

EXPLANATORY NOTES

Estimated Costs of Relocating the Oakville Generating Station to Napanee

There are both costs and savings associated with relocating the Oakville Generating Station to Napanee. Both need to be taken into account when calculating the total costs of relocation. The costs and savings detailed below in many instances are estimates based on the information known at this time as well as assumptions about future elements (e.g. gas prices, electricity demand). These costs and savings will evolve over time as detailed engineering work is performed and information becomes available.

Payments Made to TransCanada

Upfront payments to TransCanada were validated and approved by an independent engineer.

Gas Turbine Cost

TransCanada ordered and paid for the Oakville gas turbines because of the long lead time required to manufacture them. These turbines will be used in Napanee. Recognizing that TransCanada would be carrying these costs beyond what they had planned due to the cancellation of the Oakville contract, the OPA agreed to pay for the turbines upfront rather than through the monthly contract payment that TransCanada will receive once the plant is up and running. **The cost of the upfront turbine payment is \$210 million and was offset by a lower contract payment or net revenue requirement (NRR).**

Oakville GS Sunk Costs

Sunk costs are the costs for goods and services TransCanada incurred in Oakville that cannot be used in Napanee and include things like land, engineering and design work, permitting, employee costs and overhead. **The sunk costs associated with the Oakville Generating Station are \$40 million.**

Future Site-related Costs

Transmission Connection

There are costs associated with connecting the power plant to the bulk transmission system. In Oakville the plant would have connected to a 230-kv line. At the Napanee site, the plant will connect to a 500-kv line, which will cost more. The OPA is covering this cost because it was part of the negotiated settlement as reflected in the MOU. **The cost to connect the Napanee Generating Station to the transmission system is estimated to be \$37 million.**

Gas Connection

There are costs associated with connecting the power plant to the gas supply. The OPA is covering these costs because it was part of the negotiated settlement as reflected in the MOU. **The gas connection costs are estimated to be \$10 million.**

Land and Site Services

The Napanee contract has a provision that would see the OPA covering any land and site services costs that exceed \$18.25 million up to a maximum of \$5 million. **The OPA estimates that these costs will not exceed \$18.25 million and therefore will add \$0 to the total cost of relocation.**

Gas Delivery & Management

Gas delivery and management (GD & M) are costs associated with transporting natural gas from the Dawn gas hub near Sarnia and managing it on the Napanee site. Napanee is further from the Dawn hub than Oakville, therefore these costs will be higher. The OPA agreed in the MOU to cover the GD & M but also reduced TransCanada's monthly contract payment equivalent to what TransCanada would have been paid for GD & M in Oakville. **The OPA estimates the gas delivery and management costs to be \$406 million, which is offset in part by a lower contract payment.**

Future System Costs

Bulk Transmission Upgrade in SWGTA

SWGTA needs additional electricity in the short and long term. Conservation and slower growth because of the 2008 recession changed the timing of the need in the short term from 2014 to 2019. When the government made the decision not to proceed with the Oakville Generating Station, the transmission upgrades that had been planned to be built for 2029 to meet long-term needs had to be advanced to 2019. **The estimated net cost of building transmission 10 years earlier as a replacement for the Oakville Generating Station is estimated to be \$90 million.**

Line Losses

The power generated at the Napanee Generating Station will be consumed in other parts of the province where the demand is. Transmitting electricity over long distances results in some power being lost during transmission. **The estimated costs associated with line losses are estimated to be \$32 million.**

Turbine Efficiency

In 2011, TransCanada had the turbines upgraded to have fast-start capability because at the time it was thought TransCanada would develop a peaker plant in Cambridge that required fast starts. The fast-start capability has potential value to the system but once operating, the turbines are not as efficient as they would have been in Oakville without this capability. The value associated with this capability has not been estimated at this time. **The costs associated with the operation of the fast-start turbines are estimated to be \$53 million.**

Contract Related Savings

Reduced Monthly Payments

The net revenue requirement (NRR) is the monthly contract payment the OPA pays a power plant developer. A power plant developer does not receive these payments until the power plant is up and running. The NRR then covers the capital and operating costs and provides a rate of return that is dependent on how efficiently the developer builds and operates the plant. The Oakville NRR was \$17,277/MW-month. The Napanee NRR is \$15,200 MW-month. The reduction was made to offset the upfront turbine payment and a portion of the gas management and delivery costs. **The estimated savings associated with the reduced NRR are \$195 million.**

Savings and Cost Estimates Contingent on Assumptions

Cost of Replacement Capacity in 2017-2018

In addition to meeting local reliability needs, the Oakville Generating Station, which was to be in service in 2014, would have provided generating capacity at the provincial level. Replacement capacity could therefore be required in 2017/2018 when nuclear refurbishments start and before the Napanee Generating Station is up and running in 2018. **The estimated cost of this replacement capacity is \$215 million.**

Savings from Napanee being in Service Five Years after Oakville

This is the estimated value of having the Napanee Generating Station under contract for five years after the Oakville Generating Station contract would have ended. **The savings are estimated to be \$50 million.**

Savings from Time Deferral of Payments from 2014 to 2019

Under the original Oakville contract, TransCanada was required to have the plant up and running by 2014. The Napanee Generating Station is slated to be in service on December 31, 2018. Starting payments later results in savings over the 20 year period of the contract because of the time value of money. This savings estimate assumes that the contracted Commercial Operation Date ("COD") for OGS (February 2014) would have occurred. If a later COD is assumed then the savings are reduced, but the estimated cost of replacement power may also be reduced. **The savings associated with deferring the contract payments are estimated to be \$539 million.**



Estimated Oakville GS Relocation Costs - 29 April 2013

(Please refer to the accompanying explanatory notes.)

11
250
453
176
215
1094
15

Payments Made to TransCanada

Gas Turbine Cost
Oakville GS Sunk Costs

\$210
\$40
\$250

Comments

Cost of the gas turbines for OGS that are re-purposed in Napanee - noted as \$210M in MOU
Costs to develop the site in Oakville - capped at \$40M in MOU. Noted as sunk costs in backgrounder.

Future Site-related Costs

Transmission Connection
Gas Connection
Land and Site Services
Gas Delivery & Management

\$37
\$10
\$0
\$406
\$453

Estimated cost to connect to the transmission system in Napanee - noted as \$ TBD in MOU pending final design
Estimated cost to connect to the gas pipeline in Napanee - noted as \$ TBD in MOU pending final design.
OPA to pay if total costs exceeds \$18.25M but capped at \$5M - noted in the contract.
Estimated costs associated with delivering gas to Napanee and managing it - noted in MOU.

Future System-related Costs

Bulk Transmission Upgrade in SWGTA
Higher Line Losses
Lower Turbine Efficiency

\$90
\$32
\$53
\$176

"I also that brought this down"

Estimated system costs associated with moving certain transmission projects ahead 10 years to 2018. Flagged in 2010 announcement and LTEP. Originally estimated at \$200M in disclosed OPA slide deck.
Estimated electricity losses caused by having generation located far from the loads it serves and disclosed in OPA slide deck and included in \$200M.
Napanee GS has a lower efficiency than OGS because of the fast start capability, but there is value in having this capability.

Contract-Related Savings

Savings from Reduced Monthly Payments for Napanee

(\$195)

Savings from reducing the NRR from \$17,277/MW-month to \$15,200/MW-month, which is set out in the MOU.

— average was under \$13

Savings and Cost Estimates Contingent on Assumptions

Savings from Time Deferral of Payments from 2014 to 2019
Cost of Replacement Power Services in 2017 and 2018
Savings Because Napanee will be in service for 5 years after Oakville
Future Potential Savings

(\$539)
\$215
(\$50)
(\$374)

Savings from starting payments later. This assumes that the contracted Commercial Operation Date (COD) for OGS (February 2014) would have occurred. If later COD is assumed then the savings are reduced, but the estimated cost of replacement power may also be reduced.
Estimated additional resources needed in 2017 and 2018.
Estimated value of replacement power not required after the SWGTA Contract would have expired in 2034.

Relocation Cost (Saving)

\$310

Notes:

All estimates are in 2013 \$.
Nominal social discount rate of 6.08% (4% real social discount rate and 2% inflation).
OGS is assumed to have achieved Commercial Operation on February 8, 2014 and Napanee GS is assumed to have achieved Commercial Operation on December 31, 2018.
The analysis period is 2014 to 2038 to provide a common time horizon for the discounted cash flow analysis.
GD&M costs for Napanee GS are estimated to be \$3,400/MW-month.
Additional capacity needs to be acquired in 2017 and 2018 prior to Napanee GS coming into service.

#1.1 B Cost
less avg savings

1.1 B

* You said the numbers are still up for debate... we agree