



Market Announcements Platform
ASX Limited
Exchange Centre
20 Bridge Street
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ASX Code: CE1

July 4, 2018

Calima to benefit from ~ A\$72 Billion of proposed investment in Western Canadian gas pipeline infrastructure

Highlights:

- **Calima has undertaken a strategic review of current and near-term investments in gas pipeline capacity relevant to the Montney Formation in Western Canada.**
- **The review has identified more than C\$70 billion (~A\$72 billion) of proposed infrastructure investments potentially adding more than 8 bcf per day of new gas pipeline capacity which would more than double the export capacity of the basin.**
- **The productivity of the basin has run ahead of its pipeline capacity which means producers have to compete for access to markets in eastern Canada and the US and, as a consequence, gas from the Montney is currently selling at a significant discount to US benchmark prices.**
- **The introduction of new infrastructure will ease pressures on producers as well as introducing access to international markets for the first time via LNG.**
- **A forecast for increasing gas prices combined with growing demand for condensate should have a positive impact upon Montney producers and demand for acreage.**

Australian oil and gas company **Calima Energy Limited (ASX: CE1)** (“Calima” or “the Company”) has undertaken a review of current and near-term investments in gas pipeline capacity relevant to its position in the Montney Formation where it Operates 72,014 acres of drilling rights.

Based on the Company’s detailed review, infrastructure developments either underway or in advanced stages of planning (Figure 1 and Table 1) will increase demand and/or export capacity in the region by **an estimated 8.4 bcf/d**. This represents an investment of C\$70 billion (A\$72 billion) which will more than double the export capacity of the basin.

The Montney Formation currently produces 7 bcf/d of gas, which is 40% of Canada’s total production. Due to the highly productive nature of the Montney, the rate of gas production has recently been increasing by more than 20% year-on-year and as a result production has run ahead of the capacity of the pipeline infrastructure, which exports the gas to markets in eastern Canada and the US.

This has meant producers are having to compete for access to pipeline capacity, resulting in lower gas prices. The benchmark gas pricing hub in Western Canada, AECO, has been trading at a significant



(60%) discount to the US benchmark Henry Hub gas price. This is a common feature of the larger resource plays in North America and in common with these other plays, it is expected that the price discount will be significantly reduced as new export infrastructure is introduced.

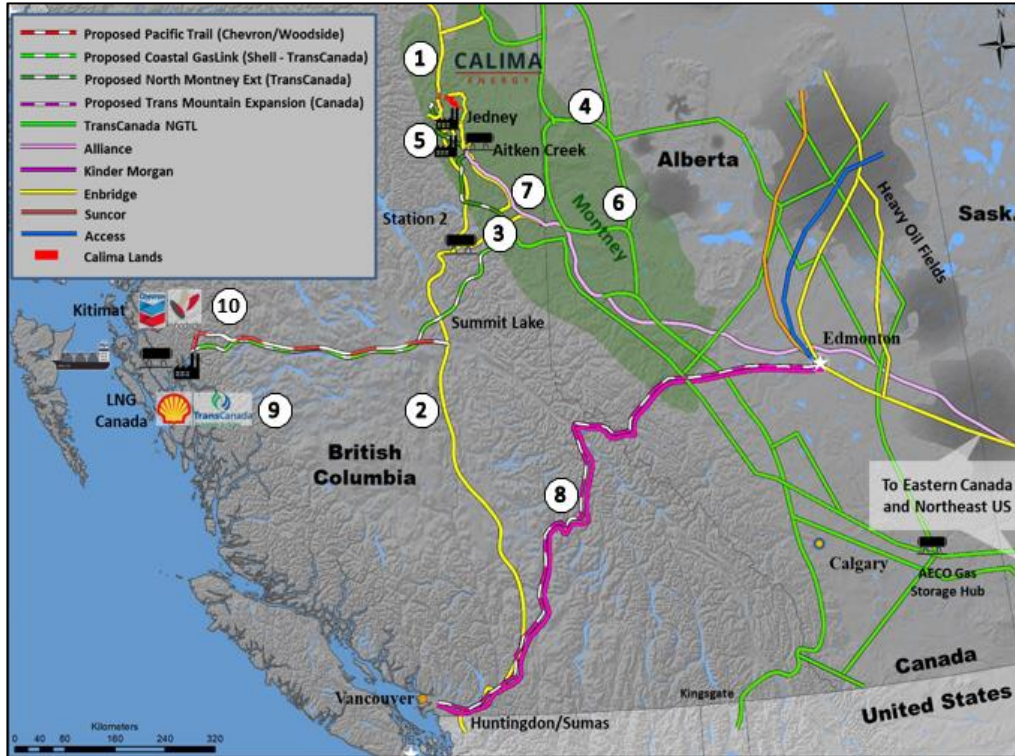


Figure 1. Location of major infrastructure upgrades, expansions and planned developments, including West Coast LNG facilities in relation to Calima Lands. Individual project details provided Table 1.

Operator	Pipeline	Additional Demand Mmcf/d	Expenditure C\$bn	Timing
1 Enbridge	T-North	240	0.6	2018
2 Enbridge	T-South	190	1.0	2020
3 Enbridge	Spruce Ridge	400	0.5	2019
4 TransCanada	NGTL - 2017	500	1.7	2018
5 TransCanada	N. Mont. Main.	1,500	1.4	2019
6 TransCanada	NGTL - 2021	1,000	2.4	2021
7 Alliance	Alliance	500	2	2021
8 Canadian Gov't	Trans Mountain	600*	7.4	2021
9 Shell LNG	Coastal Gas	2,500	40	2024
10 Chevron LNG	Pacific Trails	1,000	>20	2024+
TOTAL		8.43bcf/d	>70C\$bn	

Table 1. Major infrastructure projects affecting capacity and demand for western Canadian gas. Projects include upgrades and expansions of existing facilities and new developments including west coast LNG facilities.



In the short term (over the next 2-3 years) investments of C\$7 billion (~A\$7.2 billion) in upgrades of existing pipeline and new pipelines **will add 3.8-4.3 bcf/d of capacity.**

In addition to increased access to US and Canadian gas markets through expanded pipeline capacity, the construction of LNG terminals on Canada's west coast will allow Montney gas to reach international markets for the first time. Shell and partners are scheduled to reach FID on a C\$40 billion (A\$41 billion), 13-26mtpa LNG project in October 2018. This project alone will consume **an additional 2.5 bcf/d** when operational with the **capacity to expand up to 5 bcf/d.**

Additional gas export capacity is expected to result in increased gas prices. This is reflected in the AECO vs Henry Hub differential strip (Figure 2) which shows the discount reducing progressively over the near term. The differential strip predicts a doubling of AECO gas prices over the next two years, which should have a significant impact on most Montney producers.

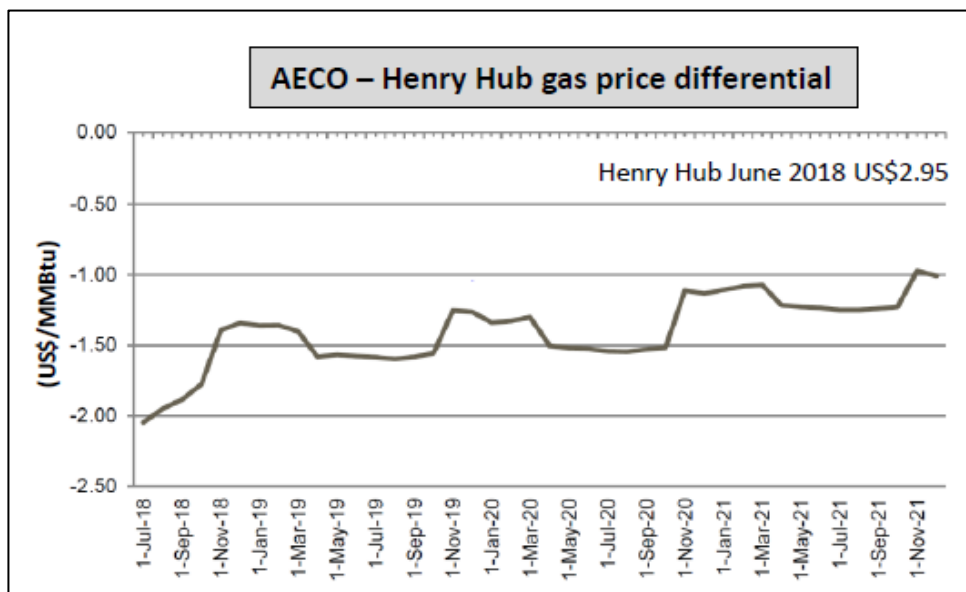


Figure 2. Improving forward strip differential between AECO and Henry Hub reflects the anticipated impact of infrastructure investments. Source: Spring 2018 Montney Report, Cormark Securities Inc.

The Calima Lands lie within the liquids-rich zone of the Montney Formation. For producers in this part of the Montney, economics are underpinned by strong condensate prices. Condensate is required as a diluent, or thinner, in the transportation of the heavy oil produced from the oil sands and consistently trades at a premium to the WTI benchmark oil price. Production of heavy oil has been increasing year-on-year and the demand for condensate (Figure 3) consistently outstrips the supply available from the Montney.

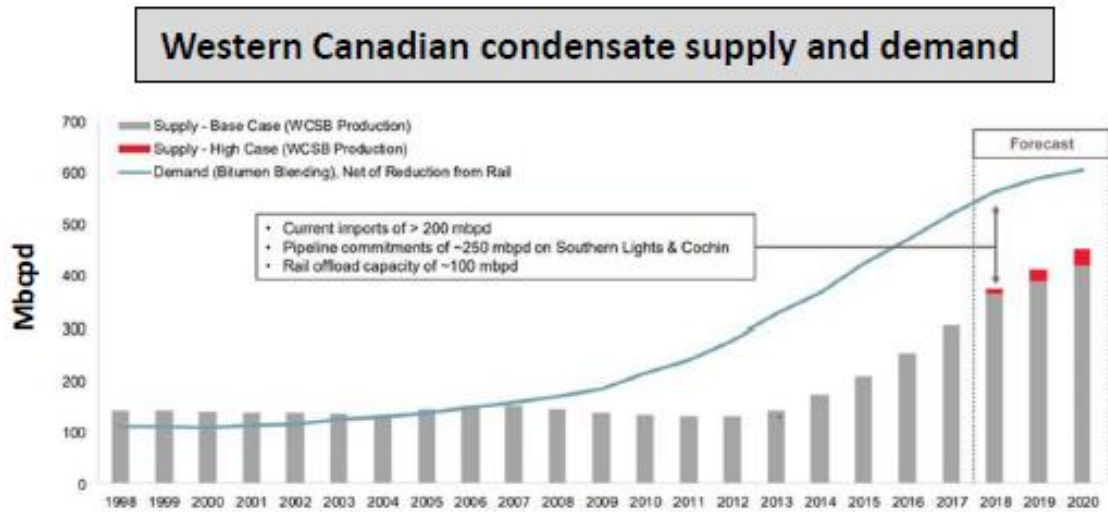


Figure 3. Condensate demand in western Canada outstrips supply attracting premium pricing against WTI. Source Winter 2018 Oil & Gas Review, Peters & Co.

The Trans-Mountain pipeline (Figure 1), which has been taking heavy oil to the west coast of Canada since the 1950s, is scheduled to be upgraded from 300,000 bbl/d to 890,000 bbl/d. This increase in production will create further demand for condensate but given that gas is used to generate heat as part of the oil recovery process it also **adds 0.6 bcf/d** to forecast gas demand.

Based on the Company's review of current and planned near-term investments, **the gas export infrastructure available to Montney producers is expected to double in capacity to approximately 15 bcf/d** over the next 5-6 years.

This increase in export capacity plus the introduction of new markets should reduce the discount applying to Montney gas prices. This anticipated improvement in gas prices (reflected in the forward strip, Figure 2) combined with growing demand for condensate (Figure 3) should result in increasing demand for acreage positions in the liquids-rich parts of the Montney Play.

Commentary

Calima Energy Managing Director Alan Stein said:

"Calima is fast approaching the point where it will be drilling its first wells on the Calima Lands and it was therefore considered prudent to review the factors affecting the market both in terms of price and ease of access to infrastructure.

The analysis confirms our belief that the introduction of new pipeline capacity and new markets should have a positive impact on regional gas prices and the increased demand for diluent by the heavy oil producers should result in premium pricing for Montney condensate being maintained in the future.

With a positive outlook on infrastructure and its flow-on effect on pricing, this is an exciting time to be bringing the Calima Lands towards production."

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About Calima Energy

Calima Energy Limited (ASX:CE1) is an international oil and gas company with over 72,000 acres of drilling rights prospective for the Montney Formation in British Columbia, the most active oil and gas play in Canada.

Calima, which features a board and management made up of some of the most successful oil and gas executives of recent years, is fast-tracking a major oil and gas opportunity in one of the world's most successful and sought after plays.

The Company is preparing to drill several wells close to existing infrastructure, including pipelines and processing facilities.

Calima's neighbours in the Montney include international operators Shell, ConocoPhillips and PETRONAS, as well as Canadian producers Black Swan Energy, Saguaro Resources and Painted Pony Energy. The region's liquids-rich hydrocarbon reserves are being targeted for LNG export alongside domestic and international oil market opportunities.

Forward-Looking Statements

This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Calima Energy Limited's planned activities and other statements that are not historical facts. When used in this document, the words such as "could," "plan," "estimate," "expect," "intend," "may", "potential", "should," and similar expressions are forward-looking statements. Although Calima Energy Limited believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual outcomes will be consistent with these forward-looking statements.



Appendix

Summarised Results of the Calima Infrastructure Desktop study

Near to mid-term capacity increases

As a result of the dramatic growth in productivity from the Montney most of the existing pipelines are undergoing significant expansions in capacity and some new pipelines are going to be installed (Table 2). These increases in pipeline capacity are being driven by some of Canada's largest infrastructure players such as, TransCanada Corp. and Enbridge Inc. which are both undertaking significant expansions and upgrades to their existing facilities. TransCanada has committed to investing more than C\$7 billion to increase its gas delivery capacity by 2.5 bcf/d by 2021.

Operator	Pipeline	Province	Additional Capacity mcf/d	Timing	Market
Enbridge	T-North	BC	240	Complete	South & East
Enbridge	T-South	BC	190	2020	South
Enbridge	Spruce Ridge	BC	400	2019	South
Enbridge	Wynwood	BC	50	2018	South & East
TransCanada	NGTL - 2017	AB	500	2018	East
TransCanada	N. Montney Mainline	BC	1,500	2019	East
TransCanada	NGTL - 2021	AB	1,000	2021	East
Alliance (Enbridge/Pembina)	Alliance	BC/AB	500	2021	East (Chicago)

Table 2. Planned and proposed upgrades to the Canadian gas pipeline network.

Of particular relevance to Calima, the National Energy Board has recently recommended the Federal Government approve a variance to TransCanada's proposed North Montney Mainline. The approval will allow TransCanada to commence construction on the North Montney Mainline, which is expected to add 1.5 bcf/d of capacity and will terminate just west of the Calima Lands.

The North Montney Mainline is an extension of the existing Nova Gas Transmission Ltd. (NGTL) System which is owned by TransCanada Corp. The NGTL is currently undergoing further capacity upgrades (see Figure 1) and is backed by 20-year commercial contracts with 11 shippers to transport approximately 1.5 bcf/d.

The North Montney Mainline consists of approximately 301 km of 42-inch pipeline, compression and associated metering facilities that will transfer gas east and south across Canada and the US.

Additional Montney export capacity is also being developed by Enbridge Inc. which is in the process of completing upgrades to the BC Pipeline, incorporating the T-North and T-South transmission systems.

The 2,818 km BC Pipeline serves as the backbone for natural gas infrastructure development in British Columbia, transporting approximately 60% of the natural gas produced in the province.



The T-North upgrade has been completed adding 240 mmcf/d of capacity and the expansion of T-South, is anticipated to add an additional 190 mmcf/d of capacity by 2020. The expansion of T-North may represent an opportunity for the Company, with the pipeline running through the Calima Lands.

Enbridge also intends to add two new sections of pipeline and additional compression to its T-North system. These new sections of pipeline would be constructed as separate segments that largely parallel the existing pipeline and would add a combined 402 mmcf/d of capacity.

The Alliance Pipeline, a 50:50 joint venture between Enbridge and Pembina, currently delivers 1.6 bcf/d from Western Canada into the Chicago hub. Alliance is currently considering a 500 mmcf/d expansion at an anticipated cost of C\$2 billion.

Long term increases in gas demand

Independent assessment of the Calima Lands suggest that the Company holds gross prospective resources, based on 400 well locations, of 475 MMBOE (million barrels of oil equivalents)¹. A full-scale development of these resources would take 10-20 years to implement.

As part of its review of the Montney, Calima has identified longer term increases in anticipated demand which could affect the project throughout its lifetime (Table 3).

Operator	Pipeline	Province	Increased Demand bcf/d	Timing	Market
LNG Canada (13-26 mtpa)	Coastal Gas Link	BC	2.5-5	2024+	Asia
Kitimat LNG (10 mtpa)	Pacific Trails Pipeline	BC	1.3	2024+	Asia
Jordan Cove LNG (Pembina -7.8 mtpa)	GTN Pipeline & extensions	Canada/US	1.0	N/A	US-Asia
Oil Sands (In situ)	Existing & planned Infrastructure	AB	>3.0	2-20yrs	Domestic (in production of heavy oil)

Table 3. Planned projects which could add significant longer-term demand for gas from the Montney after 2024.

Currently Canada's only gas export market is the US. Canada supplied 8.3 bcf/d of gas to the US during 2017. Canada's west coast is geographically well positioned to access Asian markets which are seeing increased demand for LNG. The introduction of new international export markets via the use of LNG facilities could have a significant impact on demand for Montney gas.

LNG Canada, a consortium of Shell, PetroChina, Petronas, KoGas and Mitsubishi is seeking to develop gas export in British Columbia, with initial capacity of up to 13 mtpa, with the option to expand to 26 mtpa.

¹ See ASX Announcement released: 14 March 2018 "Independent Resource Report - Calima Lands".



The development will be supplied via the 670 km Coastal Gaslink Pipeline, which will extend from the Montney region to a proposed LNG export terminal, near Kitimat on the BC coast.

Shell, as operator of the LNG Canada consortium, is expected to take Final Investment Decision (FID) on the project in October 2018. This project could add 2.5 bcf/d of demand with the potential to expand to 5 bcf/d.

PETRONAS (Progress), which has acreage immediately adjacent to the Calima Lands, acquired a 25% stake in the Shell LNG project in May, 2018. It is expected that Progress will provide a significant amount of the gas required for the LNG facility.

Kitimat is also the potential site for an LNG Export Terminal operated by Chevron and Woodside. This project would be supplied by the Pacific Trails pipeline, connecting the Kitimat facility to existing infrastructure at Summit Lake – due south of the Montney region.

The Chevron/Woodside facility is expected to have an initial capacity of up to 10 mtpa which will be supplied with 1 bcf/d from the Pacific Trails pipeline.

Once operational these LNG terminals will add significant new demand for Montney gas and they will access new international markets with different pricing mechanisms.

Calima has also identified the potential for major increases in demand from local sources within western Canada.

The Canadian Government recently agreed to purchase the Trans Mountain Expansion Project, which will increase the volume of heavy oil transported by pipeline from Edmonton to Vancouver for export. The Government views the project to be of national significance and will seek to invest C\$7.4 billion in the upgrades which will increase capacity from 300,000 to 890,000 bbl/d.

The pipeline will facilitate a dramatic increase in production of Canadian heavy oil. Gas is used to generate heat as part of the processing sequence to extract heavy oil and so, as a consequence, anything which results in an increase in the production of heavy oil will generate additional demand for gas.

The processing of heavy oil consumes gas at an average rate of 1,000 cf/bbl. Based on these estimates the upgrade of the Trans Mountain pipeline, with an increased capacity of 590,000 bbl/d, would require an additional 600 mmcf/d of gas.

The Canadian Energy Research Institute (CERI) has predicted production from oil sands may increase from current levels of 2.8 mmbbl/d to 5.5 mmb/d by 2038.

Operators transporting crude directly into the US including Enbridge and TransCanada are both looking to expand their export capacity. Enbridge's Line 3 replacement program will add 360,000 bbl/d of export capacity by 2019 at a total cost of nearly C\$9.0bn, while TransCanada's USD8bn Keystone XL will add 830,000 bbl/d of export capacity when complete.