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ONTARIO ENERGY BOARD

22 August 2007

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street
27th Floor
Toronto, ON
M4P 1E4

2027/8

Dear Ms. Walli:

Re: EB-2007-0630 – Distributed Generation Rates and Connection Comments filed by GEC and endorsed by OSEA

Enclosed are three copies of Paul Chernick's comments in response to the Board Staff paper, filed on behalf of the GEC. OSEA has instructed me to indicate its support for the positions outlined in Mr. Chernick's paper.

Sincerely,

David Poch

EB-2007-0630

OEB BOARD SECRETARY	
File No:	SubFile: 5
Panel	PN, KQ
Licensing	
Other	BJ, MB, PD
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EB-2007-0630

Before the Ontario Energy Board
Consultation on Distributed Generation
Rates and Connection

Comments submitted on behalf of the Green Energy Coalition

Prepared by Paul L. Chernick, Resource Insight Inc.

Terminology:

In considering the issues in this proceeding, the Board should be careful to distinguish between three distributed-generation configurations:

- Load-displacement generation: distributed generation connected behind the customer meter, reducing the host customer's load on the distribution system and never flowing power into the distribution system.
- Distributed-supply generation: sometimes called merchant generation, this is distributed generation attached to the distribution system for the primary purpose of exporting power off-site, with little or no load served through the connection to the distribution system.
- Hybrid distributed generation: intermediate situations, where distributed generation is connected behind the customer meter, reducing the host customer's load on the distribution system and also exporting significant amounts of power into the distribution system.

In these comments, we will identify the configurations to which each topic applies.

The Board should also continue its policy of promoting socially advantageous cleaner generation. In this regard we will refer to 'preferred generation' which should be read to include both renewables and high-efficiency gas-fired combined heat and power (CHP).

Standby Rates

(Applicable to load-displacement and hybrid generation)

1. **What might be a reasonable billing determinant for recovering demand-related costs?**

Distribution-system costs are driven by loads in every hour. While maximum peak loads on any particular piece of equipment are important in determining the sizing of that equipment, other loads also impose costs:

- number of high-load hours determine risk of load loss following equipment failure, and hence drive redundant investment for reliability,
- number and extent of overloads determines life of insulation on lines and in transformers (both in substations and in line transformers),
- all energy in high-load hours, and even all hours on high-load days, affects sagging of overhead lines and insulation aging in underground lines and transformers,
- line losses depend on load in every hour (marginal line losses due to another kWh of load generally exceeds the average loss percentage in that hour)

Hence, the distribution charge for backup supply during a few hours every year, with a load factor well below 1% and a randomly-timed peak load, should be much lower than the charge for full-service supply, with a load factor over 50% and a peak load correlated with the system load. The proposal "to charge the same rate for standby service as would be charged if electricity were actually being supplied to the load" would grossly overcharge many customers with distributed generation. It would also fail to distinguish between the costs of serving a customer whose distributed generation has a 1% forced-outage rate, and one with a 20% forced-outage rate.

Even within the class of costs driven by maximum loads, the type of load seen by the LDC varies from a single customers' maximum load (as for many service drops) to the coincident load of many thousands of customers (as for most substations). In general, costs related to the maximum loads of a single customer should be recovered through measures of that customer's maximum load, while costs related to the coincident load of multiple customers should be recovered through measures of contribution to that coincident load.

For very large customers with distributed generation, it may be practical to meter load hourly and charge the customer for its contribution to system costs based on its load coincident with the feeder and/or substation peak, or at time of contingencies that stress the local system. For smaller customers, time-of-use energy rates will offer the best practical method for tracking the customer's contribution to load at critical periods.[1]

See below under Rate Classifications for further discussion of related rate design issues.

2. **Should standby charges be further differentiated between backup, maintenance and supplemental services?**

Ideally, rate design would not require differentiation among backup, maintenance and supplemental services. This goal can be accomplished by recovering system costs through a combination of time-of-use energy charges and charges at the system peak hour.

More specifically, maintenance that can be scheduled off-peak should not be charged for peak-related system costs, and rare back-up service should be

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[1] Some commenters may assume that the best method for approximating a customer's contribution to system maximum demands is to measure the customer's own non-coincident demand. This confusion may result from the use of the term "demand." The high diversity among the peak demands of full-service customers belies this assumption; there is likely to be little or no correlation between random outages of distributed generation and peak loads of the distribution system.