Message

From: HARTWICK Ken -FINANCE [/O=OH/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=217097]
Sent: 22/04/2017 5:06:55 PM
To: CROZZOLI Carlo -CBUSDEV&STRT [/o=OH/ou=Toronto/cn=Recipients/cn=190928]
Subject: RE: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

I hope you made it home. Probably in time to see Boston in double OT.
We now we are at 50% is threat how I should read this. It would be good to go through this. A few questions for next week
1. How are the costs of conservation being factored in including the amounts continuing to bespent

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7. Transmission build that is being recovered through rates to support renewables hat should be recovered over longer periods

I am sure there are more.

Sent with BlackBerry Work (www.blackberry.com)

From: CROZZOLI Carlo -CBUSDEV&STRT <carlo.crozzoli@opg.com>
Date: Friday, Apr 21, 2017, 6:27 PM
To: HARTWICK Ken -FINANCE <ken.hartwick@opg.com>
Subject: Fw: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

Eva's early take on this is gas plus wind solar gets u half way there.

From: JANOSSY Eva -CBUSDEV&STRT <eva.janossy@opg.com>
Sent: Friday, April 21, 2017 6:24 PM
To: CROZZOLI Carlo -CBUSDEV&STRT
Cc: SCHABAS Greg -CBUSDEV&STRT; ELLIOTT Glen -CBUSDEV&STRT; BUTCHER Nicolle -CBUSDEV&STRT
Subject: RE: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

Carlo,

Greg and others are working on this and other aspects of the GA Trust analysis as fast as possible.

These results will be available Tuesday.

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Have a good weekend!

Eva

From: CROZZOLI Carlo -CBUSDEV&STRT
Sent: Friday, April 21, 2017 4:03 PM
To: SCHABAS Greg -CBUSDEV&STRT; BUTCHER Nicolle -CBUSDEV&STRT
Cc: JANOSSY Eva -CBUSDEV&STRT; SCHABAS Greg -CBUSDEV&STRT; ELLIOTT Glen -CBUSDEV&STRT
Subject: Re: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

Hi Greg and Eva

Just checking in on status if this work. This has turned into a significant issue on the file, so I would like to see the next set if analysis with renewables and then have some time to iterate over next week.

Please advise when next turn will be.

Thanks.

Carlo

From: SCHABAS Greg -CBUSDEV&STRT
Sent: Wednesday, April 19, 2017 3:41 PM
To: CROZZOLI Carlo -CBUSDEV&STRT; BUTCHER Nicolle -CBUSDEV&STRT
Cc: JANOSSY Eva -CBUSDEV&STRT; SCHABAS Greg -CBUSDEV&STRT
Subject: RE: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

Hi Carlo, Nicolle

We've updated the analysis with the following :

- The main analysis now includes 40-year amortization. As with the previous version of this deck, only future capital cost payments are reamortized (i.e. those after April 30, 2017)
- Appendix A (Slide 9 onwards) shows the impact if all (past and future) capital cost payments are reamortized for 25, 30 and 40 years instead of 20. Future system savings are less than in the main analysis because more capital is left to be repaid in future periods.
- Slide 13 in Appendix A shows the total overpayment to date if all costs are amortized over 25, 30 or 40 years instead of 20 years
- Slide 15 in Appendix A shows the system savings if the past overpayments can be credited as additional savings for years 2018-2021

We are working on a similar analysis for wind and solar and expect to have it completed early next week.

In terms of the closing costs of coal, the province spent an estimated $10B on capital to build 6000+ MW of CCGT/CT capacity, which effectively replaces the 6000+ MW of coal. This $10B amortized over 20-40 years (as per the attached analysis) therefore represents the system cost of closing down the coal plants. There are also some savings on sustaining capital costs (on the coal plants) and from differences in operating/fuel costs. However these are difficult to estimate and expected to be small in comparison to the capital costs of building up the gas fleet. Please let us know if you have any questions or need further clarification on any of the above.

Regards,

Greg Schabas
Senior Advisor, Modeling & Analysis
Corporate Business Development & Strategy

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From: CROZZOLI Carlo -CBUSDEV&STRT
Sent: Wednesday, April 19, 2017 12:57 PM
To: JANOSSY Eva -CBUSDEV&STRT; SCHABAS Greg -CBUSDEV&STRT
Cc: BUTCHER Nicolle -CBUSDEV&STRT
Subject: RE: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

One other thought. The Province may also want to include the cost of closing OPG's coal plants as part of the cost to be borne by future ratepayers. We may want to calculate a number for this and amortize over period of useful life of CCGT fleet.

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From: CROZZOLI Carlo -CBUSDEV&STRT
Sent: Tuesday, April 11, 2017 4:22 PM
To: JANOSSY Eva -CBUSDEV&STRT; SCHABAS Greg -CBUSDEV&STRT
Cc: BUTCHER Nicolle -CBUSDEV&STRT
Subject: RE: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

Eva/Greg,

Thanks for putting this together. It is very informative. I have three questions/comments:

- Is it supportable to go back 10 years (say to 2007) to start the analysis? During the previous 10 years, you would conclude that electricity customers overpaid for amortization of capital by $x. You may have reasons why this is intellectually inconsistent, but I believe this is part of how the province will look at this.
- I would also run a scenario with 40 year amortization. Again, this is how the province looks at it and of course there are 40 year old gas plants out there operating today.
- Lastly, does this concept work at all with renewables? For example, if the wind and solar contracts were 25 years instead of 20, would the feed in tariff rates have been calculated to be lower or would developers have bid lower into RFP processes? Can these reductions be factored into the analysis?

I know none of these will get us close the full amount, but I'd be curious to see how far it gets.

Lastly, this additional request above not a priority. Only relook at this if you have some extra time over the next couple of weeks.

Thanks,

Carlo

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From: BUTCHER Nicolle -CBUSDEV&STRT
Sent: Friday, April 07, 2017 4:56 PM
To: CROZZOLI Carlo -CBUSDEV&STRT
Subject: FW: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

Attached is Eva's analysis on the impact of extending the amortization of the gas plants. They are working now on the impact of the wind and solar. A rough estimate is the extending the amortization of gas, wind and solar will likely only account for about 25% of the annual cost of the FHP.

Nicolle Butcher
Vice President, Strategy and Acquisitions

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From: JANOSSY Eva -CBUSDEV&STRT
Sent: Friday, April 07, 2017 4:39 PM
To: BUTCHER Nicolle -CBUSDEV&STRT
Cc: SCHABAS Greg -CBUSDEV&STRT
Subject: FW: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

Nicolle,

In response to Carlo's request to calculate the impact of reamortizing the gas plants in Ontario, please find attached Greg's analysis.

The savings from extending the amortization of the remaining capital cost of the gas plants by 10 years would only account for $228M/year or 9% of the cost of the Fair Hydro Plan for the next 4 years.

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Please forward to Carlo at your convenience.

Eva

From: SCHABAS Greg -CBUSDEV&STRT
Sent: Friday, April 07, 2017 3:02 PM
To: JANOSSY Eva -CBUSDEV&STRT
Cc: SCHABAS Greg -CBUSDEV&STRT
Subject: RE: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

Hi Eva,

I've updated the analysis as we discussed. The changes include:

- Added Slide 7 showing the present value of system savings and additional costs. Note that by design NPV of the impact (i.e. PV savings – PV costs) is always equal to zero.
- Added Slide 8 presenting the conclusion (with data) that extended gas plant amortization on its own won't meet the Fair Hydro Plan's cost reduction target.

Please let me know if you have any questions and if you would like to discuss.

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From: SCHABAS Greg -CBUSDEV&STRT
Sent: Friday, April 07, 2017 10:02 AM

To: JANOSSY Eva -CBUSDEV&STRT
Cc: SCHABAS Greg -CBUSDEV&STRT
Subject: Ratepayer Cost Impact of Extending Amortization of Ontario's Gas Plants

Hi Eva,

Please see attached my results from the study of extending the amortization periods of Ontario's gas generators (SCGTs and CCGTs). Let me know if you have any comments, questions or if there's anything you would like me to add. I will expand on this presentation next week to include the impact on Wind & Solar extensions as well.

Regards,

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