

Metcalfe, Megan EMPR:EX

From: F.H.Grootendorst@lngcanada.ca
Sent: February 13, 2018 11:49 AM
To: Turner, Geoff J MNGD:EX
Cc: Susannah.Pierce@lngcanada.ca
Subject: RE: Employment Numbers

Hi Geoff,

Please find some job numbers for your use for Phase 1 of the project. Please let me know whether this meets your needs. Don't have split by NOC at the moment.

Generally, these are high-wage jobs.

Regards,
Frederik

Execution phase (construction)

-Contractor could employ up to 4,500 construction workers at Kitimat site (at peak) -LNGC (Owner's team) will employ about 50 people in Kitimat from FID onwards and then slowly build towards 350 at start-up in Kitimat

Operations phase

-LNGC will employ about 350 people

-Types of jobs: Operations (engineers, superintendents, supervisors, panel operators, marine loading masters), Engineering & Maintenance (planners, technicians, engineers, supervisors, inspectors, project engineers for all disciplines), Technology (engineers all disciplines), HSSE, Commercial, Finance, Contracting & Procurement, HR, Legal etc

-----Original Message-----

From: Turner, Geoff J MNGD:EX [mailto:Geoff.Turner@gov.bc.ca]
Sent: February 13, 2018 9:44 AM
To: Grootendorst, Frederik H SCAN-IGD/C/M <F.H.Grootendorst@lngcanada.ca>
Subject: Employment Numbers

Good morning Frederik,

We've been asked to pull together some numbers on jobs that would be created by the LNG Canada project during construction and operations (by NOC code if possible).

I need to have something together by early afternoon today.

I've got the high level numbers from the project website- anything you can provide beyond that would be appreciated.

Thanks
Geoff

Geoff Turner
A/Executive Director

Metcalfe, Megan EMPR:EX

From: Elise Lepine <elepine@deetken.com>
Sent: March 12, 2018 11:49 AM
To: Frederik Grootendorst
Cc: Piccinino, Ines MNGD:EX; Turner, Geoff J MNGD:EX; Andre Powell
Subject: s.21
Attachments:

Hi Frederik,

s.21

Please let me know if you have any questions.

Regards,

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Project Assumptions

| # | Question | Project Description (2013) | Model |
|----|---|--|-------------|
| 1 | Describe Phase 1 project deliverables | 2 trains of 6 mtpa each Inlet capacity 1.8 bcfd 1 storage tank (225,000 m3 capacity) | s. 17, s.21 |
| 2 | Project Cost (phase 1 only) | C\$10-15 billion (2012 dollars) | |
| 3 | Sunk Costs (are sunk costs captured in total project cost estimate?) | N/A | |
| 4 | Project useful life | 25 years | |
| 5 | Labour cost as % of total construction – why is value N/A in model? | 20% | |
| 6 | Sustaining Capital – what does spend cover? | N/A | |
| 7 | Are expansions included in the modelling. What impacts result from expansions? | Additional 12 mtpa allowed for but no schedule | |
| 8 | LNG Facility Fuel | 8.1% of inlet | |
| 9 | Electricity (Phase 1 only) | 90 mw | |
| 10 | NGL's recovered at LNG facility – volume? | Recovered NGL's railed back to Alberta | |
| 11 | Coastal Gaslink capital cost | TransCanada estimate C\$4.8 billion | |
| 12 | Coastal Gaslink tolling structure | Long term fixed contract | |
| 13 | Feed gas cost – If AECO is used what price deck has been assumed. If equity, what basin(s) used to model costs? | AECO/Equity | |
| 14 | Inflation | 2% | |
| 15 | Exchange Rate (CAD/USD) | 1.1076 | |
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Questions about EMPR LNG Canada assumptions provided Oct 18
(Copy of LNG Assumptions – LNG Canada Coastal GasLink.xlsx)

Questions

- General:
 - Which information in the spreadsheet is covered by the NDA?
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 - What is the 'LNGC Financial Model'? Do you have any further information about that model or work that you can share?
 - LNGC Financial model was built s.13,s.21 to understand the impacts that changes to fiscal levers would have on the competitiveness of the project and revenues for governments. It was the input behind the new framework for natural gas development announced on March 22.

- Employment
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s.21

[\(http://www.coastalgaslink.com/transcanada-to-construct-coastal-gaslink-pipeline-project/\)](http://www.coastalgaslink.com/transcanada-to-construct-coastal-gaslink-pipeline-project/)?

- Is this related to “pre-development” or have there been a change in plans?
- Pre-development (early works have been underway already)

- s.21 which matches the figure in BC Government press release from Oct 2. Is this just for LNGC or does it include the pipeline and upstream jobs too?

- Just LNGC
- If so, is there any way to break out the components?
- Coastal GasLink anticipates that between 15-20 permanent field positions will be created to support ongoing operations and maintenance once the project is operational
- Upstream jobs during operations are a bit more tricky – think Jeremy Higgs may have some work on this from his modelling.
- Also, we’re not sure how to reconcile conflicting numbers from LNGC: their website (link above) states 300-450 operations jobs but their press release from Oct 1 (<https://www.lngcanada.ca/wp-content/uploads/2018/10/LNG-Canada-Takes-FID-Media-Release-October-1-2018.pdf>) s.21

s.21

- May have to do with operations jobs vs number of people required to fill those positions given shift nature of work – can check in with LNGC

- s.21

- Would need to confirm this statement with BCHydro

- Investment
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- If not, then these figures would all be in CAD (not USD) and would be for BC only (not BC, Canada and abroad), right?

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- When will assumptions for import shares (even ballpark) be available?
 - The BC Government press release from Oct 2 states \$40b of total investment with \$24b of direct investment in BC – does this imply an import share of 40%? If so, what are the risks and uncertainties around this estimate?

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- Do you have a sense of the split between M&E and non-residential investment (even ballpark)?
 - As further contracts are awarded by the JFJV details should become more clear
 - If not, would this information become available to your team of some point? If so when?
 - Our previous analysis of LNG projects suggested that the vast majority of the investment would be categorized as non-residential. Thoughts?
 - A portion of the total project spend will go to the temporary accommodations being built – are these considered residential?
- LNG price and production
 - Can we please get a Canadian price instead? What we are looking for is the price in BC before the LNG is shipped abroad, that would impact government revenues. Something along the lines of a base natural gas price (AECO?) + pipeline transportation markup + liquefaction markup?
 - Sorry we weren't more explicit about this in our initial request.
 - Trying to understand why the difference to the price at the jetty versus the selling price in Asia would matter? Is it to estimate profit?
 - Could take the Asian price and subtract approximately \$1 (estimated price of delivery to Asian markets per mmbtu).
 - Assuming 7 MTPA per train, the production schedule implies one train to be producing throughout 2024 and the second to be producing for part of the year. Is that the correct interpretation? If so, what are the risks and uncertainties around this estimate?

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