

# ROYAL DUTCH SHELL PLC LNG CANADA FINAL INVESTMENT DECISION

OCTOBER 2<sup>ND</sup> 2018

LNG CANADA FINAL INVESTMENT DECISION WEBCAST TO MEDIA AND ANALYSTS

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Good morning, good afternoon, Ladies and Gentlemen, welcome to the Shell webcast on the LNG Canada Final Investment Decision. I'm talking to you from Vancouver today, and am joined by Jessica Uhl RDS CFO in The Hague, and Clare Harris Executive Vice President venture development here with me in the room. Before we start let me highlight the disclaimer.

Today Shell and our Joint Venture partners have given the green light to LNG Canada by taking the Final Investment Decision. This is a great moment. And we could not have achieved this without the dedication of the LNG Canada team, our Joint Venture partners and the excellent support provided by the governments of Canada and British Columbia, the town of Kitimat, First Nations and many others. Construction on the two-train project will start immediately and we are expecting to start producing LNG before the middle of the next decade. LNG Canada is a great opportunity for Shell, connecting abundant low cost gas in North America with premium demand in Asia at a competitive cost of supply. It fits our strategy, and I will go into all the reasons why.

We have taken a very disciplined approach in our evaluation to invest in LNG Canada. The Internal Rate of Return of the integrated project is around 13%. And the plant and infrastructure have been designed to allow for a possible expansion with a 3rd and 4th train which, if we would take that decision, would further bolster the economics of the project. The project has a strong and resilient cash flow profile that is consistent with our ambition to become a world class investment case. It is also supports Shell towards another of its strategic ambitions to thrive through the global energy transition to a lower carbon energy system. LNG Canada is well placed through its low CO<sub>2</sub>-footprint and it will further assist Asia to transition away from coal, which is one of the most carbon-intensive of energy sources.

I have visited Canada many times over the last few years. And every time I have been impressed by the support we receive. That holds true of people living in the town of Kitimat, of representatives of First Nations and also of the governments of Canada and British Columbia. Also our Joint Venture partners who provide deep industry and market knowledge. This makes me confident that together we will make this project a success. Today we want to give you insight into why I believe LNG Canada is the right project, in the right place, at the right time. After this short presentation, I will gladly answer your questions together with Jessica and Clare.

I will start with the customer, I will start with demand. According to our LNG Outlook, LNG demand growth will remain strong. It will be driven by GDP growth, urbanisation and government policies aiming for cleaner air and fewer CO<sub>2</sub> emissions. The global LNG market has continued to defy expectations of many market observers, with demand



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growing by 25 million tonnes over the last 4 quarters, almost 9%. According to the Shell outlook total LNG demand is expected to double by 2035 with Asia in particular, continuing to show strong growth. In addition, declining domestic gas production will further add to the need for additional LNG supply. However, new FIDs have been lagging. Changing market structures have made it more difficult for LNG projects to take FID, and although a number of projects is proposed they are unlikely to all go ahead at their proposed timing. As a result, a supply gap is expected to open up in the first half of the next decade and LNG Canada is well placed to be a competitive new supply source to fill that demand.

Shell has a global portfolio that is unlike any other in the world. Over the last 4 quarters we sold some 71 million tonnes of which 34 million tonnes was our own equity production. LNG Canada adds a new differentiated point of supply to this portfolio and is highly complementary. The 5.6 mtpa of Shell equity volumes produced by LNG Canada will be managed as part of Shell's global LNG portfolio and adds significant trading options.

With a lot of the LNG demand growth coming out of Asia, LNG Canada is well placed to satisfy that demand. LNG from Canada will be able to reach Tokyo bay in less than half the time of a cargo from the Gulf of Mexico – only 10 days compared to 24 days it takes from the US Gulf Coast – and it will not have to navigate the Panama Canal on the way. Another distinct advantage of LNG Canada is the access to abundant low cost natural gas produced from Western Canada, specifically the Montney basin. The total Western Canada gas resource has an estimated 300 tcf at a cost below \$3 per mmbtu. Shell itself has significant amounts of equity gas through our existing position in Groundbirch. Our working interest in Groundbirch is assessed to hold over 9 tcf of recoverable resources and it has additional potential through continued maturation. Groundbirch is one of the most competitive producers of gas in the basin with cost of supply of around \$2 per mmbtu, and we have seen the cost of that gas continue to come down. The AECO market also provides us with the option to buy gas if this turns out to be cheaper than developing our own. Currently, gas sold on the AECO market is cheap because there is more supply than the local market can handle and the exports to the US are coming down. And we expect that Canadian gas will remain relatively stranded, certainly more so than Henry Hub gas.

Now let us have a look at the site in Kitimat. We identified this location at the time from a list of 500 potential sites in British Columbia as the ideal location for a large-scale LNG export facility. It might be a surprise to some of you that a lot of the infrastructure that is needed for the project is already there. So even though you might look at this project as a greenfield development, it already has an existing ice-free port, roads, railway and power supply. The town of Kitimat also has an existing nearby airport. The site is also large enough to accommodate at least 4 LNG trains creating the option to expand the project at some point in the future. And as part of the pre-FID preparations a lot of the site preparation has already been done, which means the site is in excellent shape and will form a solid foundation for this project.

As I mentioned at the start, LNG-Canada has several big advantages, but the absolute cost and the risk of a possible cost overrun had to be dealt with before the project could move ahead. When the joint venture participants decided to delay the FID in 2016, the LNG Canada team took that as an opportunity to work with our partners and suppliers to further improve the competitiveness of the project. In that time, LNG Canada retendered and selected JGC/Fluor as the EPC contractor on a lump-sum basis. The cost to construct the LNG plant based on that lump-sum contract is expected to be about \$1,000 per tonne. The



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improvement of the fiscal framework provided by the governments of Canada and British Columbia also helped to ensure the project could go ahead. In addition to improving competitiveness, LNG Canada was also able to lower the risks that come with any major project. Working closely with our contractors, LNG Canada has been able to use proven industry technology, allowing modules to be fabricated in Asian yards with a good track record in terms of safety, quality and cost. The absence of any other large construction project in Canada at this point in time helps to further mitigate the risk of the cost inflation that we have seen before in the industry and in Canada. The construction of the 670km Coastal Gas Link pipeline from the LNG plant to Shell's Groundbirch field will be done by Trans Canada who will be the owner and operator of the pipeline. The pipeline has been fully permitted, and has received the support from all elected First Nations that would be impacted. The schedule of the pipeline construction has been optimised to minimize the risk of coming onto the critical path of the overall project schedule. So now, having worked hard to make the project as good as it can be we are confident we can ship the first LNG before the middle of the decade with predictable construction costs.

At this point I would like to hand over to Jessica.



Shell's strategic ambition to become a world class investment case means that the project has been subject to our disciplined approach to capital investment. LNG Canada was critically reviewed for affordability, competitiveness and returns. The funding of our share of the project fits within our existing range for capital investment of \$25-30 billion per year and it is consistent with our organic free cash flow outlook. This means the project is affordable. The project competes with greenfield projects on the coast of the Gulf of Mexico for LNG supply into Asia. We consider these to set the marginal cost of supply for LNG in the future.

When compared against a typical greenfield development on the Gulf coast, we expect LNG Canada to benefit, on average, from lower shipping costs of some \$1/mmbtu. In terms of the gas supply – including the cost of the pipeline – we expect to see, on average, a \$0.5/mmbtu advantage. In combination, we see a \$1.5/mmbtu advantage that adds to the competitiveness of this project. When we look at the total delivered cost into Asia we expect to keep half of this advantage. In addition, the low marginal cost of supply from LNG Canada means that the project is expected to remain cash flow positive even during challenging market conditions. And then returns. The integrated project is expected to deliver an IRR of around 13%, and this at a gas price of \$8.5 per mmbtu real terms 2018 delivered in Tokyo bay. Then there is still significant upside if we together with the other joint venture partners would decide to proceed with Train 3 & 4.

The project not only competes well on the cost of LNG delivered but it also has been designed to achieve the lowest carbon intensity of any large LNG plant in operation today. This is the result of tight control on emissions in the upstream the composition of natural gas in the Montney and the use of hydro power. As you are probably aware, Shell has signed up to the methane guiding principles that aim to reduce the emission of methane through higher standards. This project will comply with those principles. And let us not forget that the LNG supplied by this project will help to improve air quality in Asia by replacing more polluting coal. Natural gas produces less than a tenth of the particulate matter compared to coal when used to generate power. This means this project is contributing to a cleaner



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environment and will be well placed in the energy transition to a lower-carbon energy system.

I imagine you would like to ask some questions so let me wrap up. I believe that LNG Canada is the right project, in the right place, at the right time. It is the right project because it delivers more and cleaner energy the world needs in the form of LNG, and does this in a very responsible and competitive way. It is in the right place because of the access to abundant and low-cost natural gas, the short shipping distance to North Asia, and the support from local communities, First Nations, and the government. And it is the right time because the project has had ample time to prepare, de-risk and make the project as good as it can be to deliver the first LNG when the market will need it. This all means I am convinced we will make this project a success.

Thank you for listening. Maarten, Clare and I will now take your questions..

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