AUC
Alberta Utilities Commission

FortisAlberta Inc.

Micro-Generation Determination

June 15, 2010

ALBERTA UTILITIES COMMISSION
Decision 2010-274: FortisAlberta Inc.
Micro-Generation Determination
Application No. 1606031
Proceeding ID. 565

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1 INTRODUCTION AND BACKGROUND

1. On March 1, 2010, Great Northern Power Corporation (GNP), on behalf of AltaGas Ltd., submitted a micro-generation application to FortisAlberta Inc. (Fortis). GNP is seeking to build a micro-generator generating unit (Generating Unit) at the Mosquito Creek compressor station owned by AltaGas Ltd. The proposed generating unit is an induction based generator that recovers waste heat from reciprocating engines used to power natural gas compressors.

2. On March 30, 2010, Fortis submitted a Notice of Dispute stating that it is unclear whether the Generating Unit meets the definition of "renewable or alternative energy" pursuant to section 1(1)(l) of the *Micro-Generation Regulation* and therefore it is unclear whether the Generating Unit qualifies as a micro-generation generating unit. Fortis requested a final determination from the Commission as to whether the Generating Unit qualifies as a micro-generation generating unit pursuant to section 2(2) of the *Micro-Generation Regulation* .

3. On April 7, 2010 the Commission issued a Notice of Application requesting Statements of Intent to Participate (SIPs) from interested parties and any additional information in support of its position by April 14, 2010.

4. The Commission received SIPs from the following parties:

- ENMAX Energy Corporation ; and
- Great Northern Power Corporation

5. In its SIP, ENMAX Energy Corporation indicated that it is exploring alternative technologies and is interested in this application as it relates to the recovery of waste heat.

6. GNP submitted a SIP and supporting evidence to maintain its position that the Generating Unit utilizes "renewable or alternative energy" and should qualify as a micro-generation generating unit.

7. The Commission noted that the GNP Submission dated April 14, 2010 did not address sections (1)(1)(h)(iii) and (1)(1)(h)(v) of the *Micro-Generation Regulation*, therefore the Commission issued Information Request No. 1 to GNP on April 20, 2010; GNP's responses were received on April 22, 2010.

8. The Commission noted that no evidence was provided regarding the rating of the customer's service as outlined in section (1)(1)(h)(iii) of the *Micro-Generation Regulation*, therefore the Commission issued Information Request No. 1 to Fortis on June 1, 2010 and responses from Fortis were also received on June 1, 2010.

9. In reaching the determinations set out in this Decision, the Commission has considered all relevant materials comprising the record of this proceeding. Accordingly, references in this Decision to specific parts of the record are intended to assist the reader in understanding the Commission's reasoning relating to a particular matter and should not be taken as an indication that the Commission did not consider all relevant portions of the record with respect to that matter.

2 THE REGULATION AND ITS CONDITIONS FOR A "MICRO-GENERATION GENERATING UNIT"

10. Section 1(1)(h) of the *Micro-Generation Regulation* defines a "micro-generation generating unit" to be one that:

> (a) exclusively uses sources of renewable or alternative energy;
>
> (b) is intended to meet all or a portion of the customer's electricity needs;
>
> (c) is, at the time of construction or installation of the generating unit, sized to the customer's load or anticipated load or a portion of it, as evidenced by a total nominal capacity of the generating unit that does not exceed the rating of the customer's service;
>
> (d) has a total nominal capacity not exceeding 1 MW; and
>
> (e) is located on the customer's site, on a site owned by, or leased to the customer that is adjacent to the customer's site.

11. To qualify as a "micro-generation generating unit", a customer must satisfy the five conditions stated in sections 1(1)(h)(i) to (v) of the *Micro-Generation Regulation*.

12. Section 1(l)(l) of the *Micro-Generation Regulation* defines "renewable or alternative energy" as follows:

> "renewable or alternative energy" means electric energy generated from
>
> (i) products having current EcoLogo certification, or
>
> (ii) solar, wind, hydro, fuel cell, geothermal, biomass or other generation sources, if the greenhouse gas intensity of
>
> (A) the electric energy produced, or
>
> (B) the total energy produced from the simultaneous generation of electric energy and production of thermal energy from the same fuel source
>
> is less than or equal to 418 kg per MWh.

3 COMMISSION FINDINGS

13. The Notice of Dispute filed by Fortis requires the Commission to determine whether the Generating Unit meets the "renewable or alternative energy" requirement. Although it does not address whether the Generating Unit meets the other conditions in section 1(1)(h) of the *Micro-Generation Regulation*, the Commission must nonetheless ensure that proposed "micro-generation generating units" meet all five conditions.

14. The Commission consequently examined the merits of GNP's application in light of the five conditions outlined above.

3.1 Renewable or Alternative Energy

15. In its submission, GNP claims that its waste heat recovery system meets the definition of "alternative energy" because GNP's Generating Unit results in zero incremental emissions and no incremental use of fuel. The thrust of GNP's argument for why its Generating Unit satisfies the first condition is that it "is generating electricity by converting an un-avoidable waste heat source (thermal energy) into mechanical energy which is then converted into electric energy."[1]

16. While this is true, the exact requirements of section 1(1)(l) of the *Micro-Generation Regulation* must be met, and more specifically, section 1(1)(l)(ii), which contemplates "other generation sources", and which in this case could include waste heat energy. After all, the source of the waste heat energy is a natural gas compressor station that produces radiant heat as a by-product of the customer's activity.

17. Therefore, if the waste heat energy can be harnessed, the energy falls into the sorts of sources contemplated by the *Micro-Generation Regulation* as demonstrated by the listed examples: "solar, wind, hydro, fuel cell, geothermal, [and] biomass". The waste heat energy is produced as a by-product of the customer's activity. Generating electricity from this energy source, like the sun shining, water falling, or wind blowing, utilizes existing energy, which in this case is generated incidentally to the underlying customer's industry.

18. The Commission, therefore, is satisfied that waste heat is the type of energy source contemplated in the *Micro-Generation Regulation* under "other generation sources".

19. The next step is to determine whether the Generating Unit, in generating its electricity, has a greenhouse intensity of 418 kg per MWh or less pursuant to section 1(1)(l)(ii) of the *Micro-Generation Regulation*.

20. The Commission notes that GNP's proposed Generating Unit will produce electric energy from waste heat that is not currently being utilized in any manner. The Generating Unit "consumes no fuel and runs on the waste heat rejected to atmosphere from the natural gas fuelled reciprocating engine…that will continue to run whether or not the [Generating Unit] is connected."[2] Furthermore, the operation of the compressor station, powered by a natural gas burning reciprocating engine, is wholly independent of the operation of the Generating Unit, and

[1] Page 4 of the GNP SIP and Submission dated April 14, 2010.
[2] Page 5 of the GNP SIP and Submission dated April 14, 2010.

the installation of the Generating Unit will "not increase fuel consumption in the reciprocating engine to generate electricity."[3]

21. In this instance, the operation of GNP's equipment is wholly independent of the source of waste heat, and its incremental green house gas intensity is interpreted to be 0 kg per MWh. The Commission finds that the electric energy generated by the Generating Unit falls under the other generation sources as defined in the *Micro-Generation Regulation* and that its greenhouse gas intensity is less than 418 kg per MWh. The Commission finds that the Generating Unit complies with section (1)(1)(h)(i) of the *Micro-Generation Regulation*.

3.2 Customer's Electricity Needs, Load or Anticipated Load, and Total Nominal Capacity

22. When considering the sizing qualifications of the Generating Unit as a micro-generation generating unit, the Commission is required to ensure that the Generating Unit complies with section (1)(1)(h)(ii) to (iv) of the *Micro-Generation Regulation*. The three requirements all relate to the sizing of the Generating Unit. These requirements are in place to limit the generation capacity of the Generating Unit. The generation capacity of the proposed Generating Unit should meet, and not exceed, the customer's electricity consumption.

Customer's Electricity Needs

23. Unlike traditional generation sources using fuel that is controllable by the generation operator, it is understood that the generation sources listed in the *Micro-Generation Regulation* can be intermittent or operate at less than maximum capacity due to the utilization of energy that is often not controlled by the generation operator. For example, wind turbines, solar cells, and waste heat recapture devices all rely on energy sources that are not in the complete control of the operator of the generating unit.

24. In light of this, the average annual generating capacity of the Generating Unit should be taken into account, along with the maximum rated capacity (nominal capacity). Section (1)(1)(h)(ii) of the *Micro-Generation Regulation* specifically states that the Generating Unit is intended to meet all or a portion of the customer's electricity needs. The Commission recognizes that it is possible for the Generating Unit's nominal power generation capacity to exceed the average yearly power consumption of the customer if evidence is provided that the total yearly generating capacity of the Generating Unit does not exceed the expected yearly electricity consumption of the customer.

25. GNP stated that its Generating Unit is intended to meet all or a portion of the customer's needs. The total nominal capacity of Generating Unit is 175 kW.[4] The electricity consumption at the customer's site is expected on average to be 152 kVA.[5] GNP submitted that the reason why the nominal capacity of the Generating Unit is higher than the expected average consumption is that the Generating Unit "utilizes an air-cooled condenser which then causes the average power generated to always be less than the 175kVA [nominal] rating of the generator… for that reason, over the year, the system produces less power (approximately 100 kVA) than the 175 kVA rating on the generator." GNP provided further evidence to show that the annual electrical consumption

[3] Page 5 of the GNP SIP and Submission dated April 14, 2010.
[4] Page 7, Appendix 2 of the GNP SIP and Submission dated April 14, 2010.
[5] Page 2 of the GNP IR Response dated April 22, 2010.

on site is "anticipated to be 1,200,120 kVAh's" and the Generating Unit is "expected to produce 876,000 kVAh which is based on the generator producing approximately 100 kVA of power on average."[6]

26. Because the yearly energy production of the Generating Unit meets only a portion of the yearly energy consumption, the Commission finds that the Generating Unit is intended to meet all or a portion of the customer's electricity needs and complies with section (1)(1)(h)(ii) of the *Micro-Generation Regulation*.

Load or Anticipated Load

27. Fortis stated that the rating of the customer's service is an underground service with a 225 kVA transformer.[7]

28. The Commission finds that the Generating Unit is, at the time of construction or installation of the generating unit, sized to the customer's load or anticipated load or a portion of it, as evidenced by a total nominal capacity of 175 kVA that does not exceed the rating of the customer's service of 225 kVA. The Generating Unit therefore complies with section (1)(1)(h)(iii) of the *Micro-Generation Regulation*.

Total Nominal Capacity

29. In addition, the Commission finds that the 175 kVA nominal capacity of the Generating Unit is well under the 1 MW limit as set out in the *Micro-Generation Regulation*. Therefore, the Generating Unit complies with section (1)(1)(h)(iv) of the *Micro-Generation Regulation*.

3.3 Location of the Generating Unit

30. GNP has stated that the Generating Unit "will be installed on AltaGas's Mosquito Creek site, adjacent and connected to the natural gas compressor."[8]

31. As the Generating Unit is located on the customer's site, the Commission finds that the Generating Unit complies with section 1(1)(h)(v) of the *Micro-Generation Regulation*.

[6] Page 2 of the GNP IR Response dated April 22, 2010.
[7] Page 1 of the Fortis IR Response dated June 1, 2010.
[8] Page 3 of the GNP IR Response dated April 22, 2010.

4 DECISION

32. For the foregoing reasons the Commission finds that GNP's Generating Unit meets the definition "micro-generation generating unit" as provided for in the *Micro-Generation Regulation.*

Dated June 15, 2010.

ALBERTA UTILITIES COMMISSION

(Original signed by)

Anne Michaud
Panel Chair

(Original signed by)

Tudor Beattie, Q.C.
Commissioner

(Original signed by)

Moin Yahya
Commissioner