From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:21 PM Todd, Melissa L MNGD:EX FW: LNG forecasts 1

Follow Up Flag: Flag Status:

Follow up Completed

From: Andre Powell [mailto:apowell@deetken.com]
Sent: Sunday, January 20, 2013 8:47 PM
To: Foster, Doug FIN:EX
Cc: Dan Breitbach; Carl Black; Flanagan, Paul FIN:EX; Hansen, Brian EMNG:EX
Subject: Re: LNG forecasts

Hi Doug,

Yes we can pull this together into an integrated framework and develop a deck this week. I would like to discuss the focus, and level of detail / length document with you, can you chat tomorrow at 2:30?

Also with respect to employment, we have estimates of direct labour (mostly from proponents) and have developed estimates of indirect and induced using I/O multipliers. This analysis might be a good start and accelerator for E&Y and/or GT's work. Happy to package this for them.

Thanks, Andre

On 20 January 2013 13:31, Foster, Doug FIN:EX < Doug.Foster@gov.bc.ca> wrote:

You have been copied on my communiqués to EY and GT re current milestones, and to also ask about third party forecasts for employment.

Can you begin preparing integrated presentations that combine the work of Deetken and those of EY and GT? Think (in fact I know) we will need these this week.

Also, we will need to incorporate employment forecasts to the extent that we can get these from third parties too.

Can you let me know your thoughts? d.

André Powell The Deetken Group Asset Management | Management Consulting <u>deetken.com</u> office: +1 604 731 4424 mobile: +1 778 999 1924

#### apowell@deetken.com

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From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:22 PM Todd, Melissa L MNGD:EX FW: FW: LNG status of work

Follow Up Flag: Flag Status: Follow up Completed

From: Andre Powell [mailto:apowell@deetken.com]
Sent: Tuesday, January 22, 2013 7:14 AM
To: Foster, Doug FIN:EX
Cc: Flanagan, Paul FIN:EX; Dan Breitbach; Carl Black; Hansen, Brian EMNG:EX
Subject: Re: FW: LNG status of work

I can do a short call at 12:30 (during lunch) for about 15 minutes.

On 22 January 2013 06:46, Foster, Doug FIN:EX <<u>Doug.Foster@gov.bc.ca</u>> wrote:

Your views? D.

From: Daum, Patti [mailto:Patti.Daum@ca.gt.com] Sent: Mon, January 21, 2013 10:21 PM

To: Foster, Doug FIN:EX Cc: McKenna, Matthew; Bank, Darren Subject: RE: LNG status of work

Hi Doug,

The bad news is I cannot talk at noon tomorrow. I'm hoping Darren can and I think Matt is available by 12:30, if the call can be put off for half an hour (which would be our preference).

The good news is that Australia has jumped on this and are working as we speak. They have indicated they can get many deliverables to us by Friday (depending on the success of their research, but they've got good leads/ideas) which would enable our team to run some sensitivities on the model more quickly than I originally thought.

Unfortunately, I am really tied up tomorrow on various commitments I cannot break, but either Darren or Matt (or both) will be able to speak with you.

Thanks.

Patti

Not Responsive

Not Responsive

d.

From: Daum, Patti [mailto:Patti.Daum@ca.gt.com] Sent: Monday, January 21, 2013 4:26 PM To: Foster, Doug FIN:EX Cc: McKenna, Matthew; Bank, Darren Subject: RE: LNG status of work

Hi Doug,

Thanks for your email. Based on our discussion last week, we have composed a detailed listing of questions for our Australian counterparts. We have sent them our list, and we will be connecting with them this week (hopefully tomorrow) to determine which of our desired "asks" they think they can provide information on, and how quickly they can do so.

It would be desirable for us to have from you, a schedule of "milestones" (for lack of a better word), to understand what exactly you need from us, and when. When we received your initial request two Fridays ago, we staffed the work with the most senior level of staff. It would be our preference to plan the work according to your timeframes, and have the opportunity to lever it appropriately. I appreciate that there is urgency to the entire assignment, but if there are any interim milestones we should know about, we'd love to discuss that with you.

As it stands, Matt, Darren and I would be pleased to discuss this with you on the phone at your convenience. Matt and I, and I believe Darren, are available tomorrow anytime after 9:30 PST. I am not available after 11:30 PST.

To answer your question on employment forecasts, we do have the expertise to provide you that information.

Let us know if you'd like to chat tomorrow. Thanks Doug.

Patti

From: Foster, Doug FIN:EX [mailto:Doug.Foster@gov.bc.ca]
Sent: Sunday, January 20, 2013 1:16 PM
To: Daum, Patti; McKenna, Matthew
Cc: 'Andre Powell'; 'Dan Breitbach'; 'Carl Black'; Freeman, Lisa FIN:EX; Hansen, Brian EMNG:EX
Subject: RE: LNG status of work

Patti/Mathew, I am writing to thank you for our follow up call on January 16<sup>th</sup>; to confirm some immediate goals and to also ask about some additional work we need.

Just to recap:

• Grant Thornton (GT) provided the Province with an initial letter last Tuesday, which outlined a number of considerations, information and further directions need for GT to more fully carry out the needed forecasting work assignment; However, the GT information was helpful in supporting internal provincial deliberations going on at that time;

Not Responsive

I would appreciate it if you could confirm this understanding and give us a sense of what can be provided by the next key date.

We have also most recently been asked about providing a set of potential employment forecasts to go along side with the analysis of provincial revenues. Is it possible that GT may be able to undertake work that would answer the following?

• How many direct BC jobs might be created by the 5 – 7 plant LNG plant/pipeline projects into the future?

 How many indirect BC jobs might be created by the 5 – 7 plant LNG plant/pipeline projects into the future? • How many total BC jobs (direct and indirect) might be created by the 5 – 7 plant LNG plant/pipeline projects into the future?

• What are the key assumptions/sensitivities and risks associated with these forecasts?

It would be useful to express all jobs as full time equivalents rather than full/part time.

It would also be useful to calendar these over the forecast track by year, and then to accumulated the totals.

I would appreciate hearing your thoughts on whether this is possible.

As committed before, the Province plans to fully vet all material with GT in connection with this work, prior to any information being made public, in whatever form.

d.

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André Powell The Deetken Group Asset Management | Management Consulting <u>deetken.com</u> office: +1 604 731 4424 mobile: +1 778 999 1924 apowell@deetken.com

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From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:22 PM Todd, Melissa L MNGD:EX FW: LNG Project (Employment Forecasts)

Follow Up Flag: Flag Status: Follow up Completed

From: Andre Powell [mailto:apowell@deetken.com]
Sent: Wednesday, January 23, 2013 9:19 AM
To: Bastin, Doug; Abramovic-Wong, Anna
Cc: Nichol, Jennifer; Bank, Darren; Foster, Doug FIN:EX; Dan Breitbach; Carl Black; McKenna, Matthew; Freeman, Lisa
FIN:EX; Hansen, Brian EMNG:EX
Subject: Re: LNG Project (Employment Forecasts)

Hi Doug,

Thanks for this. We are currently pulling this data together and will get it to you by end of day today. Thanks, Andre The Deetken Group

From: "Bastin, Doug" <<u>Doug.Bastin@ca.gt.com</u>> Sender: "Abramovic-Wong, Anna" <<u>Anna.Wong@ca.gt.com</u>> Date: Wed, 23 Jan 2013 00:31:25 +0000 To: <u>apowell@deetken.com<apowell@deetken.com</u>> Cc: Nichol, Jennifer<Jennifer.Nichol@ca.gt.com>; Bank, Darren<<u>Darren.Bank@ca.gt.com</u>>; doug.foster@gov.bc.ca<doug.foster@gov.bc.ca>; dbreitbach@deetken.com<dbreitbach@deetken.com>; cblack@deetken.com<cblack@deetken.com>; McKenna, Matthew<<u>Matthew.McKenna@ca.gt.com</u>>; lisa.freeman@gov.bc.ca<lisa.freeman@gov.bc.ca>; brian.hansen@gov.bc.ca<brian.hansen@gov.bc.ca> Subject: LNG Project (Employment Forecasts)

Andre:

Further to our conference call this afternoon, we are pleased to be working with you on this portion of the LNG Project.

To develop the employment forecasts, we require the following background information:

- 1. Plant location
- 2. Plant size and capacity
- 3. Production volume estimates
- 4. Development cost estimates (broken down by material purchase source provincial/national/international)
- 5. Supplier services required (operations)
- 6. Project timing construction period and start of operations
- 7. Direct employment estimates during construction and in operation
- 8. Indirect and induced employment estimates
  - a. Multiplier and sources
  - b. Assumptions

This will give us a good start. If you have anything else that you think would be helpful and may expedite the process, please forward it to us.

Thanks in advance.

Doug

Doug Bastin, CMC | Partner, Grant Thornton Consulting Grant Thornton LLP Suite 1600, Grant Thornton Place | 333 Seymour Street | Vancouver | BC | V6B 0A4 T +1 604 443 2149 | C +1 604 506 0120 | F +1 604 685 6569 E Doug.Bastin@ca.gt.com | W http://www.grantthornton.ca

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From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:24 PM Todd, Melissa L MNGD:EX FW: Validations

Follow Up Flag: Flag Status: Follow up Completed

From: Andre Powell [mailto:apowell@deetken.com] Sent: Saturday, January 26, 2013 10:05 AM To: Hansen, Brian EMNG:EX Subject: Re: Validations

Not Responsive

With respect to employment, we had a call yesterday and we have provided additional details, also BC Stats are helping them, GT said they will shoot for Friday next week for results.

Not Responsive

André Powell The Deetken Group Asset Management | Management Consulting <u>deetken.com</u> office: +1 604 731 4424 mobile: +1 778 999 1924 apowell@deetken.com

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From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:26 PM Todd, Melissa L MNGD:EX FW: Reviewing Material from E&Y and GT 1

Follow Up Flag: Flag Status: Follow up Completed

From: Andre Powell [mailto:apowell@deetken.com]
Sent: Monday, February 4, 2013 10:58 AM
To: Foster, Doug FIN:EX
Cc: Dan Breitbach; Carl Black; Flanagan, Paul FIN:EX; Hansen, Brian EMNG:EX
Subject: Re: Reviewing Material from E&Y and GT

Not Responsive

Cheers, Andre

On 4 February 2013 10:36, Foster, Doug FIN:EX <<u>Doug.Foster@gov.bc.ca</u>> wrote:

Thanks. I made an attempt to do a topic box over the weekend and some key charts needed are:

Not Responsive

3) Incremental employment and select key assumptions by both external forecasters;

Not Responsive

Thoughts? d

From: Andre Powell [mailto:apowell@deetken.com] Sent: Monday, February 4, 2013 10:19 AM To: Foster, Doug FIN:EX Cc: Dan Breitbach; Carl Black; Flanagan, Paul FIN:EX; Hansen, Brian EMNG:EX Subject: Reviewing Material from E&Y and GT

Hi Doug,

We are currently reviewing the material from E&Y and GT and will get comments back and an updated draft deck today.

Not Responsive

Not Responsive

Cheers,

Andre

André Powell The Deetken Group

Asset Management | Management Consulting

deetken.com office: +1 604 731 4424

mobile: +1 778 999 1924

#### apowell@deetken.com

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From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:26 PM Todd, Melissa L MNGD:EX FW: Comments to GT regarding latest draft

Follow Up Flag: Flag Status:

Follow up Completed

From: Andre Powell [mailto:apowell@deetken.com] Sent: Monday, February 4, 2013 5:51 PM To: Foster, Doug FIN:EX Cc: Dan Breitbach; Carl Black; Flanagan, Paul FIN:EX; Hansen, Brian EMNG:EX Subject: Comments to GT regarding latest draft

Hi Doug

Here are my comments:

1) 102,500 direct jobs during construction, should be person years of employment; is this also true of indirect and induced?

2) 98.4 MTA reference on pg 7 appears to be the capex number

2) We should discuss how the indirect and direct jobs estimates were generated, in particular are we picking up NG feedstock as an input? If so it might be better to consider the employment as plant, pipe and upstream to be clear as to where the jobs are coming from.

3) We should remove all reference to individual plants in the report. All reporting should be aggregate with no references to the individual plants or their locations.

4) We should remove all reference to "proponent" information, this should be described as data provided by the Province and its advisers developed from industry benchmarks and other sources.

Point 4 should also apply to E&Y's final report.

Cheers,

Andre

André Powell The Deetken Group Asset Management | Management Consulting deetken.com office: +1 604 731 4424 mobile: +1 778 999 1924 apowell@deetken.com

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Sent: Feb 4, 2013 8:57 PM

Hansen, Brian MNGD:EX From: Tuesday, December 10, 2013 12:26 PM Sent: Todd, Melissa L MNGD:EX To: Subject: FW: re LNG Follow up Follow Up Flag: Flag Status: Completed -----Original Message-----From: Andre Powell [mailto:apowell@deetken.com] Sent: Tuesday, February 5, 2013 7:18 AM To: Hansen, Brian EMNG:EX Subject: Re: LNG Hi Brian, The GT labour market work is almost ready, we are on a call with them this morning to make some changes/updates to their work. EY is not intending to provide labour market forecasts. For your meeting this am, I would go with the GT numbers as provisional/work in progress based on the deck that. Summary o GT: During Construction (person years) 102k direct 191 indirect 58 induced During Ops (Jobs) 2400 direct 60k indirect 13k induced Cheers, Andre -----Original Message-----From: Brian Hansen To: Andre Powell Subject: LNG

Not Responsive

Andre, on the jobs and revenue numbers and the GT and E&Y work, are we close to being to advance some validated metrics? I ask as there is a meeting tomorrow with folks from the centre around these metrics and I assume Doug is close to finished Brian Sent from my iPhone The Deetken Group

From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:26 PM Todd, Melissa L MNGD:EX FW: LNG BH

Follow Up Flag: Follow up Flag Status: Completed

-----Original Message-----From: Andre Powell [mailto:apowell@deetken.com] Sent: Tuesday, February 5, 2013 7:20 AM To: Foster, Doug FIN:EX; Hansen, Brian EMNG:EX Cc: Flanagan, Paul FIN:EX; Carl Black; Dan Breitbach Subject: Re: LNG

Hi Doug, We'll start on these updates right away. Plus any updates that come from GT today. Andre The Deetken Group

-----Original Message-----From: "Foster, Doug FIN:EX" <<u>Doug.Foster@gov.bc.ca</u>> Date: Mon, 4 Feb 2013 22:47:28 To: Hansen, Brian EMNG:EX<<u>Brian.Hansen@gov.bc.ca</u>> Cc: Flanagan, Paul FIN:EX<<u>Paul.Flanagan@gov.bc.ca</u>>; 'apowell@deetken.com'<<u>apowell@deetken.com</u>> Subject: RE: LNG

I see meeting is tomorrow at 9AM. So there isn't time to do much more at this hour. Carl sent deck around earlier this evening as below and attached. You may have to go with the attached and know that more work being done.

Not Responsive

----Original Message----From: Hansen, Brian EMNG:EX Sent: Monday, February 4, 2013 8:46 PM To: Foster, Doug FIN:EX Subject: LNG

So spoke to Peter and he thinks the meeting tomorrow will be a call to confirm the job and revenue numbers, presumably as validated by GT and E&Y. Is this work close now?

Sent from my iPhone

From: Carl Black [mailto:cblack@deetken.com]
Sent: Monday, February 4, 2013 7:11 PM
To: Foster, Doug FIN:EX
Cc: Dan Breitbach; Flanagan, Paul FIN:EX; Hansen, Brian EMNG:EX; Andre Powell
Subject: Re: Reviewing Material from E&Y and GT

Hi Doug,

An updated draft is attached that incorporates both the preliminary GT revenue estimates and the GT employment estimates. Please note the caveat on the employment estimates slide with respect to the interpretation of the GT employment numbers. We can clarify with them tomorrow whether they view the estimated indirect and induced effects as measured in "person-years" or "jobs" as they've labelled their table.

All the Best, Carl On Mon, Feb 4, 2013 at 10:18 AM, Andre Powell <<u>apowell@deetken.com</u>> wrote: Hi Doug,

We are currently reviewing the material from F&V and GT and will get comments back and an updated draft deck today.

Not Responsive

Not Responsive

Cheers,

Andre

André Powell The Deetken Group Asset Management | Management Consulting deetken.com office: +1 604 731 4424 mobile: +1 778 999 1924 apowell@deetken.com

From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:27 PM Todd, Melissa L MNGD:EX FW: FW: Reports

Follow Up Flag: Flag Status: Follow up Completed

Not Responsive

Neil, the drafts are in various stages and continue to evolve due to:

• As we further discuss methodologies and assumptions, further work is needed in their analysis and projections, which has required them each to go back to their Australian folks – it also changes their report contents;

• In the case of GT, we added extra work late on employment forecasts which they are still finalizing and will be incorporating into their report; and

• Reviews by them and us to ensure that details are removed to protect proponent information sources; and further reviews of their legal folks are requiring further changes too.

In order to produce the information we have provided so far, we have asked each to concentrate on firstly getting us the numbers, ranges and assumptions so we can build into our combined analysis...they can fuss with the final reports later.

We expect a new report on employment from GT this morning, after having talked to them about direct versus indirect versus induced assumptions and methodologies, as well as our need to focus on jobs as we discussed earlier.

We will check that against the latest projections we have provided.

By this Friday, we are asking each to draw a line and reflect everything we've done to date in a draft report.

Also, we have made a firm commitment that anything we say about them or their data being used will first be vetted by each of them before we publish.

Also, if we intend to release their reports, we have never discussed that with them and so could significantly impact the final products that might be done.

Does that help? D.

From: Sweeney, Neil PREM:EX Sent: Wednesday, February 6, 2013 9:08 AM To: Foster, Doug FIN:EX; Hansen, Brian EMNG:EX Subject: Reports Guys, can we get the actual drafts from GT and the other folks?

Thanks,

Neil

André Powell The Deetken Group Asset Management | Management Consulting <u>deetken.com</u> office: +1 604 731 4424 mobile: +1 778 999 1924 <u>apowell@deetken.com</u>

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From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:29 PM Todd, Melissa L MNGD:EX FW: LNG Employment Impacts Report - Draft #3 (Feb 7)

Follow Up Flag: Flag Status: Follow up Completed

From: Andre Powell [mailto:apowell@deetken.com]
Sent: Thursday, February 7, 2013 2:33 PM
To: Hansen, Brian EMNG:EX
Cc: Foster, Doug FIN:EX; Carl Black; Dan Breitbach; Flanagan, Paul FIN:EX; Taylor, Sheila A FIN:EX
Subject: Re: LNG Employment Impacts Report - Draft #3 (Feb 7)

Not Responsive

On 7 February 2013 14:28, Hansen, Brian EMNG:EX <<u>Brian.Hansen@gov.bc.ca</u>> wrote: Not Responsive

Sent from my iPhone

On 2013-02-07, at 2:05 PM, "Foster, Doug FIN:EX" <<u>Doug.Foster@gov.bc.ca</u><mailto:<u>Doug.Foster@gov.bc.ca</u>>> wrote:

Not Responsive

From: Carl Black [mailto:<u>cblack@deetken.com]</u> Sent: Thursday, February 7, 2013 1:56 PM To: Andre Powell Cc: Foster, Doug FIN:EX Subject: Fwd: FW: LNG Employment Impacts Report - Draft #3 (Feb 7)

Hi Andre, Here is the GT Employment Estimate Update.

Not Responsive

Carl

------ Forwarded message ------From: Foster, Doug FIN:EX <<u>Doug.Foster@gov.bc.ca</u><mailto:<u>Doug.Foster@gov.bc.ca</u>>> Date: Thu, Feb 7, 2013 at 1:52 PM Subject: FW: LNG Employment Impacts Report - Draft #3 (Feb 7) To: "<u>Andre.Koncewicz@ca.ey.com</u><mailto:<u>Andre.Koncewicz@ca.ey.com</u>>" <<u>Andre.Koncewicz@ca.ey.com</u><mailto:<u>Andre.Koncewicz@ca.ey.com</u>>>, Dan Breitbach <<u>dbreitbach@deetken.com</u><mailto:<u>dbreitbach@deetken.com</u>>>, Carl Black <<u>cblack@deetken.com</u><mailto:<u>cblack@deetken.com</u>>> Cc: "Flanagan, Paul FIN:EX" <<u>Paul.Flanagan@gov.bc.ca</u><mailto:<u>Paul.Flanagan@gov.bc.ca</u>>>, "Hansen, Brian EMNG:EX" <Brian.Hansen@gov.bc.ca<mailto:Brian.Hansen@gov.bc.ca>>

Dan, over to you. I when i discussed with her, she didn't seem to understand the base case versus high we now have assumed.

Not Responsive Can you provide advice on anything that should be added or removed from report? D.

From: Nichol, Jennifer [mailto:Jennifer.Nichol@ca.gt.com<mailto:Jennifer.Nichol@ca.gt.com>] Sent: Thursday, February 7, 2013 1:43 PM To: Foster, Doug FIN:EX Subject: LNG Employment Impacts Report - Draft #3 (Feb 7)

Hi Doug,

As discussed, please find attached the draft report. I am available to discuss this version at any time, with the exception of 2:15 - 3:45 today.

Best regards,

Jennifer

Jennifer Nichol | Senior Manager Grant Thornton LLP Suite 1600, Grant Thornton Place | 333 Seymour Street | Vancouver | BC | V6B 0A4 T <u>+1 604 443 2146<tel:%2B1%20604%20443%202146</u>> | F <u>+1 604 685</u> <u>6569<tel:%2B1%20604%20685%206569</u>> |M <u>+1 778 288-5303<tel:%2B%201%20778%20288-5303</u>> E Jennifer.Nichol@ca.gt.com<mailto:Jennifer.Nichol@ca.gt.com> | W http://www.grantthornton.ca/

<image001.jpg> <<u>http://www.grantthornton.ca/</u>> <image002.jpg>

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André Powell The Deetken Group Asset Management | Management Consulting <u>deetken.com</u> office: <u>+1 604 731 4424</u> mobile: <u>+1 778 999 1924</u> <u>apowell@deetken.com</u>

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Scenario: All jobs (full time equivalent) for 2, 4-train plants and 3 2-train plants with a small sub-train plan

	Average	Total	2013	2014
Construction				
Direct	11,389	102,500	1,600	1,600
Indirect	22,078	198,700	3,000	3,000
Induced	5,889	53,000	800	800
Construction sub-total	39,356	354,200	5,400	5,400
Operations		n in suite		Na Sta
Direct	2,400			
Indirect	61,700		•	
Induced	11,100			
Operations sub-total	75,200			
Total (All)	а.		5,400	5,400

### **Grant Thornton Employment Forecast**

2023	2024	2025	2026	2027	2028	2029	2030	2031
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				•				
					では、供加		and the second	<b>派令</b> 主称
2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
61,700	61,700	61,700	61,700	61,700	61,700	61,700	61,700	61,700
11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100
75,200	75,200	75,200	75,200	75,200	75,200	75,200	75,200	75,200
75,200	75,200	75,200	75,200	75,200	75,200	75,200	75,200	75,200

From: Sent: To: Subject: Attachments: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:45 PM Todd, Melissa L MNGD:EX FW: Updated Revenue/Employment Deck LNG Revnue Forecast v2.6.2013.pptx

Follow Up Flag: Flag Status: Follow up Completed

From: Carl Black [mailto:cblack@deetken.com] Sent: Wednesday, February 6, 2013 1:49 PM To: Hansen, Brian EMNG:EX Cc: Andre Powell; Flanagan, Paul FIN:EX; Dan Breitbach Subject: Updated Revenue/Employment Deck

Hi Brian,

An updated version of the presentation is attached. The charts showing General Revenue versus Legacy Fund revenue have been broken down further to show each revenue component.

Please note that we are currently working through the updated Grant Thornton employment forecasts and will provide another update to the deck once we have incorporated them. This subsequent update will also affect the personal income tax estimates on the revenue side.

Thanks, Carl

> NGD-2013-00037 Page 29

Pages 30 through 45 redacted for the following reasons:

s.12

From: Sent: To: Subject: Attachments: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:45 PM Todd, Melissa L MNGD:EX FW: Revenue and Employment Forecast "Data Library" Revenue\_Employment\_Forecast\_Data\_Library\_v2.10.2013.xlsx

Follow Up Flag: Flag Status: Follow up Flagged

From: Carl Black [mailto:cblack@deetken.com] Sent: Sunday, February 10, 2013 6:12 PM To: Foster, Doug FIN:EX Cc: Andre Powell; Hansen, Brian EMNG:EX; Dan Breitbach Subject: Revenue and Employment Forecast "Data Library"

Hi Doug,

An updated version of the "Data Library" we've been working on today is attached. Just want to reiterate below the issues we have already raised:

Not Responsive

Not Responsive

To the best

of my knowledge we did provide the employment estimates for these two scenarios to GT so they could be incorporated quickly

- GT model will need to be updated to include the LNG and NG volume estimates for 2017 and 2018. We provided this data already

All the Best, Carl All values in Millions of Dollars

Note: Carbon Tax assumed

Not Responsive

NGD-2013-00037 Page 47 Not Responsive

÷

# **Employment Forecasts - Produced by Grant Thornton**

FTEs	82 MTA	120 MTA
Construction (Average per construction year)		
Direct	11,389	16,667
Indirect	22,078	32,309
Induced	5,889	8,618
Operations (Typical Year)		
Direct	2,400	3,512
Indirect	61,700	90,293
Induced	11,100	16,244

revenue neutral and therefore excluded from total revenue rows

Not Responsive

Not Responsive

Not Responsive

## **Grant Thornton Employment Forecast**

	Average	Total		2013	2014
Base Case - 82 MTA					2103
Construction					
Construction	11 200	102 500		1 000	1.00
Direct	11,389	102,500		1,600	1,600
Indirect	22,078	198,700		3,000	3,000
Induced	5,889	53,000		800	800
Construction sub-total	39,356	354,200	a da ang	5,400	5,400
Operations					
Direct	2,400	S-ANA-DIST.			
Indirect	61,700				
Induced	11,100				
Operations sub-total	75,200				
				F 400	E 400
Total (All)	114,556			5,400	5,400
Total (All)	114,556			5,400	5,400
Total (All) High Case - 120 MTA				5,400	5,400
				5,400	5,400
High Case - 120 MTA		150,000		2,341	2,34
High Case - 120 MTA Construction	A	150,000 290,780		2,341	2,34
High Case - 120 MTA Construction Direct	16,667				2,34 4,39
High Case - 120 MTA Construction Direct Indirect	A 16,667 32,309	290,780		2,341 4,390	2,34 4,39 1,17
High Case - 120 MTA Construction Direct Indirect Induced Construction sub-total	A 16,667 32,309 8,618	290,780 77,561		2,341 4,390 1,171	2,34 2,34 4,39 1,17 7,902
High Case - 120 MTA Construction Direct Indirect Induced	A 16,667 32,309 8,618 57,593	290,780 77,561		2,341 4,390 1,171	2,34 4,39 1,17
High Case - 120 MTA Construction Direct Indirect Induced Construction sub-total	A 16,667 32,309 8,618 57,593 3,113	290,780 77,561		2,341 4,390 1,171	2,34 4,39 1,17
High Case - 120 MTA Construction Direct Indirect Induced Construction sub-total Operations Direct	A 16,667 32,309 8,618 57,593	290,780 77,561		2,341 4,390 1,171	2,34 4,39 1,17
High Case - 120 MTA Construction Direct Indirect Induced Construction sub-total Operations Direct Indirect	A 16,667 32,309 8,618 57,593 3,113 79,776	290,780 77,561		2,341 4,390 1,171	2,34 4,39 1,17

2015	2016	2017	2018	2019	2020	2021	2022
6,900	21,600	21,600	18,500	14,700	11,000	5,000	
13,400	41,900	41,900	35,900	28,600	21,300	9,700	
3,500	11,200	11,200	9,600	7,600	5,700	2,600	
23,800	74,700	74,700	64,000	50,900	38,000	17,300	b = 1
		400	400	1,100	1,700	2,400	2,400
		9,000	9,000	27,000	43,700	61,700	61,700
		1,600	1,600	4,800	7,800	11,100	11,100
		11,000	11,000	32,900	53,200	75,200	75,200
23,800	74,700	85,700	75,000	83,800	91,200	92,500	75,200
10,098	31,610	31,610	27,073	21,512	16,098	7,317	
19,610	61,317	61,317	52,537	41,854	31,171	14,195	
5,122	16,390	16,390	14,049	11,122	8,341	3,805	
34,829	109,317	109,317	93,659	74,488	55,610	25,317	
		585	585	1,610	2,488	3,512	3,51
		13,171	13,171	39,512	63,951	90,293	90,29
		2,341	2,341	7,024	11,415	16,244	16,24
		16,098	16,098	48,146	77,854	110,049	110,049
34,829	109,317	125,415	109,756	122,634	133,463	135,366	110,049

2023	2024	2025	2026	2027	2028	2029	2030	2031
2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
61,700	61,700	61,700	61,700	61,700	61,700	61,700	61,700	61,700
11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100
75,200	75,200	75,200	75,200	75,200	75,200	75,200	75,200	75,20
75,200	75,200	75,200	75,200	75,200	75,200	75,200	75,200	75,20
			Contraction of the		Marco - N			
					r s			
3 512	3 512	3 512	3 512	3 512	3 512	3 512	3 512	3 51
3,512 90,293								
3,512 90,293 16,244	90,29							
90,293	90,293	90,293	90,293	90,293	90,293	90,293	90,293	3,51 90,29 16,24 <i>110,04</i>

2032	2033	2034	2035	2036	2037	2038
2,400	2,400	2,400	2,400	2,400	2,400	2,400
61,700	61,700	61,700	61,700	61,700	61,700	61,700
11,100	11,100	11,100	11,100	11,100	11,100	11,100
75,200	75,200	75,200	75,200	75,200	75,200	75,200
75,200	75,200	75,200	75,200	75,200	75,200	75,200
					State of State of State	ALC: NO
2 542	2 542	2 542	2 542	2 542	2.542	2.545
3,512	3,512	3,512	3,512	3,512	3,512	
90,293	90,293	90,293	90,293	90,293	90,293	90,293
90,293 16,244	90,293 16,244	90,293 16,244	90,293 16,244	90,293 16,244	90,293 16,244	90,293 16,244
90,293	90,293	90,293	90,293	90,293	90,293	3,512 90,293 16,244 <i>110,049</i>

From: Sent: To: Subject: Hansen, Brian MNGD:EX Tuesday, December 10, 2013 12:47 PM Todd, Melissa L MNGD:EX FW: FW: LNG Plant - Employment Impacts Report (revised on Feb 16)

From: Carl Black [mailto:cblack@deetken.com]
Sent: Saturday, February 16, 2013 5:37 PM
To: Foster, Doug FIN:EX; Hansen, Brian EMNG:EX
Cc: Andre Powell (apowell@deetken.com); Dan Breitbach
Subject: Re: FW: LNG Plant - Employment Impacts Report (revised on Feb 16)

Hi All,

I have a few comments for your consideration:

- Page 3, first paragraph - the phrasing around the operating jobs could perhaps be made more lucid. I could see someone reading "the number of full time equivalent jobs generated annually is estimated to be 75,200" and thinking that these jobs will accumulate year after year as opposed to being the same people doing the same jobs year after year. I prefer the way they put it in bullet 2 on page 11 - "The ongoing annual employment impacts..." On page 3 then, I would propose something like, "the number of ongoing annual full time equivalent jobs is estimated to be 75,200 over the life of the project."

- Page 4, first paragraph - see above comment re: "generated" in reference to ongoing annual operations jobs

- Pages 5 and 17, Compensation Table - Could include a second bullet for "construction-indirect" which lists the types of industries and workers that are relevant (i.e. similar to the second bullet next to "operations-indirect").

- Page 13 - The comparison between the construction jobs for BC plants and the Australia plant could be made more clear if the two were expressed in the same units. At the moment the BC jobs are expressed per plant for the *total consturction period* while the Australia jobs are expressed per plant *per year*. I.e. either gross up Australia numbers by multiplying by construction years assumed in the 2010 study or divide the BC number by the average number of construction years per plant that we assumed.

- Page 16, paragraph 1 - change "FTES" to "FTE jobs"

All the best, Carl

On Sat, Feb 16, 2013 at 4:41 PM, Dan Breitbach <<u>dbreitbach@deetken.com</u>> wrote: I don't have any additional comments - I think this draft looks good. For the purposes of comparing our estimates with the Labour Demand Outlook for BC's Natural Gas Industry, it would be good to have the underlying model so we can compare the multipliers used.

Can we ask them to send the model?

Cheers, Dan On Sat, Feb 16, 2013 at 3:47 PM, Hansen, Brian EMNG:EX < Brian.Hansen@gov.bc.ca > wrote:

#### FYI

From: Hansen, Brian EMNG:EX Sent: Saturday, February 16, 2013 3:46 PM To: Foster, Doug FIN:EX Cc: Flanagan, Paul FIN:EX Subject: RE: LNG Plant - Employment Impacts Report (revised on Feb 16)

Again, should reference LNG Projects throughout, they've footnoted plant and pipe but still refer throughout to LNG plants. They can also drop the conveyance letter to me. Rest looks fine.

From: Foster, Doug FIN:EX Sent: Saturday, February 16, 2013 3:14 PM To: Hansen, Brian EMNG:EX; Flanagan, Paul FIN:EX Subject: Fw: LNG Plant - Employment Impacts Report (revised on Feb 16)

On bb. Can u have last look and also flip to andre, dan and carl for last look too? D

From: Nichol, Jennifer [mailto:Jennifer.Nichol@ca.gt.com] Sent: Saturday, February 16, 2013 02:55 PM Pacific Standard Time To: Foster, Doug FIN:EX Cc: Bastin, Doug <<u>Doug.Bastin@ca.gt.com</u><mailto:<u>Doug.Bastin@ca.gt.com</u>>>

Subject: LNG Plant - Employment Impacts Report (revised on Feb 16)

Hi Doug,

Attached please find the revised report. The only revision I did not make is the one you have suggested regarding the definitions. This is because we are using standard definitions, many of which are associated with the BC Stats I/O model.

I am available today and tomorrow, if you notice any other revisions that are required.

Best regards,

Jennifer

From: Foster, Doug FIN:EX [mailto:Doug.Foster@gov.bc.ca]
Sent: Friday, February 15, 2013 4:37 PM
To: Nichol, Jennifer
Cc: 'Andre Powell'; Bank, Darren; Bank, Darren; 'Dan Breitbach'; Hansen, Brian EMNG:EX
Subject: RE: short reports - revenue and employment

Here are some comments:

Page 1

After process, perhaps insert a restriction piece along these lines: The employment estimates contained in this report are intended to measure the potential impact created under a given set of assumptions for a particular sector. The estimates are not forecasts and this report is not intended to attribute any probability that those impacts will occur or not occur in future.

The estimates are merely to illustrate the potential employment impacts under a given set of assumptions, following a systematic approach to analyzing and modelling collected information.

The estimates do not reflect the actual or expected total impact on the overall BC employment outlook, as changes in other sectors will also affect that outlook.

#### Page 2

We talked earlier about leading the discussions with the 39k jobs and 75k jobs and them peeling back to the build up which is person years or annual FTEs.

This would help readers move from what they understand to something they understand less. Same comment for page 10 -12

#### Page 4

Para 1: says conduction due diligence on proposals. Want to break away from risk that we relying on confidential info in doing estimates. Perhaps just say Province interested in understanding potential magnitude from LNG development in BC and has developed a stated scenario around which GT has developed estimates of employment impacts.

#### Page 5

Either in definitions or later, you may find the information bulletin as useful in explain what direct, indirect and induced are.

Under assumptions, you may wish to add to 5 plants, that it is of mixed capacity and results in output of 82MTA annually.

#### Page 6

As we discussed earlier, helpful to include a section that further breaks down the other supplier industries and gives a list of what's in. Also referred to in table 3.

Generally through the document we talk about the 5 plants proposed for BC. To stay neutral and not suggest we have given out propriety information, we could just say the 5 plants assumed in this scenario provided by the province.

Hopefully these can be incorporated today if you agree with the suggestions. D.

From: Nichol, Jennifer [mailto:<u>Jennifer.Nichol@ca.gt.com]</u> Sent: Friday, February 15, 2013 1:48 PM To: Foster, Doug FIN:EX Subject: RE: short reports - revenue and employment

#### Hi Doug,

Can we now submit the Employment Impacts report in final?

Jennifer

From: Foster, Doug FIN:EX [mailto:Doug.Foster@gov.bc.ca]
Sent: Friday, February 15, 2013 1:29 PM
To: Daum, Patti; McKenna, Matthew; Bank, Darren
Cc: 'Andre Powell'; Flanagan, Paul FIN:EX; Hansen, Brian EMNG:EX; Nichol, Jennifer

Subject: short reports - revenue and employment

Not Responsive

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--Dan Breitbach The Deetken Group office: <u>604.731.4424</u> cell: <u>415.684.3591</u> e-mail: <u>dbreitbach@deetken.com</u>

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