that even within one oil formation such as the Viking oil field, sections of land are not all equal as the geology underneath varies greatly. Each section has different metrics, from a high first 90 days of production (IP90) to a low decline rate, these characteristics determine the company's strategical drilling plan. The Praieriedale wells are the most economical for the company and more importantly, before Saturn Oil & Gas acquired the first land, in this sector and drilled the first well, no other oil and gas company had identified Praieriedale as a possible sandstone oil favorable geology.



Saturn Oil & Gas current land position

Source: Saturn Oil & Gas



MARKET AND MARKET ENVIRONMENT

Saturn Oil & Gas is a crude oil producer operating in Canada and is predominantly located in the resource-rich province of Saskatchewan in south-central Canada.

Crude oil

Crude oil is one of the most important commodities in the world and plays a very significant role in the global economy. It is estimated that 4/5 of the global oil trade is conducted by sea via supertankers. In general, crude oil can be classified into light and heavy oils.

Heavy oils is mainly obtained from oil producing wells. It is also obtained as a residue resulting from the processing of crude oil. Residue here means the non-evaporable part formed when crude oil is processed (generally distillation). It is primarily used as a fuel for large diesel engines, for example for ship propulsion, and as a fuel for steam locomotive engines that burn oil, as well as for power plants to generate process steam or electricity.

Light oil is a mixture of different types of crude oil fractions. It has a relatively high energy density. Because it is liquid when unpressurised, it is easy to store and transport. The clean combustion with a large control range and the low emission level are additional advantages of light oil compared to heavy oil. Light oil is mainly used as petrol for engines and kerosene.

The main difference is the degree of viscosity. Light oils have a lower degree of viscosity than heavy oils and are therefore generally much more valuable than heavy oils.

Transactions in crude oil can be settled both on the spot market and on the futures market. Fossil fuel can be used as a pure consumer good or traded on the stock exchange as an investment good.





According to the oil company BP's "Energy Outlook 2019", growing prosperity, especially in developing and emerging countries, is causing global demand for energy sources

Sources: Exxon Mobil, GBC AG



such as oil, coal, gas, etc. to continue to rise. The study states that global energy demand will grow by around 30 percent by 2040. The reason for this is improved living standards mainly in India, China and across Asia. Around 75 percent of the increase in demand can be attributed to energy consumption in industry and buildings. The report also shows that the demand for oil will increase by the middle of the period and then flatten out moderately due to the rapid growth of renewable energies. However, significant investments will be necessary to develop new oil reserves in order to meet demand by 2040.

This forecast for future energy consumption makes it clear that crude oil will continue to be an important source of energy and that a positive trend can therefore be forecast for the oil market.

Oil market and oil price

The oil price is primarily determined by the relationship between supply and demand. Due to the dependence of the industrialized countries on oil, the oil industry is the largest economic sector in the world. The majority of global industries are dependent on oil, making it one of the most valuable resources. However, it is also one of the most volatile commodities due to its sensitivity to geopolitical events and other market factors outlined below:

The US dollar is the global reserve currency for buying and selling crude oil. Accordingly, the value of the US dollar has a considerable influence on the oil price and thus on the entire oil market. Therefore, if the dollar weakens, the oil price will tend to rise - at least in nominal terms - provided that all other price factors or market factors remain constant. In return, the price of oil tends to fall when the dollar is strong.

The US dollar is the reference currency for the oil price. The current low interest rate environment generally implies an interest rate advantage and thus a weaker US dollar. On the other hand, the US currency moved in the opposite direction at the beginning of 2019 and the US dollar appreciated. This is due to the current political unrest, in particular the trade dispute between the USA and China. Foreign currencies have depreciated as a result of US import duties. However, high import tariffs will harm the US economy in the long term because new supply chains have to be established. This is why the US dollar is weakening again towards the end of the year, which supports the oil price.



Development of the US dollar index exchange rate and the price of the WTI crude oil



The chart above shows that the price of WTI crude oil is higher when the US dollar is weak as a reference currency and vice versa. This makes the impact of a strong US dollar on the price of crude oil clear.

It is also important to understand the relationship between supply and demand in order to understand the development of oil prices. The oil price rises in step with demand (assuming supply remains constant) and decreases with increased supply. The oil price is primarily influenced by three factors: the global oil supply, access to oil reserves and the global demand for oil, in particular the requirements of the USA. Oversupply naturally leads to falling prices. Accordingly, rising demand results in higher prices. Easy access to oil reserves enables increased agility in terms of increasing supply and thus the reduction of prices. The USA is the yardstick for oil demand. The country's extremely high requirements make up most of the demand side.



Historical development of oil prices

As can be seen from the chart, crude oil is an extremely volatile commodity. In 2018 alone, the price of crude oil fluctuated between USD 50 and 85 per barrel. In the event of stable growth in demand and a healthy production level of the OPEC+ nations, fundamental market data forecast average prices in a corridor between USD 60 and 70 per barrel until 2020.

OPEC & OPEC+

The Organization of Petroleum Exporting Countries (OPEC) is a cartel of fourteen oil exporting nations. Cartel in this context means that the OPEC countries have joined forces to regulate oil prices by influencing the supply side. The organization was formed because oil is a finite resource and the aim was to avoid a fall in prices resulting from competition between exporters. OPEC was established in Baghdad on 14 September 1960 to regulate oil production quotas and thereby ensure that its members receive a good or fair price for oil. OPEC used to have a significant influence on oil prices and therefore on supply, but the expansion of unconventional oil production methods, such as fracking, has led to an enormous decline in OPEC's influence over the last decade. Accordingly, the number of countries outside OPEC has increased drastically, particularly the USA, Russia and Canada.

OPEC transformed the oil market from a buyer's market into a seller's market by imposing the oil embargo, which had a global impact, and turning pricing power in favor of OPEC members. The OPEC countries enjoy worldwide cost leadership in the oil sector

Sources: BP, GBC AG



in terms of manufacturing costs per barrel, which gives them margin advantages. In addition, OPEC members hold three-quarters of conventional oil reserves. In 2018, OPEC nations accounted for 42% of total oil production.

In addition to OPEC members, there are many other nations that have enormous oil reserves and are among the largest oil producers that are not part of OPEC. Since the end of 2016, OPEC has been cooperating with ten non-OPEC countries (also known as OPEC+) in order to exert even more influence on the oil market. The most important ally within OPEC plus is Russia, due to the country's strong influence on production volumes and its position as a political power. However, the USA, a major oil producer, is not a member of OPEC+.



The OPEC and OPEC+ nations

Oil demand

Total demand for oil is mainly determined by the USA, Europe and China. Cumulatively, these three countries/regions consume about 45 million barrels of crude oil per day. Their economic strength – and their global economic performance – have a significant impact on the oil market and the price of oil. Accordingly, it can be assumed that global crude oil demand will continue to rise when the economic situation is good and that positive market conditions prevail in the oil sector.



Top 10 countries with the highest oil consumption in 2018 (in 1,000 barrels per day)

Sources: BP, GBC AG



Year	2017	2020e	2025e	2030e	2035e	2040e	
OECD Member States	47,3	48,3	46,8	44,2	41,5	38,7	
Developing countries	44,4	47,9	53,1	58,1	62,6	66,6	
Eurasia	5,4	5,8	6,1	6,3	6,4	6,4	
World total	97,2	101,9	106	108,6	110,5	111,7	
Sources: OPEC (as at 2017), GBC							

Development of global oil demand by country group from 2017 to 2040 (in millions of barrels per day)

A current forecast by OPEC regarding future oil demand shows that the market environment in the oil sector is quite positive. This is because global demand for oil is expected to rise between 2017 and 2040. Although a continuous downturn in demand in OECD member states is expected, a massive increase in demand from developing countries of about 22 million barrels per day is expected.



Main driver of the development of global consumption

Despite the increased importance of electric mobility, one of the main drivers of global oil demand development is the transport sector, which is expected to remain responsible for around 57% of global oil demand by 2040. The forecast is supported by increased demand for crude oil in the transport sector.

Oil varieties: West Texas Intermediate (WTI) versus Brent

These are the two most important oil varieties and they serve as benchmarks for the price on the international oil market. In general, crude oils differ in terms of Sulphur content and API density. This usually has a direct impact on the price of the oil variety. The lower the Sulphur content, the "sweeter" the oil and the easier it is to process. Both WTI and Brent are considered "sweet" crude oil. If the API is above 10 then oil will float on water and if the value is lower than 10 then the oil will sink.

Oil of the Brent variety is key for Europe; it is mainly produced in the North Sea by Norway and the United Kingdom and is traded on the London commodity futures exchange ICE Futures. Brent has a Sulphur content of 0.37% and a density of 38.

Sources: OPEC, GBC AG



Crude oil price development of UK Brent oil in the years 2010 to 2019 (in US dollars per barrel)



Sources: OPEC, GBC AG

WTI, on the other hand, is produced in the United States and Canada, primarily in the US states of North Dakota, Texas and Louisiana. WTI futures contracts are traded on the New York Mercantile (NYMEX). WTI has a Sulphur content of 0.24% and an API density of 39.6.

Development of the price of West Texas Intermediate (WTI) oil in the years 2010 to 2019 (in US dollars per barrel)



Sources: OPEC, GBC AG

Oil reserves

In principle, a distinction is made between conventional and unconventional oil reserves, with the difference being the degree of difficulty in producing them. The sources are divided into primary, secondary and tertiary sources. Conventional means the actual presence of mineral resources such as oil, gas or coal. In the on-shore process, conventional oil reserves are pumped using a sucker rod pump, or they are pumped from the seabed via a floating offshore oil rig. With unconventional deposits, resources such as oil or gas are contained in sedimentary rocks and must first be washed out. One of the most popular unconventional methods is hydraulic fracking, which is used in the USA and for oil sands in Canada.

Oil reserves in Canada

Canada's largest resource reserves are located in Saskatchewan, a prairie province in south-central Canada that borders Alberta. The province has over 600 lakes and is rich in raw materials, with an estimated more than 170 billion barrels of producible oil stored in an area twice the size of Bavaria. Only Saudi Arabia has larger known oil reserves. However, these are unconventional reserves, which makes oil production not particularly easy in Alberta. This is because the oil is bound in sand in the form of bitumen hydrocar-



bons, which come from dead plants, among other things. Alberta's oil sands are a sticky, black mixture of 83 percent sand, four percent water, three percent clay and ten percent liquid bitumen. Extracting useful crude oil from this mixture is a complex and relatively expensive process. Only technological innovations have made it possible to exploit the potential in the province of Alberta.





Sources: BP, GBC AG

The chart shows the enormous resource potential of Canada. Based on crude oil reserves, it can be deduced that oil production companies operate in a strong market environment, which enables them to exploit the resources and meet the increasing demand for this fossil fuel.

Areas in Canada with high oil reserves

The enormous oil reserves already developed and the remaining oil reserves of Canada are distributed over a few provinces of the country as mentioned above, in particular Saskatchewan and Alberta. There is an enormous amount of fossil energy resources there.





Oil production companies operating in highly concentrated regions such as Alberta and Saskatchewan benefit from the resource reserves there and will thus be able to expand their capacities in the future and participate in the rising demand for oil.

Source: maps.com





Crude oil production by region in Canada in 2018 (in cubic meters)

Sources: Canadian Association of Petroleum Producers (CAPP), GBC AG

The Viking rock layer in Saskatchewan

These are underground gas and oil reservoirs located mainly in the province of Saskatchewan. The Viking formation consists of fine to coarse-grained sandstones, which can be characterized as sandstone, mudstone and slate and are trapped between sea shale. The Viking oil reservoirs are located within a 100 km radius and at a depth of about 700-750 meters and are therefore less expensive for oil producers than other rock strata or rock formations, as drilling does not have to be so deep and less pressure is used.

Hydraulic fracking in the USA versus oil sands in Canada

Fracking is a multi-stage process used to extract crude oil. First, a 1,000-metre vertical well is drilled, followed by a transverse well in the rock layer containing the natural gas. Immediately afterwards, liquid is pumped into the rock at high pressure, which causes cracks to form in the rock. This releases natural gas. The components of the liquid are: water, sand and chemicals. These components play an important role in the fracking process, because the sand prevents the cracks in the rock from closing again. The chemicals are supposed to dissolve minerals that hinder the process so that the deposit can be optimally exploited.

Oil sands are reminiscent of local lignite mining. After the forest has been cleared, excavators first remove the forest soil and then excavate the oil sand layer. Gigantic trucks transport the sand for further processing. The sand must be cleaned of stones and crushed. Using water and solvents, the bitumen is separated from the sand and later refined into crude oil, which can then be processed into petrol, diesel or heating oil.

If the oil sands lie too deep in the ground, a method is used in which two parallel shafts are drilled into the ground. Water vapor is pushed under high pressure through a shaft which dissolves the bitumen and is then pumped upwards through the other shaft. Although no forests have to be cleared, this process currently consumes even more energy and releases more carbon dioxide (CO2).



Development of oil sands production in Canada from 2015 to 2024 (in 1,000 barrels per day)



Sources: Canadian Association of Petroleum Producers (CAPP), GBC AG

The illustration depicts the development of oil sands production in Canada and thus represents an upward trend, which shows that with this unconventional oil production method the oil production industry is in a growing market environment.

Transport of oil

A basic component in the oil sector is its transport. After the oil has been produced on land or at sea, it still has a long way to go. The next step is the transport from the deposit or production areas to the refineries. This is where the final processing of the crude oil into various mineral oil products takes place. The most common means of transport are: ships, pipelines by land and pipelines on the seabed or by rail.

In general, the term pipeline refers to a long-distance pipeline for the transport of liquids or gases, and, less commonly, sludge. Pipelines are primarily used for transporting oil and gas over long distances on land.

Tankers transport over about 3/5 of the total quantity of crude oil produced. Oil tankers have been specially designed for oil transport. The crude oil reaches the ship in a heated state and is heated during the entire transport to the refinery in order to preserve its fluidity. On land, the crude oil is fed from the tanker into a pipeline, where it finally finds its way to the refinery.

Pipelines on land are used to cover greater distances and are laid underground or above ground. The pipelines consist of either steel or concrete or a combination of both materials. There are pumping stations at certain intervals which can compensate for differences in height. The crude oil is constantly heated to 60 to 80°C to keep it fluid. Pipelines are in constant operation and are absolutely independent of the outside temperature or climatic conditions.

Oil transport in Canada

Trans Mountain Corporate operates Canada's only pipeline system that transports oil products to the west coast. The pipeline is over 1,150 kilometers long. It begins in Edmonton, Alberta and ends on the west coast of British Columbia in Burnaby. 23 active pumping stations along the pipeline route maintain the line's capacity of approximately 300,000 barrels per day. In addition to the pumping stations, four terminals - in Edmonton, Kamloops, Abbotsford and Burnaby - house storage tanks for incoming tanker loading ramps and feeder pipelines.



Each component of the system performs specific tasks to ensure that Canada's only pipeline system to the west coast operates safely and efficiently. The pipeline transports products through a process known as batching. Several products, including crude oil, refined and semi-refined products, are transported in batches across the line for various consignors.

As the product flows through the pipeline, conditions such as height differences, fluid friction and the delivery point change the pressure along the pipeline. All these factors determine the optimal location of the pumping stations and even changes in the diameter of the pipeline to optimize performance and, in some situations, reduce the need for additional pumping stations to maintain the flow rate. The current Trans Mountain Pipeline consists of 827 kilometers of 24-inch pipes, 150 kilometers of 36-inch pipes and 170 kilometers of 30-inch pipes.

At the Sumas delivery point in Abbotsford, British Columbia, the Trans Mountain Pipeline is connected to the Trans Mountain Puget Sound Pipeline, a system that has been transporting Canadian crude oil products to Washington State refineries in Anacortes, Cherry Point and Ferndale since 1954. This 111-km-long pipeline system consists of pipes with a width of 16 to 20 inches and a capacity of up to 240,000 bdp (38,157 m3 per day), depending on the type of oil transported and the balance of supply between the two destinations – Anacortes and Ferndale.

After the project to expand the pipeline had been at a standstill for years, the breakthrough came on 18 June 2019 and the Canadian government approved the start of the expansion project subject to fulfilment of 156 conditions of the Canadian Energy Regulator.

The expansion project will provide more capacity to support the growth of Canadian crude oil production while ensuring access to global energy markets. The project includes the installation of approximately 980 kilometers of new pipeline, new pumping stations and terminals, and finally a new dock complex at Westbridge Marine Terminal in Burnaby, British Columbia. The expansion of the pipeline system will enable oil producers to have an additional 590,000 barrels of crude oil transport capacity at their disposal.

12 new pumping stations will be built. Furthermore, 19 new tanks will be added to the existing storage terminals in Burnaby (14), Sumas and Edmonton. Three new berths are being built at the Westbridge Marine Terminal in Burnaby. Once the new berths are completed and operational, the number of tankers loaded at the Westbridge Marine Terminal could increase to approximately 34 per month. The implementation of the project is expected to cost approximately USD 7.4 billion.

Map of the Trans Mountain Pipeline transport route



Source: aptnnews.ca



Oil companies

Some of the major oil companies are integrated into the entire value chain of the oil sector. The production, refining and general distribution of crude oil and petroleum products is one of the core competencies of the companies. The oil industry's strategic position of power makes the oil companies enormously influential worldwide and gives them a strong lobby.

In principle, oil companies can be divided into two groups. Private or exchange-listed companies and state-controlled oil production companies.

Turnover of the world's largest oil and gas companies in 2018 (in billions of US dollars)



The chart above illustrates the enormous monetary potential of the oil industry. Rising demand and flourishing business developments provide the market with important support for further growth.



COMPANY PERFORMANCE AND FORECAST

Historical development of the company					
Key (rounded) figures in CAD m	FY 2016	FY 2017	FY 2018		
Sales	0,00	0,21	4,52		
EBITDA	-5,20	-2,20	1,10		
EBIT	-5,20	-2.32	-0,85		
Net income	-5,20	-2,42	-1,52		
Courses Cotum Oil & Coo					

Source: Saturn Oil & Gas

The 2016-2018 period

In November 2016 Saturn Minerals appointed a new executive team and changed its name to Saturn Oil & Gas. The new team took over and settled the previous business in the following few months in order to give Saturn Oil & Gas a fresh start. With this objective in mind, the new management also established their business model: acquiring overlooked quality assets in the Viking oil field next to proven production land.

Since the company did not drill any wells before mid-2017, the 2016 financials are in line with the company's non-existent revenues.

In March 2017, the company proceeded with their first acquisition of 640 acres of Viking's land in the Kindersley area in greater South West Saskatchewan. With this acquisition, the company was planning on drilling two half-mile horizontal wells as well as two full-mile horizontal wells.



Net cash from financing activities



Source: Saturn Oil & Gas, GBC AG

Saturn Oil & Gas first well was drilled in November 2017 and by the end of 2017, the company had drilled two wells that produced higher than expected results. As of today, they remain some of the company's most productive wells. This success confirmed their business model and, most importantly, their geological modelling of the region. It also enabled the company to go on the hunt for additional capital. Nevertheless, with Saturn's production having just started on November 6th, the 2017 year-end results of \$0.210m, even if scarce, marked the beginning of Saturn Oil & Gas journey as a producer. The important negative net income is to be expected in the start-up phase as the company



made significant capital expenditures and incurred significant general expenses to begin production. The company went on to raise equity in 2018 to compensate for the negative net cash. The company continued drilling and raising their revenue to CAD \$4.522 million in 2018. With additional drilling success in 2018, the company proved that they had sound geological expertise and modelling capabilities and the company entered into talks with various financial institutions to obtain a revolving credit facility to finance their organic growth. Saturn Oil & Gas was able to both raise more equity on the open markets and sign a credit facility with Prudential for USD \$20 million in September 2018. Accordingly, with the money being available at the end of 2018, a major increase in revenues from the drilling generated from this added financial capacity, happened only in 2019. The revenues jumped to CAD \$10.04 million for the first half of 2019 with a net income of CAD \$2.83 million.

Cash generated from operations to capital expenditure ratio

As stated previously, Saturn Oil & Gas has entered the market at the perfect time. The oil market finds itself in a record profit period as upstream companies are posting free cash flow (FCF) numbers that are higher than when the price of oil was at its peak at \$110 per barrel. These record-FCF numbers are mainly caused by the rise of oil prices per barrel, lower costs (30% cost decrease from 2014) and lower activity (global investment down to \$500 billion from \$900 billion).



Free cash flow from upstream activities from public companies

Earnings performance

Saturn's historical oil production peaked in March 2019 with an output of over 1,250 boe/d.

So while peak production is certainly relevant when judging a company's performance, the most important metric is the average production per day. This measure gives a realistic view on the company's progress and its true development. In that regard, the company has seen a healthy average production per month.





Source: Saturn Oil & Gas

According to the company's projection, they will stabilize their production at over 800 boe/d in Q3 2019 with the drilling of 4 additional wells during this period. This would represent a YoY increase in production of over 80%.

Net cash flow per BOE produced

In this period of rising oil prices, net cash flow per boe tends to be an overlooked metric because capital is easily accessible, and the future value of the company exceeds its current intrinsic value. However, since 2015, capital available through equity or debt in the sector has been very tight. Therefore, companies have begun to pay more attention to the net cashback per boe as many companies in the sector carry a heavy debt that impairs their growth.



Saturn Oil & Gas 2019 Q1 & Q2 cash flow net back

From the first to the second quarter of 2019, cash flow generation has greatly improved, and debt repayment has also decreased on a BOE metric base. The company has successfully grown its total production from 650 to 850 BOE/d on average, a gain of 30%. The company's increase in production has led to economies of scale as the company's

Source: Saturn Oil & Gas, GBC AG



operational costs fell by 25%, the G&A by 30% and the interest payment by 11%. Both royalties and the costs of derivative instruments increased. In total, the difference accounts for a major net profit per BOE of \$5.03, an increase of over 22%. This makes Saturn Oil & Gas one of the leading smaller companies in the sector regarding their cash flow netback per boe.



Development of the operating profit and net result (in \$ million)

These metrics show a company in a healthy financial position, generating generous net margins of 44%. It is important to note that the capital reimbursement of the revolving credit is not included. However, with a positive cash flow of over CAD \$710,000 every month, we believe that the company could drill between 9 and 14 wells per year at their current metrics per well while being internally financed.

With the company's ability to raise cash through equity and debt, their low OPEX and high net cashback margins, Saturn Oil & Gas has posted excellent EBITDA and EBITDA margins in Q1 2019 and improved both metrics significantly in Q2 2019. These results are very impressive for a company increasing its production by 34% boe/d for the same period.

The management's skills and expertise have clearly allowed the company to grow its production without compromising its margins. The difference in EBIT and EBITDA is important, which is no surprise for an upstream company, as more resource they produce, more depletion they face. We believe that the EBIT Q1 and Q2 margins staying stable indicates the company's cost structure commitment and is very important when evaluating growth possibilities for the company. We think that the company could maintain their margin even if their boe/d production increases without major hurdles.

Altogether, Saturn Oil & Gas' management is keeping expenses to a minimum, increasing net revenues and generating the highest cash flow netback of the sector. These elements combined confirm the readiness of the company to enter a major growth phase since they have also proven that they are in absolute control of their operations. On the other side of the ledger, they have also highlighted the sector's difficulty in attracting lowcost financing solutions and the company will have to deploy even more resources into reducing its capital costs.

Sources: Saturn Oil & Gas; GBC AG



Balance sheet/financial situation of Saturn Oil & Gas

Selected positions of the consolidated balance		
sheet	31/03/2018	31/06/2019
(in € million)		
Equity	10,823,311\$	12,170,255\$
Equity ratio (in %)	25.45%	30.02%
Interest-bearing liabilities	19,183,740\$	19,377,800\$
Cash and cash equivalents	1,646,038\$	1,886,001\$
Net debt	17,537,702\$	17,491,733\$
Operating fixed assets	31,683,061\$	33,199,952\$
Net working capital	-4,883,203\$	-1,978,851\$
Source: Saturn Oil & Gas		

Saturn Oil & Gas' balance sheet resembles that of many young companies but does not bear any negative surprises. Between March 2018 and June 2019, liquid assets and the equity ratio rose due to positive earnings performance. At the same time, net debt fell. The last quarter has seen a significant improvement in the net working capital. The debt level stayed high at \$17.491 million but the company's strategy is to leverage its available capital in order to maximize production. We also expect the company to keep minimum cash given that their capital costs are too important.

The company's fast growth rate over the past two years can be seen in the consolidated balance sheet of Saturn Oil & Gas. From drilling its first wells to producing 850 BOE/d within 24 months, debt stayed high, working capital improved and the company showed growing operating fixed assets and equity value. The equity ratio has improved by 5% from 25.45% to 30.02%.

What transpires from these metrics is that the cash used to generate cash flow, even if the ratio is still over 1, shows amelioration. The financials are showing great improvements and the company has a sound balance situation in relation to its massive growth.



SWOT analysis

Stre	ngths	Weaknesses
•	Successful track record of finding new drilling possibilities Low cost structure allowing for highest free cash flow per BOE in the sector Strong geographical position Strong Petro-geological expertise	 Small workforce, dependent on individual key people No in-house drilling team, entirely dependent on subcontractors Highly leveraged company, relatively low cash position for future growth Revolving credit conditions Oil production composed of wells with low end tail production
Орр	ortunities	Threats
•	Potential M&A opportunities from dis- tressed companies in the sector Duplicating business model in other oil fields Low employment rate in the sector al- lows for recruiting best in class Organic growth from massive Oil re- serves Leverage land assets to fund growth	 Increased competition in the Viking oil field High oil price volatility Government taxes (royalties) increase Insecurities concerning future environmental laws Risk of unsuccessful exploration Well drilling completion risks Dependent on domestic transportation capaci- ties to sell their product



Current corporate strategy

Saturn Oil & Gas entered the oil sector after the rebound of oil prices in 2016 following the major drop from \$90/boe WTI to almost \$40. During that period, non-oil sand production in Canada fell from a high of 1.216 Mb/d in 2014 to 0.968 Mb/d in 2016. As prices started to rebound in 2017, countrywide production stabilized and started to rise again.



Historical and projected non-oil sands production in Canada

This depression in the oil production became Saturn's entry point into the sector. The company had previously attempted (under different management) to leverage their properties and start drilling but was unable to generate revenues. We believe that Saturn Oil & Gas' new management entered the space at the perfect moment.

As the sector was facing major divestment, the company was able to develop and start implementing its new business strategy. While big players were still focusing on to their prime land and not taking any exploration risks, Saturn acquired peripheral land positions in the Viking oil field next to proven prolific production areas for a fraction of the price.

Saturn Oil & Gas is pursuing a growth-oriented corporate strategy with the objective of becoming the leading cost-efficient pure Viking oil field producer. To achieve their objective, the company's strategy is enabled by three core competencies, which meld into this one objective.



Saturn Oil & Gas expertise

Source: cer-rec, GBC AG



Geological Expertise – (Land acquisition)

The company has a proven record of geological success. The company's initial capital situation has been the source of its geological modelling. As the company could not afford prime land packages, they saw an opportunity in overlooked lands that were available at a very small Capex. The company's model was developed focusing on peripheral areas of proven economical oil-producing wells. The company's first two wells produced such impressive results that, once these were made public, major companies stepped in and acquired the surrounding land. 32 wells after these first two, the company has posted a success rate of 95% in their geological model, having only one well that did not strike the Viking Oil formation adequately. Moreover, the company's average production per well is well over the sector's average, proving not only that they are leading the Viking Oil field sector in geological-structure understanding but also that they rely on very high operational expertise to render these concepts into a material barrel of oil.

Operational Expertise - (Cost efficiency)

The company's operational expertise has led Saturn to not only find oil in almost every well drilled but has made the average well production surpass that of all their peers in the Viking oil field. This reason is the main driver for the company's profitable cost per boe. Not only is their drilling more accurate and efficient, leading to a well value of Tier 6 IP90, but also and, most importantly, their well maintenance priority allows them to minimize oil production downtime by monitoring each well daily and intervening immediately when they are under producing. As there is a vast array of reasons that can lead to well underproduction (such as sand clogging, fracking, collapsing, etc.), monitoring and intervention is not enough to ensure sustainable production. The company's team is also able to rapidly understand the situation at hand, make the proper adjustment plan and execute it flawlessly.

Their geological and operational expertise have enabled the company to lead the sector on operational costs, posting results of under \$11 per boe produced compared to the sector's average of \$36.

Capital Market Expertise – (Capital availability and efficiency)

The company's ability to raise capital through debt and equity repeatedly has clearly given Saturn Oil & Gas an advantage over its competitors. Even if this advantage has been reduced due to high capital costs, the company has nonetheless managed to secure financing options to realize its ambitious growing objectives



FY 2021e 21.23 13.85 65.3%

8.35

4.38

39.3%

PnL (in m CAD)	FY 2019e	FY 2020e
Sales	20.40	20.81
EBITDA	13.19	13.45
EBITDA-Margin	64.7%	64.6%

Forecasts and model assumptions

Sources: Saturn Oil & Gas; GBC AG

Revenue forecasts

EBIT

EBIT-Margin Net income

Saturn Oil & Gas revenues should remain relatively stable during the next three years. At this stage of the company we expect slight growth of revenues over the next years. We assume a stable Oil price and stable exchange rate for the CAD. If the Oil price would rise over the coming years, then revenues should also increase. In our opinion the company should reinvest some of its cash flow to drill additional wells and keep a constant level of revenue e.g. 2% growth in the coming years. This way the company can generate a stable cash flow and focus on potential acquisitions.

7.69

7.34

37.7%

7.95

3.97

2021e

38.2%



2019e

However, we believe that the value of the company will increase favorably due to Saturn Oil & Gas daily operations. The company will continue to acquire land and develop new oil reservoirs. By doing so, the company will raise the value of their current and newly acquired land. They will also be raising their P+P (proven and Probable) reserve, adding to the current CAD \$91.37 million oil reserves NPV10 value.

2020e

We believe that there is not much room for operational costs improvements as the company is already the best in class. Only major scaling opportunities could unlock a reduction of 10 to 15% in operation expenses per boe produced.





Source: GBC AG

Source: GBC AG



As previously stated, we believe the company's costs per boe produced will neither raise nor decrease significantly. We foresee the next 24 months to be a transition phase where the company will be on the hunt for distressed assets in order to grow non organically and duplicate their peers leading production costs metrics into new assets.

The biggest competitive advantage that Saturn Oil & Gas possesses over their competitors is its small expenses structure and lean operational costs. Those two advantages applied to newly acquired assets could instantly release major value for the company. We believe that over a dozen of prime producing assets are up for grab in the sector but choosing the assets that would create shareholder value would require Saturn Oil & Gas to focus on these three factors: immediately accretive, Return of Capital, high G&A and Costs assets. By acquiring producing wells that share these characteristics could enable the company to grow rapidly without adding massive debt burden and create shareholder instant value.

Saturn Oil & Gas has overcome the hurdles of the start-up phase and will soon enter a stabilization phase. The company's actual advantageous land development opportunities and stable future production in the Viking Oil field will lead the way to a profitable M&A or organic growth period. We believe that the company will find new development opportunities in distressed companies ready to unload their non-core assets for the current NPV10 price of even lower.



VALUATION

Model assumptions

We rated Saturn Oil & Gas Inc. using a three-stage DCF model. Starting with the concrete estimations for 2019, 2020, and 2021 in phase 1, in the second phase, from 2022 to 2026, our forecast uses value drivers.

Here we expect a sales increase of 2.0 % per year. We have assumed an EBITDA margin target of 65.0%. We have taken into account average tax rates of 12.0 %. Additionally, a residual value is determined in the third phase by using the perpetual annuity by the end of the forecast horizon. As the final value, we assume a growth rate of 2.0%.

Determination of capital costs

The weighted average cost of capital (WACC) of Saturn Oil & Gas Inc. is calculated using equity costs and debt costs. The market premium, the company-specific beta, as well as the risk-free interest rate have to be determined in order to determine the equity cost.

The risk-free interest rate is derived in accordance with the recommendations of the expert committee for company valuations and business administration (FAUB) of the IDW (Institut der Wirtschaftsprüfer in Deutschland e.V.) from the current interest rate yield curves for risk-free bonds. The zero bond interest rates according to the Svensson method published by the German Federal Bank form the underlying basis. To smooth out short-term market fluctuations, we use the average yields over the previous three months and round up the result to 0.25 basis points.

The value of the currently used risk-free interest rate is 1.00%.

We set **the historical market premium of 5.50%** as a reasonable expectation of the market premium. This is supported by historical analyses of stock market returns. The market premium reflects the percentage by which the stock market is expected to be more profitable than low-risk government bonds.

According to GBC estimates, we have determined a beta of 1.67.

Based on these assumptions, the calculated equity costs amount to 10.2% (beta multiplied by the risk premium plus the risk-free interest rate). Since we assume a sustainable weighting of the equity costs of 75% (target ratio), the resulting weighted average costs of capital (WACC) amount to 9.6%.

We calculated with a number of shares of 234.50 million shares and deducted 5.00m CAD of warrants and options (Black-Scholes Valuation) from the fair value.

Evaluation result

The discounting of future cash flows is based on the entity approach. In our calculation, the result for the corresponding weighted average costs of capital (WACC) is 9.6%. The resulting fair value per share at the end of the 2020 financial year corresponds to the target price of 0.31 CAD. This target price is valid until 31/12/2020 or until a previous change or update of the valuation model. Equals to a target price of 0.21 EUR per price.

1 CAD = 0.681836 EUR (2019-11-22 15:39)



DCF-Modell

Saturn Oil & Gas - Discounted Cashflow (DCF) Betrachtung

Value driver of the DCF model after the estimate phase:

consistency - Phase		final - Phase	
Sales growth rate	2.0%	Eternal growth rate	2.0%
EBITDA-Margin	65.0%	Eternal EBITDA-Margin	38.6%
Depreciation to fixed assets	13.2%	Eternal effective tax rate	12.0%
Working Capital to Sales ratio	-50.0%		

Three phases - Model: Phase estimate consistency terminal FY FY FY FY FY FY in m CAD FY 19e FY 22e value 20e 21e 23e 14e 25e 26e Sales 20.40 20.81 21.23 21.65 22.09 22.53 22.98 23.44 2.0% Sales changes 351.1% 2.0% 2.0% 2.0% 2.0% 2.0% 2.0% 2.0% 0.51 0.51 0.51 0.51 0.50 0.50 0.49 Sales to fixed assets 0.49 EBITDA 13.19 13.45 13.85 14.07 14.36 14.64 14.94 15.23 EBITDA-Margin 64.7% 64.6% 65.3% 65.0% 65.0% 65.0% 65.0% 65.0% EBITA 7.69 7.95 8.35 8.57 8.69 8.81 8.92 9.04 EBITA-Margin 37.7% 38.2% 39.3% 39.6% 39.3% 39.1% 38.8% 38.6% 38.6% Taxes on EBITA -0.92 -0.95 -1.00 -1.03 -1.04 -1.06 -1.07 -1.09 Taxes to EBITA 12.0% 12.0% 12.0% 12.0% 12.0% 12.0% 12.0% 12.0% 12.0% EBI (NOPLAT) 6.77 7.00 7.35 7.54 7.65 7.75 7.85 7.96 22.2% 24.2% Return on capital 39.4% 24.1% 24.3% 23.9% 23.4% 23.0% 22.5% Working Capital (WC) -11.00 -10.50 -10.50 -10.83 -11.72 -11.04 -11.26 -11.49 WC to Sales -53.9% -50.5% -49.5% -50.0% -50.0% 50.0% 50.0% 50.0% -0.62 -0.50 0.33 0.23 Investment in WC 0.00 0.22 0.22 0.23 Operating fixed assets (OAV) 40.00 40.80 41.62 42.86 44.15 45.47 46.84 48.24 Depreciation on OAV -5.50 -5.50 -5.50 -5.50 -5.67 -5.84 -6.01 -6.19 Depreciation to OAV 13.8% 13.5% 13.2% 13.2% 13.2% 13.2% 13.2% 13.2% Investment in OAV 16.70 -6.30 -6.32 -6.75 -6.95 -7.16 -7.38 -7.60 Capital employed 29.00 30.30 31.12 32.04 33.11 34.21 35.35 36.53 EBITDA 13.19 13.45 13.85 14.07 14.36 14.64 14.94 15.23 Taxes on EBITA -0.92-0.95 -1.00 -1.03-1.04 -1.06-1.07 -1.09 Total investment -17.32 -6.80 -6.32 -6.42 -6.74 -6.94 -7.15 -7.37 Investment in OAV -16.70 -6.30 -6.32 -6.75 -6.95 -7.16 -7.38 -7.60 Investment in WC -0.62 -0.50 0.00 0.33 0.22 0.22 0.23 0.23 Investment in Goodwill 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Free cash flows -5.05 5.70 6.53 6.62 6.58 6.65 6.71 6.78 97.00

Value operating business (due date)	82.87	85.15
Net present value explicit free cash flows	31.85	29.22
Net present value of terminal value	51.02	55.92
Net debt	14.61	12.89
Value of equity	68.26	72.26
Minority interests	0.00	0.00
Value of share capital	68.26	72.26
Outstanding shares in m	234.50	234.50
Fair value per share in CAD	0.29	0.31

Risk free rate	1.0%
Market risk premium	5.5%
Beta	1.67
Cost of Equity	10.2%
Target weight	75.0%
Cost of Debt	15.0%
Target weight	17.5%
Taxshield	25.0%
WACC	9.6%

Cost of Capital:

8			WACC			
pit		9.0%	9.3%	9.6%	9.9%	10.2%
eturn on ca	21.7%	0.33	0.32	0.30	0.29	0.28
	22.0%	0.33	0.32	0.31	0.29	0.28
	22.2%	0.34	0.32	0.31	0.30	0.28
	22.5%	0.34	0.33	0.31	0.30	0.29
Ř	22.7%	0.34	0.33	0.31	0.30	0.29



ANNEX

<u>I.</u>

Research under MiFID II

1. There is a contract between the research company GBC AG and the issuer regarding the independent preparation and publication of this research report on the issuer. GBC AG is remunerated for this by the issuer.

2. The research report is simultaneously made available to all interested investment services companies.

<u>II.</u>

Section 1 Disclaimer and exclusion of liability

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