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Compliance Office

## Compliance Bulletin 200703

April 27, 2007

To: All Licensed Electricity Distributors  
All Licensed Electricity Generators

Re: Embedded Retail Generation Facilities – Metering, Settlement and Billing

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**This Bulletin provides guidance to electricity distributors and generators with respect to certain issues concerning the metering, settlement and billing of embedded retail generation facilities.**

On October 30, 2006 the Ontario Energy Board (“Board”) issued amendments to the Distribution System Code (“DSC”) and the Retail Settlement Code (“RSC”) to facilitate the connection of embedded generation facilities to distribution systems, to address related settlement issues and to support the implementation of the Renewable Energy Standard Offer Program (“RESOP”) administered by the Ontario Power Authority (“OPA”). The Board also issued a determination under sections 1.8 and 3.2 of the RSC on November 1, 2006 in relation to settlement for embedded retail generation facilities.

The Compliance Office has become aware of implementation issues that have arisen with respect to the metering, settlement and billing of embedded generation facilities that are the subject of contracts under the RESOP. This Bulletin is being issued to provide guidance in relation to these issues, as well as guidance in relation to the rate classes to which to embedded retail generation facilities should be assigned. Because many of these issues apply regardless of whether the embedded generator has a contract under the RESOP, except where otherwise noted the discussion below applies to all embedded retail generation facilities. The views expressed in this Bulletin have been informed by the work of a group of distributors and generators that met with Compliance Office staff to provide technical information.

This Bulletin does not address the following: embedded retail generation facilities with a nameplate capacity of greater than 10 MW; net metered generators; emergency backup generation facilities; or generation facilities that are used exclusively for load displacement (where the output of the generation facility is not the subject of a RESOP contract with the OPA).

### ***Choice of Connection Configuration***

Figure 1, which is appended to this Bulletin, provides a simplified illustration of different connection configurations that can apply to embedded retail generation facilities.

The DSC contemplates that a generation facility may be either directly connected or indirectly connected to a distributor's connection assets. An indirectly connected embedded retail generation facility may either be metered "in parallel" electrically with the associated load (i.e., the meter for the generation facility is located upstream of the load meter – Gp in Figure 1) or "in series" electrically with the associated load (i.e., the meter for the generation facility is located downstream of the load meter – Gs in Figure 1). As discussed below, in the parallel-metered indirectly connected case, the embedded retail generator, for settlement purposes, is treated independently from the associated load. In the series-metered indirectly connected case, the embedded retail generator is treated together with the associated load for settlement purposes.

The DSC is silent on the issue of whether the choice of connection configuration is at the discretion of the distributor or of the embedded retail generator. In my view, the principle of customer choice which applies to other connection circumstances under the DSC should apply equally to this issue. Accordingly, in my view the embedded retail generator should have the discretion to select the type of connection (directly, indirectly in parallel or indirectly in series) upon receiving from the distributor the information necessary to make that choice, including the implications for metering, settlement and billing.

### ***Metering***

Section 5.2.1 of the DSC allows a distributor to determine the appropriate type of meter for an embedded retail generation facility, and states that the choice must be made on the basis of, among other things, what is reasonably required for settlement purposes.

In my view, except as noted below hourly interval metering is required for all embedded retail generation facilities. For generation facilities that are not subject to a RESOP contract, this follows from the requirement in section 3.2 of the RSC that energy sales be settled at the Hourly Ontario Energy Price (HOEP). For generation facilities that are subject to a RESOP contract, this follows from the fact that, with the exception noted below, the RESOP contracts require hourly information for settlement purposes.

By way of exception, hourly interval metering is not required for a micro-embedded ( $\leq 10\text{kW}$ ) retail generation facility that is the subject of a RESOP contract and that is either directly connected ( $G_d$  in Figure 1) or indirectly connected in parallel ( $G_p$  in Figure 1). This follows from the fact that payments under RESOP contracts for such generation facilities are not time-differentiated, and none of the non-competitive electricity charges (NCEC) that are to be settled require hourly recorded usage. An hourly interval meter is required for all other micro-embedded retail generation facilities.

It is also my view that a bi-directional interval meter is required for all embedded retail generation facilities other than those that are indirectly connected in series ( $G_s$  in Figure 1). This will allow for the accurate measurement of electricity withdrawn from the distribution system by the generation facility. This is not required for a generation facility that is indirectly connected in series, since, as discussed below, consumption by the generation facility is treated together with the load and measured by meter L in Figure 1.

A distributor may require that an embedded retail generation facility install a four-quadrant meter, but only, in my opinion, in situations where there are material operational requirements to measure reactive power (VARs). I expect that in these cases, the distributor will be prepared to explain and justify to the generator the need for a four-quadrant meter.

### ***Settlement and Billing***

The following discussion addresses certain settlement and billing issues. It does not address responsibility for and billing of connection costs or charges.

In accordance with the provisions of the RSC, an embedded retail generation facility is settled for energy either on the basis of HOEP or, if applicable, in accordance with the RESOP contract.

An embedded retail generation facility that is directly connected or indirectly connected in parallel should, in my view, be treated as a new customer account by the distributor. In both of these cases, the load and the generator are treated independently for settlement purposes. In contrast, an embedded retail generation facility that is indirectly connected in series is not, in my view, a separate customer of the distributor. In this case, the load and the generator are not treated independently for settlement purposes.

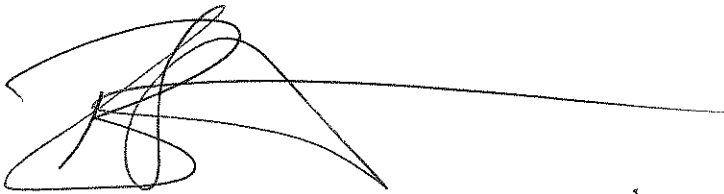
In the absence of anything to the contrary in a distributor's rate order, for the purposes of determining charges for energy and for NCEC, it is my view that an embedded retail generation facility that is either directly connected or is indirectly connected in parallel should be assigned to an existing rate class in accordance with the distributor's Conditions of Service, based on the load characteristics of the generation facility. For example, a generation facility that may on occasion draw energy from the distribution

system such that, if it were a load customer it would be classified as a load above 50kW, should be assigned to the same customer class and should be billed accordingly (based where applicable on the measurements recorded by meter Gp in Figure 1). In such cases, any associated load is metered separately and is therefore billed separately in accordance with the distributor's rate order and Conditions of Service for energy consumed by it and for NCEC (based where applicable on the measurements recorded by meter L in Figure 1). In contrast, because an embedded retail generation facility that is indirectly connected in series is not treated independently for settlement purposes, it is not in my view subject to customer account charges for energy or NCEC unless otherwise specified in the distributor's rate order. In such cases, the associated load is charged in accordance with the distributor's rate order and Conditions of Service for energy consumed and for NCEC (based where applicable on the measurements recorded by meter L in Figure 1).

### ***Related Initiatives***

In its determination of November 1, 2006 referred to above, the Board indicated that certain issues associated with the settlement of embedded retail generation facilities may be addressed as part of the Board's fundamental rate design initiative. Nothing in this Bulletin is intended to pre-empt the work of the Board in relation to that initiative or to other initiatives relating to the rate treatment of embedded generation facilities, and licensed electricity distributors and generators should be aware that these initiatives may result in regulatory requirements that differ from those expressed in this Bulletin. In addition, further implementation of the government's smart metering initiative may have an impact on the metering and settlement issues addressed in this Bulletin.

Please direct any questions you may have on this matter to the Market Participant hotline at 416-440-7604 or by e-mail at [market.operations@oeb.gov.on.ca](mailto:market.operations@oeb.gov.on.ca).

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

Brian Hewson  
Chief Compliance Officer  
Ontario Energy Board

No statutory power of decision has been delegated to the Chief Compliance Officer, and the views expressed in this Compliance Bulletin are not binding on the Board. The Chief Compliance Officer may seek enforcement action by the Board under Part VII.1 of the *Ontario Energy Board Act, 1998* in relation to non-compliance.

Attach.

Figure 1

