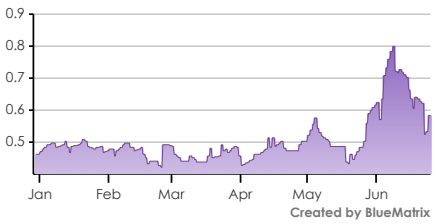
TOMCO ENERGY PLC (LON:TOM)

28 June 2021

Energy

52-WEEK HIGH	**1.5p**
52-WEEK LOW	**0.4p**
PRICE	**0.6p**
MARKET CAP MLN	£7.84

Share Price



Major Shareholders

Stephen Hattersley - 4.6%	
Leighton Dee and Jane Lousie Dee - 3.4%	
John Geoffrey Bolitho - 3.3%	
Shares in issue	1,451,412,012
Avg Three-month trading volume	30,237,573
Primary Index	AIM
Next Key Announcement	H1 end June 2021

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TomCo Energy - Utah oil sands project advancing towards commercial operations

Moving ahead with new oil-sands technology

TomCo (LON:TOM) is an oil & gas exploration and production company that operates in the Uinta Basin in Utah. In June 2020 the company announced the formation of a joint venture (JV) called Greenfield Energy LLC to unlock the potential for oil sands development within the area using an innovative new production technology. In this report, we examine the progress of this project.

The Uinta Basin and adjacent formations hold some of North America's largest deposits of oils sands with the potential to yield some 10 billion barrels of oil. The Greenfield JV was formed to examine a scalable modular production plant that could be used to extract oil from the sands with cost efficiency and low environmental impact. The proposed technology offers the following benefits among others:

- **Limited environmental impact, with a modest water requirement, and no "dirty" sand to remediate at the end of the process**
- **A scalable modular system with limited capital expenditure (capex) requirement**
- **An output product that needs no further refining.**

The output product is an important part of the business case. We base our financial modelling (p8-10) on an output product of bitumen and diesel oil, both of which can be sold directly into the marketplace. The processing system can also be potentially modified to offer other different end products.

Next steps and potential upside

The Greenfield venture is a 50/50 JV between TomCo and a global EPCI company called Valkor LLC. Currently, Greenfield is performing work at a test plant capable of producing 500 bpd (barrels per day) at Asphalt Ridge in Utah. Results from this plant will serve as validation for the separation technology which will form the basis for a proposed 5,000 bpd plant that would serve as the first commercial oil sand processing facility for Greenfield.

During the remainder of 2021 there are many key milestones for the project and/or catalysts for the share price:

- Finalisation of a front end engineering and design (FEED) study and independent third party validation, expected in July 2021
- Potential additional detail on the economics of the project, and financing plan
- Work commences of full-scale commercial plant

In this report, we examine the economics of the project, based on the pre-FEED study released by TomCo in September 2020, and additional disclosures since that time. We estimate that US$110mln of investment would establish a 5,000 bpd production facility. This would produce revenue of over US$100mln per year and net profit of over US$40mln per year by our calculation, at the current prices of bitumen and diesel. We present the financial and valuation implications in detail on p8-10.

John Potter – Chief executive

Potter is an executive and project manager with many years' experience working within the energy sector. He specialises in understanding and identifying the best technologies in projects and in managing relationships with key stakeholders.

Investment summary

TomCo is an exploration and production company that operates in the Uinta Basin, Utah, USA. This geological formation is known to hold very large deposits of energy-rich hydrocarbons. TomCo is focussed on opportunities in non-conventional oil & gas, and the company is working on innovative extraction technologies to realise this potential.

The Uinta Basin is part of the Green River formation, which contains the largest North American oil sands deposits outside of the Athabasca region of Canada. The estimated oil sands in the formation represent over 10 billion barrels of oil.

The Greenfield joint venture is TomCo's major commercial project, using a new separation technology to create economically valuable output products from the raw oil sands available in the Uinta.

Modular separation plant for oil sands:

TomCo is involved in the development of a new system for the processing of oil sands, based on a process that has undergone initial development and testing by another operator in Utah. This process could be commercialised on a relatively fast timescale.

Low capex requirement and a clean production process

Globally oil sands are already being exploited on a large scale, but the system being examined by TomCo will use a new processing technology that differs from the systems used by the larger-scale operations that are well established in Canada. The new process offers modest initial capex, flexible scalability, and eliminates the expensive disposal of 'dirty' sand at the end of the process.

Output product is ready-to-market, enhancing the economics of the project

Perhaps most importantly, the process under development would produce ready-to-market output product, rather than producing crude oil which requires refining.

The pre-FEED study published September 16th 2020 outlines the design for a plant and based on this and subsequent updates from the company, we have arrived at financial estimates for the project. The following summarises:

Economic highlights, Proactive Research estimates

Source: Proactive Research

Objectives and timeframe

The oil sands project began in December 2019 with an agreement between TomCo and Valkor to examine the processing technology. Since that agreement, the project has taken significant steps forward. The following table summarises the timeline of recent events, together with our own expectation for further project milestones.

Timeline of events, recent and near future

Dec 2019	TomCo announces MoU with Valkor LLC to evaluate new processing technologies for oil sands
Jun 2020	Greenfield JV established
Sep 2020	Pre-FEED study published
Q4 2020	Upgrade work to the test plant completed
Q1 2021	Test plant operational, FEED study completed
Jun 2021	Conditional site purchase agreement reached, for tar sand mining and full-scale production plant
July 2021	Completion of review of the FEED study, and receipt of independent verification report
H2 2021	Targetting completion of funding for the commercial scale plant

Source: Proactive Research

We expect significant project milestones during the remainder of 2021

From this point, we believe that the development pathway offers a rapid potential transition to commercial production. This is contingent on various significant factors which are still in progress, including:

- Finalisation of the FEED study and third party validation report.
- Finalising the acquisition of the site within the Uinta Basin for oil-sands ore extraction and construction of the commercial-scale plant. The conditional purchase agreement was announced in June 2021.
- Financing the production of the full-scale facility — we consider this on p9.

During the next few months, we expect TomCo to disclose further progress on these issues, which could provide a catalyst for the share price.

Oil sands / tar sands

Tar-sands, also known as oil sands are sands that are saturated with bitumen, which is a highly viscous form of oil. Extraction of oil from oil sands already represents a large scale commercial undertaking globally, especially in the Athabasca region of Alberta, Canada. The following map shows major known oil sands deposits in the world, with the size of the dot being illustrative of the relative size of the resource.

Biggest oil sands resources are in Canada, Venezuela, and Russia

Utah is at the top of tier-2

Major global oil-sands resources

Source: Proactive Research

The dot in the middle of the USA represents the Green River formation, which includes the Uinta Basin. The following table summarises the biggest oil sands deposits identified:

Three major deposits: Asphalt Ridge, Sunnyside, and PR Springs

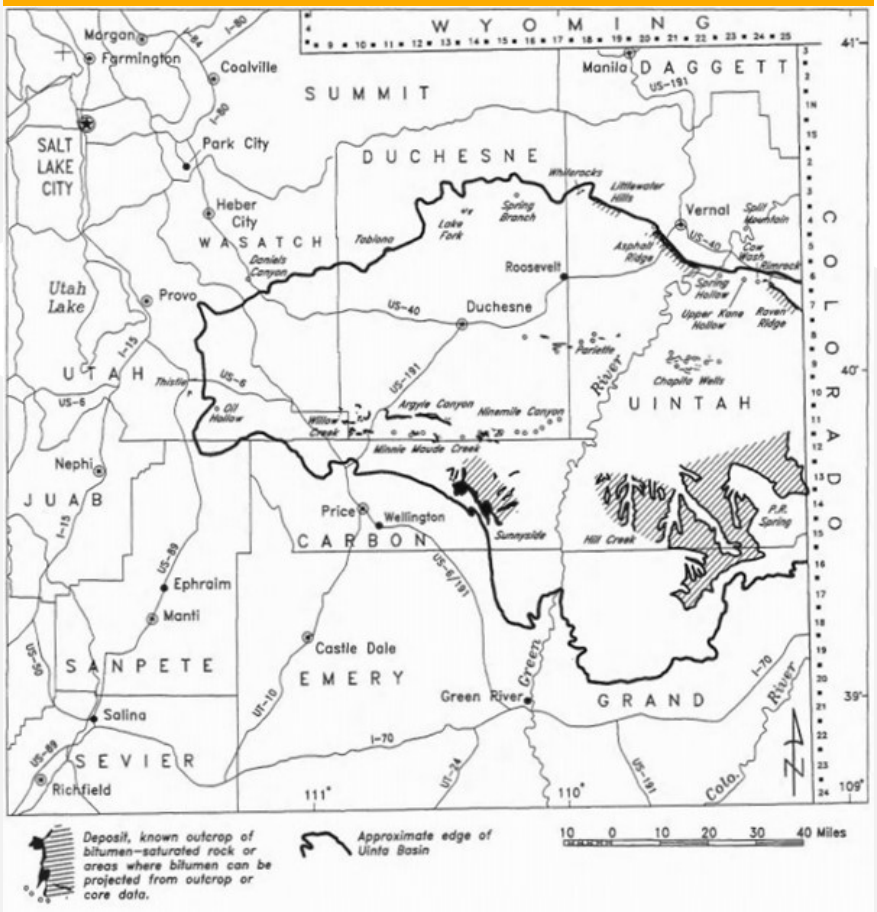
Major oil-sands deposits in the Uinta Basin

Deposit	Formation(s) in which deposit occurs	Dominant Lithologies	Resource estimate (millions of barrels)
Argyle Canyon	Green River Fm.	Sandstone, Siltstone, Limestone	100 – 125 *
Asphalt Ridge	Mesaverde Fm.-Duchense River Fm.	Sandstone, Siltstone	1,148 – 1,173 **
Chapita Wells	Unita Fm.	Sandstone	7.5 – 8 *
Cottonwood-Jacks Canyon	Green River Fm.	Sandstone, Siltstone	80 – 100
Cow Wash	Green River Fm.	Sandstone Conglomerate	
Daniels Canyon	Oquirrh Fm.	Limestone	100 – 125 *
Hill Creek	Green River Fm.	Sandstone, Siltstone	6.5 – 10 *
Lake Fork	Duchesne River Fm.	Sandstone	
Littlewater Hills	Duchesne River Fm.	Sandstone, Conglomerate	10 – 20 *
Nine Mile Canyon	Green River Fm.	Sandstone, Siltstone	5 – 10 *
P.R. Spring	Green River Fm.	Sandstone, Siltstone	4,250 *
Pariette	Unita Fm.	Sandstone, Siltstone	12 – 15 *
Raven Ridge	Green River Fm.	Sandstone, Siltstone	125 – 150 *
Rim Rock	Wasatch Fm.- Green River Fm.	Sandstone	30 – 35 *
Spring Branch	Duchesne River Fm.	Sandstone, Conglomerate	1.5 – 2 *
Sunnyside	Wasatch Fm.- Green River Fm.	Sandstone, Siltstone	5,200 – 5,850 **
Tabiona	Currant Creek Fm.-Duchesne River Fm.	Sandstone	4.6 *
Thistle	Green River Fm.	Sandstone, Limestone	
Whiterocks	Navajo Ss.	Sandstone	125 – 140 **
Willow Creek	Green River Fm.	Sandstone, Siltstone, Limestone	20 – 25 *

Source: Utah Geological Survey

The following map shows the location of these oil-sands deposits within the Uinta Basin:

Oil-sands within the Uinta Basin



Source: Utah Geological Survey 1996

The TomCo oil-sands project

Current technologies for separating oil sands have significant limitations

Currently, oil is separated from oil sands by several operators globally, using a process with large gravity separation tanks to produce diluted bitumen, which can then be sent for refining. Issues with this method of separation include 1) large capex requirement, 2) very large requirement for water, 3) dirty (oiled) sand to be disposed of, and 4) bitumen output that contains high levels of sulphur.

The Greenfield project aims to use an innovative separation technology that gets around some problems with the "traditional" process.

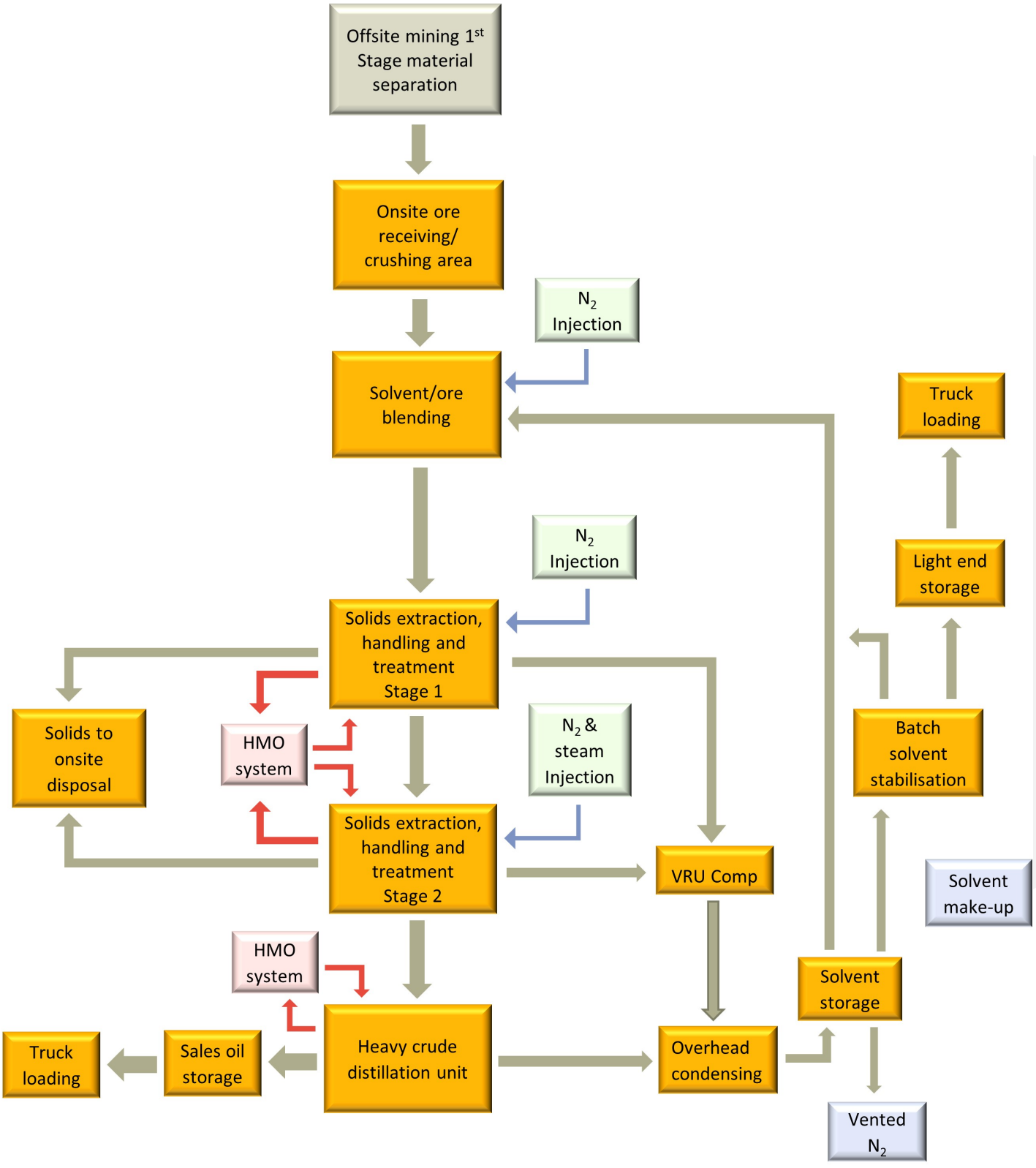
In December 2019 TomCo signed an MoU (memorandum of understanding) with Valkor, a global engineering procurement construction and installation specialist, to work on the development of a new process for oil sands separation.

Valkor will bring expertise from its experience working on other oil-sands extraction technology projects. Under the Greenfield JV TomCo and Valkor will work to establish a 5,000 bpd production facility, based on technology that has been undergoing testing and optimisation at a smaller scale facility at Asphalt Ridge, Utah, which has been producing around 180 bpd during June 2021.

Advantages of the new system being evaluated by TomCo

This process has a number of advantages over conventional oil sands separation techniques, including: 1) A modular, scalable extraction plant, with lower start-up capex requirement. 2) Lower water requirement, and a by-product of clean sand, requiring no expensive remediation. 3) Output product that can be sold directly into the market with no further refining.

Oil-sands system



Source: TomCo pre-FEED study

The economics of this methodology are attractive, particularly for an operation that will start at a relatively small scale when compared with some existing oil-sands industry projects.

Economics of the new separation system

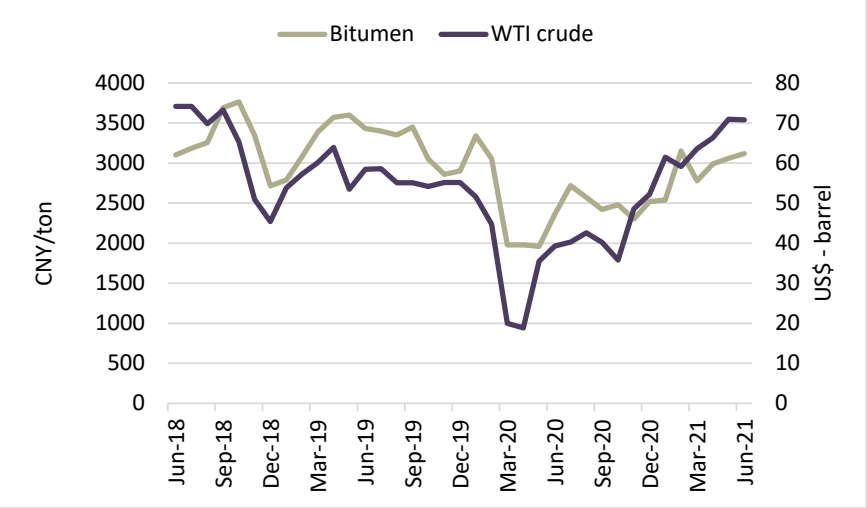
TomCo published a pre-FEED study in September 2020 outlining cost estimates for a full-scale separation plant. Since then the company has gathered data from the test facility and has made further modifications to the process. The company expects to receive a finalised version of its FEED study, together with a third party validation report, in July 2021. Based on what we currently know about the process, we have produced new estimates for the costs and revenues of the full-scale 5,000 bpd plant.

Output products

Our assumption for output product: 90% bitumen, 10% diesel

We base our forecasting on an assumed output of 5,000 barrels per day, of which 90% are barrels of bitumen and 10% diesel. Bitumen is a highly viscous or semi-solid petroleum product, also referred to as asphalt, which is used in road surfacing and also as a waterproofing product in applications such as roof felts. The price of bitumen is broadly correlated with the oil price, but typically with somewhat lower volatility. The following chart illustrates:

Bitumen price versus crude



Source: Shanghai Commodities Exchange and Chicago Merc

The relative lower volatility of the bitumen price is an attractive feature when planning a new production facility like the Greenfield plant.

Flexibility in targeting the final end market

We have highlighted bitumen and fractional diesel as the end markets for Greenfield's product; however, these are not the only possibilities. The final stage of the separation process is a back-end emulsion process that produces a water/oil emulsion that can be used as a direct substitute for existing fuels in various applications, which could potentially include, in different configurations:

- Marine bunker fuel
- Medium/low-speed diesel reciprocating engines, typically used for industrial power generation
- Fuel oil for heating or water-boiling power generation

The in-built flexibility in terms of product applications allows an additional level of revenue optimisation and risk mitigation.

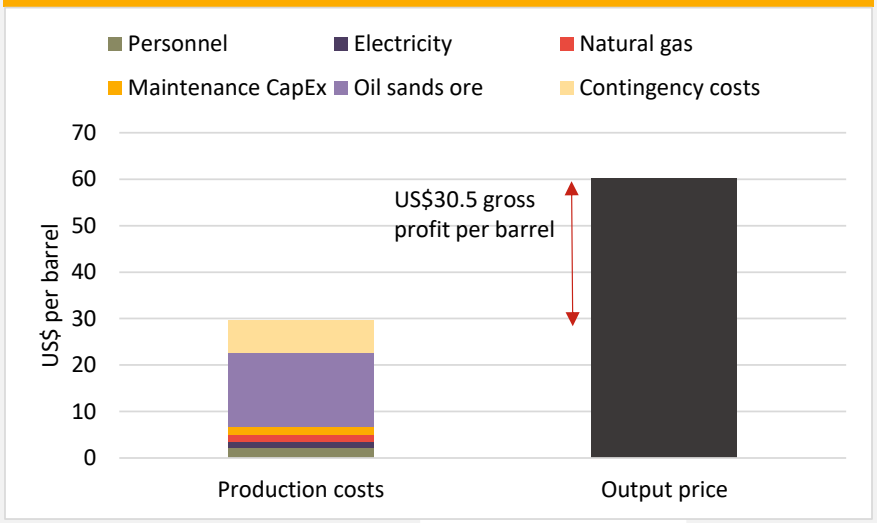
Profitability

Based on our assumption of an output product of 90% bitumen, 10% diesel (two separate products), we calculate the average revenue per barrel as the weighted average of the US wholesale bitumen price (US$56.7/bbl, June 11th 2021) and US wholesale diesel price (US$92.4/bbl, June 11th 2021), to arrive at an average output price of US$60.2 per barrel.

Our operational expenditure (opex) cost estimates are based on the September 2020 pre-FEED study. The following chart illustrates these costs. These are pure opex costs, not including financing expense or taxes. In this sense, the differential between the operating cost and the oil price is a good proxy for underlying earnings (EBITDA) per barrel.

Profit per barrel of US$30.5 based on conservative cost estimates

Production costs, compared with output price

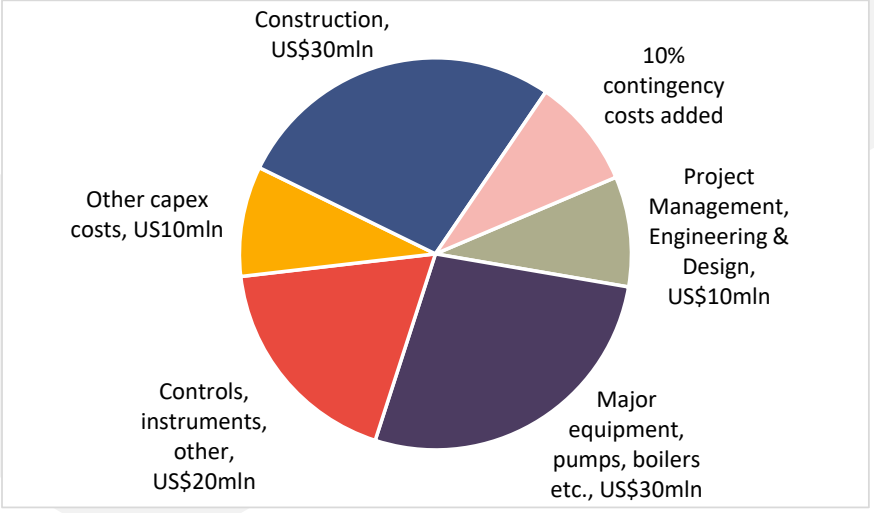


Source: Proactive Research, with reference to TomCo pre-FEED study

In terms of capex estimates for constructing the facility, we are estimating a total of US$110mln including a 10% buffer for contingencies. The following chart summarises.

Capex of US$110mln to establish a plant converting 5,000 bpd

CapEx costs - US$110mln

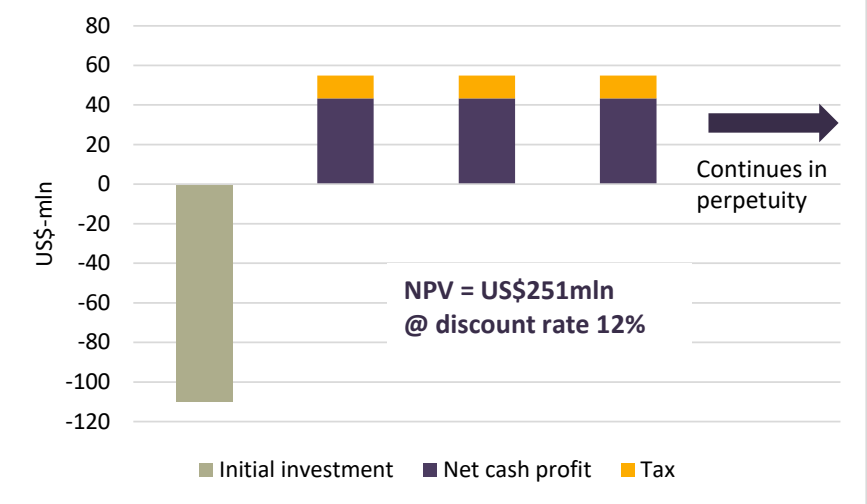


Source: Proactive Research

Based on these figures, we can arrive at a discounted cash flow (DCF) valuation model to calculate the net present value (NPV) of the project. This is based on an annual net cash profit of US43.4mln, after charging 21% tax. There is no annual capex to be deducted, as we have already counted maintenance capex within operating costs as per the chart on the previous page. Any working capital requirements would depend on the nature of any offtake agreements, but we assume that any working capital requirements would give rise to only a small decrease in NPV.

DCF implies an NPV of US$251mln, for 100% of the Greenfield venture, unleveraged

Outline of our discounted cashflow for the project



Source: Proactive Research

This is the NPV of the whole Greenfield venture (100%), on an unleveraged basis. The value to TomCo will depend on financing factors. We consider these issues in our conclusions section below.

This valuation is based on a single plant producing an output of 5,000 bpd. Assuming this project is successful, we would expect capacity to be expanded, giving rise to further value creation.

Finally, we consider the sensitivity of this DCF to two factors — discount rate and selling price for the output products. The following table summarises the sensitivity.

DCF sensitivity

		Output price per barrel, $US				
		50	55	60.2	65	70
Discount rate, %	11.0	152	217	282	346	411
	12.0	131	190	251	308	368
	13.0	112	167	221	276	331
	14.0	96	147	198	249	299
	15.0	82	130	177	225	272
	16.0	70	115	159	204	248

Source: Proactive Research

Conclusions

Various potential financing options for the project

Current market cap leaves considerable upside

It is not possible to precisely quantify the financial upside potential for TomCo at this stage. In particular, the issue of financing the project remains an open question. We note that much of the equipment required for the plant is off-the-shelf industrial equipment, which implies a possible route for asset-based

financing. Also, there is a possibility of resource-based financing once all the elements of the project are in place.

We argue that almost any reasonable financing structure would leave significant value for TomCo shareholders relative to the current market cap of the company.

This value proposition is supported by the unique characteristics of the new separation process:

- An output product that requires no further refining
- A modular production system with a low capex requirement
- Modest water requirement, and no "dirty" sand to be remediated at the end of the process.

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