

March 5, 2019

Opening a Can of Worms: What are the Applicable Market Rules for Generation Where the Generator Fails to Use the Entire Output?

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Decision Commented On: EPCOR Water Services Inc., EL Smith Solar Power Plant, February 20, 2019, [Decision 23418-D01-2019](#)

This decision raises important questions as to the applicable rules for self-generation where the generator seeks to export any surplus to the grid. The decision deserves to be read by all those engaged in self-generation beyond the micro and small levels, including self-generation that benefits from designation as an industrial system.

EPCOR Water filed applications with the Alberta Utilities Commission (AUC) for approval to construct and operate a 12 MW (45,000 panels) solar power plant at its EL Smith water treatment facility in the North Saskatchewan Valley in the City of Edmonton pursuant to section 11 of the *Hydro and Electric Energy Act*, [RSA 2000, c H-16 \(HEEA\)](#) and to interconnect the power plant to the Alberta Interconnected Electric System (AIES) through the distribution system, pursuant to section 18 of the *HEEA*. EPCOR Water planned to use about 70% of the plant's annual output onsite and to export the remaining 30% to the grid (i.e., the wholesale market).

There were a number of objections to the proposed project on environmental grounds, but in the end the AUC considered that the commitments made by EPCOR Water were adequate to mitigate the visual and other impacts that the facility would undoubtedly have in the river bottom area. However, the AUC considered that EPCOR Water's proposal to export its surplus generation to the grid was inconsistent with sections 18(2) and 101 of the *Electric Utilities Act SA 2003, c E-5.1 (EUA)* and section 2(f) of the *Fair, Efficient and Open Competition Regulation, Alta Reg 159/2009* (FEOC Regulation).

As the Commission noted (at paras 76 & 77), section 18(2) of the *EUA* provides that all electric energy entering or leaving the Alberta Interconnected Electric System must be exchanged through the Power Pool of Alberta unless regulations made under sections 41(1)(b), 99 (dealing with micro-generation and small scale generation), or 142(2)(b) (general exemptions) provide otherwise (the details of these provisions are discussed below). In addition, section 101(1) provides that a person wishing to obtain electricity for use on a property must make arrangements for the purchase of electric distribution service from the owner of the electric distribution system in whose service area the property is located.

Section 2 of the *EUA* stipulates a number of circumstances in which the *EUA* does not apply.

2(1) This Act does not apply to

- (a) electric energy produced in the service area of the City of Medicine Hat
 - (i) by the City or a subsidiary of the City and consumed in that service area, or
 - (ii) by generating units that produce electric energy under contract to the City or to a subsidiary of the City and consumed in that service area,unless the City passes a bylaw that is approved by the Lieutenant Governor in Council under section 138;
- (b) electric energy produced on property of which a person is the owner or a tenant, and consumed solely by that person and solely on that property;
- (c) electric energy produced by the following generating units located in the City of Calgary, to the extent of the capacity of those units on January 1, 1996:
 - (i) Glenmore water treatment facility;
 - (ii) Bearspaw water treatment facility;
 - (iii) Turbo Expander;
- (d) electric energy exempted by the Commission in accordance with rules made under section 117.

(2) The exemptions under subsection (1)(a) and sections 37(2)(a), 100 and 109 do not apply if the City of Medicine Hat or a subsidiary of the City does not provide the information or statements required by a regulation made under section 142(1)(h).

(3) The exemption under subsection (1)(b) applies whether or not the owner or tenant is the owner of the generating unit producing the electric energy. (emphasis added)

According to the AUC, section 2(f) of the FEOC Regulation complements subsection 2(1)(b) of the *EUA* insofar as it provides that “not offering to the power pool all electric energy from a generating unit that is capable of operating, except where the electric energy is used on property for the market participant’s own use” (the must offer rule) is conduct that does not support the fair, efficient and openly competitive operation of the electricity market.

EPCOR Water took the view that the exemption offered by section 2(1)(b) of the *EUA* applied to any electricity that it consumed, and thus that the must offer rule *only* applied to the 30% of its generation that it planned to export to the grid. The Commission disagreed. In its view, as soon as EPCOR Water was not self-consuming the entire output then *all* energy generated at the facility must be offered in to the pool unless EPCOR could benefit from one of the exemptions under the *EUA*.

Accordingly, while the AUC was prepared to grant the applications sought by EPCOR Water the interconnection was subject to the following condition that (at para 107):

As of the interconnection date of the project, EPCOR Water is required to file a compliance plan, endorsed by its chief executive officer, consisting of a written confirmation of statutory compliance and a detailed written description of the mechanism it is using to ensure compliance with the statutory scheme.

In reaching this conclusion, this panel of the AUC acknowledged that the past practice of the Commission had not always accorded with this understanding of the legislative scheme. The panel noted (at para 102) as follows:

As part of its consideration of the self-supply and export issue arising in this decision, the Commission reviewed its previous treatment of similar applications. The Commission identified instances where it previously approved power plant and connection applications in which the applicants' stated intention was to consume most of the electric energy on site but exchange the excess through Alberta's electricity market. Notwithstanding that the issue of whether such conduct complies with the statutory scheme was not raised in those proceedings, the Commission recognizes that its determination on this issue in this proceeding represents a departure from that in previous decisions. The Commission acknowledges that its statutory interpretation of the legislative provisions pertaining to self-supply and export may have ramifications for existing approval holders and future applicants. However, the Commission cannot address those ramifications within the scope of this proceeding.

This changed understanding will be of interest to a number of parties, including not only those parties that hold these existing (now perhaps offside) power plant and connection approvals but also the Alberta Electric System Operator (AESO) and the Market Surveillance Administrator (MSA). It may also be of interest to the Department of Energy because the result of this decision is surely one that will discourage owners of industrial facilities using their brownfield facilities to co-locate generation unless that generation is sized to be below the minimum consumption pattern facility. This may rule out some possible projects and cause others to forego economies of scale. This may make it harder for the province to achieve its current goal of [30% of renewable generation by 2030](#).

In order to set the decision in context it is also important to understand the full range and scale of exemptions from the must exchange and must offer rules in the current legislative scheme. The following sections of this post examine those exemptions.

Exemptions from the *EUA*

The exemptions from the *Act* are quoted above in section 2(1). In addition, section 117 provides that

(1) The Commission (the AUC) may make rules

- (a) exempting any facility or class of facilities from the definition of electric utility, or
- (b) exempting from all or any provision of this Act and the regulations the electric energy produced from and consumed by an industrial system, and may impose terms and conditions on the exemption.

(2) If the Commission designates the whole or any part of an electric system as an industrial system under section 4(5) of the *Hydro and Electric Energy Act* and is considering making a rule under subsection (1)(b) in relation to that industrial system, the Commission may impose the condition that the owner of the industrial system be responsible for paying a just and reasonable share of the costs associated with the interconnected electric system. (emphasis added)

It is evident that the source of the exemption under section 117(1) must be an AUC rule. Both subsections contemplate imposing conditions on any exemption but the source of the exemption is the rule, not the condition. The need for a rule is also emphasized in section 2(1)(d) of the *EUA*.

The only AUC rule of which I am aware that deals with the industrial system designation (ISD) is the AUC's [Rule 007: Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments](#). But as the title of this Rule suggests, the Rule is concerned with application requirements rather than exemptions. In an earlier article (Nigel Bankes, Giorilyn Bruno and Cairns Price, *The Legal and Regulatory Treatment of Cogeneration in Alberta*" (2015), [53 Alberta Law Review 383](#) at 407) we observed that the AUC had never made a general exemption rule but that it frequently included a term in ISD approvals to the effect that "The electric energy produced from and consumed by the subject industrial system is exempt from the Electric Utilities Act." This continues to be the case. For example, there is an identical clause in an ISD order issued by the AUC on [February 13, 2019 for the Kearn Project](#).

The footnote to the discussion in the above article questioned whether such a condition would qualify as a rule. This is perhaps now an even more important question in light of this decision since if there is no "rule" then it is hard to see how ISD's are entitled to claim exemptions from the *EUA* and especially the must exchange and must offer rules.

This Panel of the AUC, however, seems convinced that the practice of inserting a condition meets the rule requirement of section 117(1) (at para 97):

Designated industrial systems are permitted to self-supply and are exempt from the obligation to obtain electric energy through the distribution or transmission system. In accordance with Section 117(1) of the Electric Utilities Act, each industrial system designation order issued by the Commission includes a condition specifying that the electric energy produced from and consumed by the subject industrial system is exempt from the operation of the Electric Utilities Act. (emphasis added)

But this is little more than a bald assertion of compliance with section 117 without any examination of what constitutes a rule for the purposes of section 117. The AUC does offer an extended discussion as to why an industrial system that complies with all of the requirements of

section 4 of the *HEEA* should be entitled to an exemption from the provisions of the *EUA*, but it is less clear that the conditions for the exemptions have actually been met.

The next sections catalogue other exemptions to the must exchange through the pool rule and to the correlative must offer rule.

Other Exemptions from the Must Exchange and Must Offer Rules

Section 18(2) of the *EUA* provides that:

(2) All electric energy entering or leaving the interconnected electric system must be exchanged through the power pool unless regulations made under section 41, section 99 or section 142 provide otherwise.

Section 41 provides, so far as relevant, that the Minister may make regulations (section 41(1)(b) (b) respecting exemptions from the requirement set out in section 17(d) or 18(2).”

Section 99 (in Part 6 dealing with generation), again so far as relevant, provides that the Minister may make regulations:

(b) respecting flare gas generating units, including specifying which provisions of this Act and the regulations do not apply to flare gas generating units and the information the owners or operators of a flare gas generating unit must provide to the Independent System Operator;

(b.1) respecting micro-generation generating units, including, without limitation, regulations

(i) defining “micro-generation generating unit”,

(ii) respecting the development, connection and operation of micro-generation generating units, and

(iii) specifying which provisions of this Act and the regulations do not apply to micro-generation generating units;

(b.11) respecting small scale generating units, including community generation generating units, including, without limitation, regulations

(i) defining “small scale generating unit” and “community generation generating unit”,

(ii) respecting the development, connection and operation of small scale generating units,

(iii) respecting the environmental, social or economic benefits to be conferred by small scale generating units that are community generation generating units, and

(iv) specifying which provisions of this Act and the regulations do not apply to small scale generating units; (emphasis added)

It is evident that there are three possible categories of regulations under this provision: i.e. regulations dealing with (1) flare gas generation, (2) micro-generation and (3) small scale generation.

Finally, section 142, the most general provision of all, stipulates that the Lieutenant Governor in Council may make regulations dealing inter alia (section 142(2)(b) “exempting any person or class of persons from any provision of this Act or the regulations and prescribing conditions or restrictions on the exemption”.

We will now discuss the three possible categories of exemption under the section 99 regulation making all of which have been operationalized.

The Flare Gas Regulation

Section 2 of the *Flare Gas Regulation*, [Alta Reg 163/2003](#) (FGR) provides that:

Sections 17(d) and 18(2) of the [EUA] do not apply to flare gas generation that is to be used solely by an operator if

- (a) the operator is working in the service area in which the flare gas generating unit is located,
- (b) the facilities operated by the operator and the flare gas generating unit are connected to a common delivery interface, and
- (c) the facilities operated by the operator and the flare gas generating unit are connected downstream of the common delivery interface. (emphasis added)

The conditions appear to be cumulative, including the “sole use” condition in the chapeau to the section. ‘Downstream’ in this case means on the distribution side of any interconnection. Hence, the exemption would not apply if the generation facility were connected to transmission and not distribution. There is no maximum capacity limit to qualifying generation but a qualifying unit must be:

a generating unit that uses for fuel

- (i) only solution gas, or
- (ii) solution gas and another substance as a supplement to maintain sufficient fuel volume to maintain the operation of the generating unit;

On the face of it the “sole use” condition (above) would appear to require that any export to the grid in excess of sole use requirements would be subject to the must exchange and must offer rules. However, to my mind at least section 3(4) seems to introduce some ambiguity since it seems to contemplate the existence of physical contracts with third parties. Section 3 provides in its entirety as follows:

3(1) The Independent System Operator may request a person that produces flare gas generation to provide information relating to the production of electric energy by a flare gas generating unit to the Independent System Operator.

- (2) The request under subsection (1)
 - (a) may be made in respect of information generally or in respect of specific information, and
 - (b) may specify the time and manner in which the information is to be provided.
- (3) A person that produces flare gas generation must provide the information requested under subsection (1).
- (4) Notwithstanding subsection (3), a person that produces flare gas generation is not required to disclose to the Independent System Operator any information relating to the price of flare gas generation that is sold or provided to an operator or other person. (emphasis added)

The AUC's decision that is the subject of this comment does not reference this exemption. It would be nice to know more about how the regulation works in practice.

The Micro- Generation Regulation

Section 6 of the *Micro- Generation Regulation*, [Alta Reg 27/2008](#) (MGR) provides that

6 Section 18(2) of the Act does not apply to electric energy from small micro-generation entering the interconnected electric system.

This section clearly exempts surplus energy from such a facility from the must exchange and must offer rules.

In terms of eligibility, the following definitions are significant:

- (g) “micro-generation” includes large micro-generation and small micro-generation [less than 150kW];
- (h) “micro-generation generating unit” means a generating unit of a customer that
 - (i) exclusively uses sources of renewable or alternative energy,
 - (ii) is intended to meet all or a portion of the customer's total annual energy consumption at the customer's site or aggregated sites,
 - (iii) has a total nameplate capacity that does not exceed the lesser of 5 MW or the rating of the customer's service,
 - (iv) supplies electric energy only to a site that is located on property that the customer owns or leases, and
 - (v) is located
 - (A) on the property referred to in subclause (iv), or
 - (B) on property that the customer owns or leases that is adjacent to the property referred to in subclause (iv);

According to section 5 of the MGR, “[l]oad settlement in respect of electric energy supplied into and out of a micro-generator’s micro-generation site must be conducted in accordance with the Commission’s rules made under section 24.1 of the Act.” The Commission has a rule addressing micro-generation [AUC Rule 024: Rules Respecting Micro-Generation](#) which incorporates by reference [AUC Rule 021: Settlement System Code Rules](#) (and see in particular s.4.6.4). In addition, sections 7(3), 7(5) and 7(5.1) of the MGR are pertinent:

- (3) A micro-generator’s service provider must act as the electricity market participant and deal with the ISO in respect of the electric energy generated by the micro-generator.
- (5) Subject to subsection (5.1), a micro-generator’s service provider shall credit the micro-generator for electric energy supplied out of the micro-generator’s micro-generation site at the following rates:
 - (a) in the case of small micro-generation, at the rate the service provider charged the micro-generator for electric energy supplied to the micro-generation site;
 - (b) in the case of large micro-generation, at the pool price for each settlement interval in the billing period.
- (5.1) If a retailer and a micro-generator agree, in writing, the retailer may credit the micro-generator for electric energy supplied out of the micro-generator’s micro-generation site at a different rate than what is set out in subsection (5).
- (7) For large micro-generation, [between 150kW and 5 MW]
 - (a) service providers must exchange through the power pool the electric energy supplied out of micro-generators’ micro-generation site

The “service provider” (i.e., a retailer or a regulated rate provider) also has AESO reporting obligations. It is evident that the Regulation distinguishes between small micro-generation and large micro-generation. It is only small micro-generation that is relieved of the must exchange (and implicitly therefore must offer) duties.

The Commission does provide some commentary on this regulation as follows (at paras 84 and 95):

The Micro-generation Regulation allows customers to own and operate a certain class of small generators (5 MW or less and powered exclusively by renewable or alternative energy) and to consume the electricity produced by that generator on site. Under this regulation, electric energy produced by a micro-generation generating unit that is in excess of the customer’s on-site needs is exported to the interconnected electric system through a net billing mechanism.

...

The *Micro-generation Regulation* requires a customer to size the micro-generator so that it meets all or a portion of the customer's total annual energy consumption on site. Section 6 of the Micro-generation Regulation specifically excludes micro-generators from the obligation established by Section 18 of the *Electric Utilities Act* to exchange the excess electric energy through the Power Pool of Alberta. Instead, in the limited circumstances of micro-generation, the micro-generator's service provider acts as the electricity market participant in respect of the energy generated by the micro-generator. The *Micro-generation Regulation* also explicitly requires that the distribution tariff charged to a micro-generator must be the same as the tariff that would apply if that customer were not a micro-generator.

The Small Scale Generation Regulation

The Small Scale Generation Regulation, [Alta Reg 194/2018](#) (SSGR) applies to the following classes of generating units:

- (g) "eligible generating unit" means a generating unit that
 - (i) exclusively uses sources of renewable or alternative energy,
 - (ii) is or will be connected to an electric distribution system for the purpose of supplying electric energy,
 - (A) to the interconnected electric system, or
 - (B) within an isolated community,and
 - (iii) has a total nameplate capacity that will not exceed the electric distribution system hosting capacity at the interconnection point;

Once again, the conditions are cumulative. In this case there is no requirement that any portion of the generation be used on-site. Maximum nameplate capacity will turn on the capacity of the distribution system.

In this case the applicable rules governing the relationship with the power pool are as follows:

Deemed offer of zero cents

- 6(1) A small scale generating unit is deemed to have a standing offer of zero dollars per megawatt hour for the electric energy offered to the power pool from the small scale generating unit.
- (2) A small scale generating unit in an isolated community is deemed to have a standing offer of zero dollars per megawatt hour for the electric energy supplied from the small scale generating unit, as if it was offered to the power pool.

Exchange and settlement duties and costs

7(1) Unless a small scale power producer requests otherwise in writing, the Balancing Pool

(a) must act as the market participant on behalf of the small scale power producer in dealings with the ISO in respect of the electric energy supplied by the small scale power producer's small scale generating unit

(i) to the interconnected electric system, or

(ii) to the distribution system, in the case of a small scale generating unit that is connected to the distribution system within in an isolated community,

and

(b) unless the small scale generating unit is located within an isolated community, is responsible for exchanging, including dispatching and receiving payments related to financial settlement, through the power pool the electric energy produced by the small scale power producer's small scale generating unit that enters the interconnected electric system.

(2) If a small scale generating unit is located within an isolated community, the distribution owner for that service area

(a) is responsible for exchanging, including dispatching, the electric energy produced by the small scale generating unit that enters the distribution system, and

(b) must submit to the ISO on a monthly basis the hourly metering data for the electric energy produced by the small scale generating unit that enters the distribution system.

(3) Each month the Balancing Pool shall pay an amount to the small scale power producer for electric energy supplied out of the small scale power producer's small scale generating unit at the hourly pool price for each hour in the previous ISO settlement period.

(4) The ISO must compensate the Balancing Pool for the electric energy supplied out of a small scale generating unit through the ISO's financial settlement system.

In this case therefore, it would appear that the regulation (which came into force January 1, 2019) does not exempt the generator from the must exchange and must offer rules of the *EUA*, but rather provides that the Balancing Pool will act as the generator's agent in respect of these responsibilities. The generator may opt out of that obligation but if it does it will be bound by the must exchange and must offer rules and will itself be a market participant.

The Commission does not comment on this Regulation in its decision, perhaps because it is not an example of self-generation with an export of any surplus to the grid.

A Summary of Exemptions

It seems useful to summarize these special rules in tabular form.

	Nature of exemption	Trigger for exemption	Maximum size
EUA s2(1)(b)	Exemption from the entire <i>EUA</i>	Entire generation self-consumed. Fuel neutral.	No maximum
EUA s 99 (ISD)	Energy produced is exempted from the <i>EUA</i>	An IS designation and an AUC rule (or a condition?). Fuel neutral.	No maximum
Flare Gas Regulation	Exempt from must exchange (18(2)) & financial settlement (17(d)) & by implication, must offer.	Generating unit must run on solution gas; solely used by operator.	No maximum but must connect to distribution.
Small Micro-generation	Exempt from must exchange (18(2)) & by implication, must offer. Service provider acts a market participant.	Renewable or alternative energy	< 150 kW
Large Micro-generation	Service provider acts a market participant (MP) and must exchange	Renewable or alternative energy	< 5MW
Small scale generation	No exemption from must exchange; deemed \$ zero offer and BP acts as the MP	Renewable or alternative energy & a community benefits agreement or statement	Must not exceed distribution system's hosting capacity

Conclusions and the Way Ahead

In this decision the AUC has concluded that the broad exemption offered by section 2(1)(b) of the *EUA* is only available to a self-generator who does not export any surplus generation to the grid. The exemption is not available, or is forfeited, if there is any export, however small. The result of losing this exemption is that the generator will be subject to the must exchange and must offer rules for the entire output of the facility unless the generator can claim the benefit of another exemption under the *EUA* or regulations.

The most important additional exemption in the *EUA* is that available to holder of an industrial system designation. But closer examination of that exemption prompted by this decision suggests that this too may be vulnerable, if not actually broken. This is because the current exemptions depend upon designation conditions rather than an AUC rule whereas both sections 2(1) and 117 seem to require an AUC rule. The Commission can fix this on a go forward basis, but a complete

fix may require retroactive legislation, perhaps deeming existing conditions to have the effect of a rule.

I think that the decision also reveals the need for some policy guidance and consistency. That guidance needs to address the more general questions as to when *ought* generation be relieved of the responsibility to participate in the market, and what measures need to be taken to ensure that the AESO has sufficient visibility and data with respect to non-market generation to be able to adequately manage the stability of the grid. The ISD approach is very ad hoc and the same may be said for the overall ‘system’ of exemptions reviewed above. It is possible that the [AUC’s ongoing inquiry into distributed generation](#) will shed additional light on these issues at the smaller end of the scale but it will still be necessary to provide clear and principled policy and legal guidance with respect to the scope of any exceptions from the must exchange and must offer rules. Consideration of this normative question also needs to take into account provincial policy goals with respect to increasing the share of renewable generation so as to meet the target of a 30% share of generation by 2030.

This post may be cited as: Nigel Bankes, “Opening a Can of Worms: What are the Applicable Market Rules for Generation Where the Generator Fails to Use the Entire Output?” (March 5, 2019), online: ABlawg, http://ablawg.ca/wp-content/uploads/2019/03/Blog_NB_Applicable_AUC_Rules_Failure_to_Use_Entire_Output_Mar2019.pdf

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