Issues Note
Correspondence with Magnolia Generation- Impact of the OFHP on Consumers with CHP Systems

Issue

On January 8, 2017, Minister Thibeault received an email correspondence from Magnolia Generation (Magnolia), a provider of Combined Heat and Power (CHP) systems. In its email, Magnolia indicate that it has entered into contractual agreements to design and install CHP systems at The Grange (condo building managed by Crossbridge, formerly Brookfield) and multiple Toronto Community Housing (TCH) buildings. As per the contractual agreements, Magnolia will cover the the capital investment and ongoing maintenance costs in return for payments equivalent to the reduced utility costs over a fixed period of time.

Magnolia indicates that the relevant multi-residential buildings will not be able to fully benefit from Ontario's Fair Hydro Plan (OFHP), a result of installing CHP systems. Magnolia specifically notes that the buildings will not qualify for the 8% rebate through the Ontario Rebate for Electricity Consumers (OREC) Program.

While the buildings will not be eligible for the 8% rebate on consumption from the CHP system, they should continue to receive the full benefit of the OFHP on any consumption from Toronto Hydro. Additionally, it appears that Magnolia will charge "market rates" for electricity from the CHP system, which ENERGY understands to cover all electricity bill components, including the remaining elements of the OFHP, namely Global Adjustment (GA) refinancing and the shifting of the cost of support programs to the tax-base.

This note provides details on Magnolia's CHP systems for Crossbridge and TCH, and also outlines the impact of the OFHP on consumers with existing or planned CHP systems.

Crossbridge and TCH's CHP Systems

- Magnolia recently installed a behind the meter CHP system at a Toronto based condo facility (Grange Condo) managed by Crossbridge. This was to replace an aging backup diesel generation equipment at the condo. Magnolia is also currently working with Toronto Community Housing (TCH) to install similar CHP systems at multiple locations.
    - Following the 2013 ice storm, the City of Toronto has been encouraging multi-unit residential buildings to install long-term backup power systems. In October 2016, it introduced voluntary performance guidelines for back-up generation in multi-residential buildings[1].

[1] Available online: City of Toronto's voluntary performance guidelines for back-up generation in multi-residential buildings

- The Grange Condo has been recognized by the City as the first building to comply with its performance guidelines for back-up generation[2] and its CHP project has gained significant media attention[3].
  - Magnolia's email to the Minister indicates that TCH has been mandated to replace end-of-life diesel backup power systems with larger capacity natural gas based generation systems.

- In addition to providing backup generation capacity, Magnolia's CHP systems are generally designed to meet the facility's thermal load (space heating and water heating). As a result, the CHP system provides 30 to 50% of a facility's total electricity requirements on average.

- Through Conservation First Framework (CFF) and Industrial Accelerator Program (IAP), participants can receive a financial incentive to cover up to 40% of upfront capital costs for a behind the meter CHP project.
  - IESO has indicated that both Crossbridge and TCH are benefitting from CHP incentives through the CFF.
  - 2017 Long Term Energy Plan indicated that, to help meet Ontario's climate change goals, behind the meter CHP projects using supplied fossil fuels to generate electricity on-site will no longer be eligible under the CFF and IAP starting July 1, 2018.

- Magnolia in its email to the Minister indicates that it entered into a Power Purchase Agreement (PPA) with Crossbridge and TCH to cover all expenses of the upfront capital costs and the ongoing maintenance costs. In return, Crossbridge and TCH will pay Magnolia the market rates for electricity and natural gas that their respective CHP systems are displacing, over a 20 year time frame.

Impact of OFHP on Consumers with CHP Systems

OREC

- The OREC Program, which commenced on January 1, 2017, provides eligible consumers (annual consumption <250,000 kWh or peak demand <50 kW) a rebate which is equal to eight per cent of the base invoice amount for each billing period as defined in O.Reg 363/16.

- The OREC Program was specifically designed to provide a rebate to consumers using grid electricity. Consumers with CHP systems have reduced grid electricity usage and

[2] Available online: Acknowledgement of compliance with City of Toronto's Minimum Back-up Power Guidelines
[3] CBC article and CBC video

as a result receive a lower rebate than what they would have received in the absence of a CHP system.

- However, it should be noted that consumers with CHP systems generally pay less on a net basis in total utility expenses (electricity and natural gas). This is due to the significantly lower cost of natural gas in comparison to electricity.
    - The exception to this is when consumers have chosen to enter into contractual agreements with third parties, like Magnolia, who cover the capital investment and ongoing maintenance costs in return for payments equivalent to the reduced utility costs over a fixed period of time.

GA Refinancing and shifting of support program cost

- Eligibility for the remaining elements of the OFHP is harmonized to the OREC.

- Consumers that install CHP systems would not receive savings related to GA refinancing or the shifting of support program costs on behind-the-meter (BMG) consumption.

- However, a facility that signs an agreement, like Magnolia has, to pay utility rates for BMG consumption should see the impact of GA refinancing and shifting of social support program cost.

- The ultimate responsibility for passing on any bill savings would be governed by the contractual relationship between Magnolia and their customers. ENERGY is not privy to the specific terms of the contracts.

- Below is an illustrative example of the impact the OFHP can have on the monthly electricity bills for Magnolia's clients (assuming monthly electricity consumption of 750 kWh with 50% from the gird and 50% from CHP- impact on one specific condo unit and not on entire condo building).

Illustrative Monthly Electricity Bill Impact on Magnolia Clients due to OFHP

	Without CHP	**With CHP**
Pre-OFHP	$162- LDC bill $0- payment to Magnolia **Total: $162**	$81- LDC bill $81- payment to Magnolia **Total: $162**
Post-OFHP	$121- LDC bill (includes-8% rebate) $0- payment to Magnolia **Total: $121**	$60.50- LDC bill $67- payment to Magnolia **Total: $127.50**

- The analysis suggests that although Magnolia's clients will benefit from the OFHP, the extent of benefit will be lower (i.e., ~21% as opposed to 25% for a 750 kWh consumer) than what would have been if they had not entered into an agreement with Magnolia.

- It should however be noted that Magnolia's clients are benefitting from new backup generation systems with larger capacity than the end of life diesel generation systems the CHP systems replaced. If Magnolia's clients had not installed the CHP systems, they would likely have had to make significant upfront investments to install an alternate backup power generation system.

Next Steps

- Staff recommend that Kaili Sermat-Harding, Assistant Deputy Minister of ENERGY's Conservation and Renewable Energy Division (CRED), respond to the original email from Magnolia.

- An attachment is provided which includes the incoming email from Magnolia and also outlines a suggested email response.

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