

# Ontario Energy Board Cost Allocation Review: Staff Proposal on Principles and Methodologies

## Comments of the Association of Power Producers of Ontario (APPrO)

### 1 INTRODUCTION

On June 28, 2006 the Ontario Energy Board (OEB or Board) released a report entitled *Cost Allocation Review: Staff Proposal on Principles and Methodologies* (Staff Proposal). The Staff Proposal sets out “Board Staff’s proposal for common cost allocation principles and methodologies to govern the cost allocation review informational filings due from licensed electricity distributors starting in the Fall of 2006.” The Staff Proposal invites stakeholders to comment by July 18, 2006. This submission constitutes the comments of the Association of Power Producers of Ontario (APPrO) in response to this invitation.

APPrO is particularly interested in the Staff Proposal as it relates to the rate classifications that will be comprised of power producers: Load Displacement Generation (LDG), Merchant Generation (MG) and Hybrid (Load Displacement and Merchant) Generation (HG).

A central issue for these rate classes is the definition of standby service. APPrO supports the Staff proposal that the use of standby rates for Run 2 will be limited to the three generation rate classifications.

*For the purposes of modeling costs to be allocated to standby service in Run 2 filing model, a customer will not be considered to be receiving a standby service unless the standby service requirements are greater than 500 kW. If the standby service is lower than that threshold, the customer should be treated as a standard customer in the classification of service it receives.<sup>1</sup>*

APPrO supports this proposal on the basis that distributors can provide standby service for customers with less than 500 kW demand without incurring any incremental costs as compared to other standard service customers. APPrO’s remaining comments are premised on the expectation that the Board will confirm this approach.

APPrO’s remaining comments are grouped into three areas:

- Section 2 deals with a number of issues related to the definition of the generation classes.
- Section 3 deals with issues related to the quantification of benefits and costs.
- Section 4 comments on two miscellaneous issues.

The final section summarizes APPrO’s conclusions.

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<sup>1</sup> Staff Proposal, s. 11.6.2.2, page 81.

## 2 DEFINING THE GENERATION RATE CLASSES

With respect to the definition of the three classes, APPrO notes that the Staff Proposal contains a detailed definition only for the LDG rate classification. The definitions for the MG and HG classes refer to “significant generation” but do not propose a specific threshold.

APPrO is of the view that the Board should provide greater specificity for the MG and HG rate classifications in order to ensure that the LDC cost allocation filings use rate class definitions that are appropriate and consistent, particularly with respect to Run 2.

The following comments on each rate class set out APPrO’s view of an approach to defining the generator rate classes that would be consistent with the overall methodology set out in the Staff Proposal, generally accepted cost allocation principles and the categorization of generators for other purposes such as net-billing and the Standard Offer Program.

### **Load Displacement Generation (LDG):**

- An LDG customer combines (i) a load that exceeds a specified threshold and (ii) generation that exceeds the same threshold. APPrO accepts the proposed threshold of 500kW which is consistent with the net-metering threshold.<sup>2</sup> A threshold of 500 kW is also consistent with the definition of “small” generation connected at less than 15kV to the distribution system for purposes of the Standard Offer Program.<sup>3</sup>
- An LDG customer’s generation capacity will be used primarily to displace power that would otherwise be supplied through the LDC’s distribution system. However, it may at times generate excess power that in most cases will be delivered to the distribution system on a net billing basis.<sup>4</sup> APPrO notes that if a generation customer with load displacement in excess of 500 kW generates “significant” excess power, it would fall into the HG rate classification.
- The LDG rate classification will include generation customers that require no power from the distributor except when their generation is offline as well as customers with total demand in excess of their generation capacity. Further, these customers may rely on a single generation unit or have a number of units that would offer diversity benefits by reducing the possibility that all units will be offline at the same time.
- Examples of existing distribution customers that would qualify for the LDG rate class are the University of Toronto and York University. There is significant potential in Ontario for additional generation that could fit into either the LDG or the HG class.

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<sup>2</sup> Staff Proposal, s. 11.6.2.1, page 81.

<sup>3</sup> See Ontario Energy Board and Ontario Power Authority (17 March 2006) “Joint Report to the Minister of Energy: Recommendations on a Standard Offer Program for Small Generators Connected to a Distribution System” (Joint Report) Table 1, page 38.

<sup>4</sup> The Joint Report suggests at page 46: “It is likely that few standard offer participants will be load displacement generators.” Nevertheless, it is possible that some existing or future LDG customers will deliver power to the distribution system under a contract with the OPA, OEFC or another party, in which case the contract quantity would be excluded from net-billing.

### **Merchant Generation (MG):**

- The Staff Proposal indicates that an MG customer would have (i) some load for its station when its generation capacity is offline plus (possibly significant) short-term load for black starts and (ii) generation that “provides a significant amount of generation into the distribution system”.<sup>5</sup>
- APPrO is of the view that for purposes of allocating costs to loads, all rate classes should be defined in terms of their load characteristics and hence their requirement for distribution service (i.e., not on the basis of their generating capacity). See section 4.1 below. Hence, for purposes of Run 2, customers should be included in the MG class only if their standby service requirements (e.g., for black starts or for station operations when the generation capacity is offline) are greater than 500 kW. If their standby service requirements are less than 500 kW, generators should be treated as a standard customer, consistent with the treatment of LDG loads, in terms of their requirement for distribution services.
- For customers in the MG rate classification, distribution costs that are caused by generation would be allocated to the class for purposes of Run 2. These costs would be kept separate from costs caused by the requirements of generators as loads. See section 4.1 below. Generation-related distribution costs would be recovered through connection charges.
- Generators typically pay capital contributions when connection facilities are required. These capital contributions must be deducted from the total generation-related capital costs incurred by the LDC, with only the net capital costs (depreciation cost of capital, etc.) being allocated to the rate classification. The treatment of connection costs is governed by the Distribution System Code (DSC).
- It should be noted that the Joint Report discusses rates and costs in section 5.4. Recommendation 5.13 in the Joint Report (page 45) states:

*Recommendation 5.13 The Board intends to consider the issue of the allocation of connection costs in relation to all generators, including those that may be eligible for the standard offer program, as part of its broader examination of electricity distribution rate design to commence in early 2006.*

Although the methodology is to be examined in this process, APPrO notes that the discussion contained in section 5.4 of the Joint Report provides relevant context for the treatment of connection costs for the MG rate classification.

- Existing generators that would qualify for the MG rate classification would include most of the existing distribution-connected Non-Utility Generators (NUGs) with contracts administered by the Ontario Electricity Finance Corporation (OEFC). However, there are close to 25 hydraulic NUGs and one gas-fired NUG with capacity that is less than 500 kW, some of which are connected to distributors.

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<sup>5</sup> Proposal, s. 11.6.8.1, page 86. The Proposal does not define “significant amount of generation” for purposes of determining the minimum capacity or annual power production for the MG class.

- For purposes of these comments, it is assumed that future MG customers generally will be Standard Offer Program participants.

### **Hybrid Generation (HG):**

- As noted above, an HG customer is the same as an LDG customer (both have a requirement for standby service for their associated load) except that an HG customer would have “significant generation above the customer’s load”.<sup>6</sup> The most logical approach to defining the HG class would be to define an HG customer as one that meets the criteria for both the LDG and the MG classes. Hence, an HG customer would have (i) a load that exceeds 500 kW and (ii) would have net generation that exceeds the threshold for the MG class. See section 2.2 below.
- The comments made above with respect to the LDG and MG rate classifications apply equally to the HG class. In particular, if their standby service requirements are below 500 kW, HG customers should be treated as standard customers, consistent with the treatment of LDG loads. In addition, the load-related and generation-related costs should be kept separate in the Run 2 cost allocation methodology so that connection costs are not included in the allocations used to assess distribution rates.
- Existing generators that would qualify for the HG customer classification would likely include distribution customers such as Queen’s University, Brock University and many of the existing cogeneration operations in the province.
- For purposes of these comments, it is assumed that future HG customers generally will be Standard Offer Program participants.

### 2.1 Generation as a Class with Three Sub-classes

It is APPrO’s view that the three generation rate classifications should be treated as sub-classes of a single rate class. To do otherwise would result in some or all of the diversity benefit realized by these customers not to be recognized in allocating costs to the class.

To illustrate, consider a distributor with three generation customers (one LDG, one MG and one HG) in its service area. The factor that distinguishes these customers from standard customers is not their loads, but the fact that they have generation facilities. Furthermore, the nature of their generation facilities does not determine whether they are LDG, MG or HG customers; it is the associated loads that determine their rate classification.

If the three customers are in a single rate class, there are obvious diversity benefits. The chances of their peak demand on the distribution system coinciding is no greater than the chances of the peaks of three large industrial customers coinciding. Load data will show their coincident and non-coincident peaks demands, including standby requirements.

There is also a significant diversity benefit in terms of the power generated by these customers. Planned outages can be scheduled to ensure that they do not coincide. Further, as the number of generators, and the number of individual units, increases so too does the

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<sup>6</sup> Proposal, s. 11.6.9, page 87. The Proposal does not define “significant generation above the customer’s load” for purposes of determining the minimum capacity or annual power production for the HG class.

peak hour reliability of the generation capacity. That is one of the benefits of DG generally – a large number of small generation units will have less variability in available capacity than a small number of large units.

In APPrO's view the diversity benefits associated with distribution-connected generation customers will be understated if the three generation rate classifications are treated as separate classes rather than a single class with three sub-classes. Failing to recognize the full diversity benefits of distribution-connected generators will create an unnecessary and inappropriate financial impediment to the future development of DG.

## 2.2 Establishing the Threshold for the MG and HG Rate Classifications

The Joint Report defines four size categories of embedded generation.<sup>7</sup> The reasons for defining these cost categories are set out at page 37 of the Joint Report.

*The four size categories were developed by a working group including distributors, generators and Board staff. The different size categories stem from the technical impacts of each category on the distribution system. To facilitate connection of generation to distribution systems, the DSC allows flexibility to shift a project from a larger size category process requirement to a smaller one. This helps a generator, upon mutual agreement with the distributor, to follow a process that is shorter and with fewer requirements.*

APPrO is of the view that it would be consistent, convenient and reasonable to use these Standard Offer Program categories as a basis for determining which generation customers should be included in the MG and HG classes. In particular:

- If a generator is classified as a micro or small generator for purposes of the Standard Offer Program, it should be considered to be below the threshold for the MG and HG rate classifications.
- Generators that are classified as mid-sized or large for purposes of the Standard Offer Program based on their net generation should be included in the MG rate class if their load is below the 500 kW threshold proposed for the LDG class.
- Generators that are classified as mid-sized or large for purposes of the Standard Offer Program based on their net generation should be included in the HG rate class if their load exceeds the 500 kW threshold proposed for the LDG class. These generators would be HG customers because their load is sufficient to qualify for the LDG class and their net generation is sufficient to qualify for the MG class.
- Although an important consideration in adopting these thresholds is consistency with the LDG class and with the Standard Offer Program, there is clearly no need for an existing or future generators to participate in the Standard Offer Program in order that the definition to be workable.

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<sup>7</sup> See Joint Report, Table 1, page 38. The four categories are micro, small, mid-sized and large.

### 2.3 Definition of Load for Load Displacement Generation (LDG) Customers

With respect to the calculation of the total load for the LDG class, the Staff Report states “A load associated with a customer receiving standby service will be the full load of the customer, which includes the load when the load displacement generator is running and the incremental load [when] the generator is not running. Therefore the section below will deal with the costs allocated to the full load of the customer and not just the load displacement component.”<sup>8</sup>

In APPrO’s view, this approach is unacceptable because it assumes away any possibility that there is a diversity benefit related to the LDG rate classification, even if there is more than one LDG customer and even if the customers has multiple generation units that provide diversity. Put simply, it would result in the allocation of costs based on the assumptions that (i) the customer requires standby service under peak conditions equivalent to 100% of its generation capacity and (ii) that there is no diversity benefit associated with LDG.

Given the cost allocation principles set out in the Staff Proposal, it is clear that this approach is valid only if in designing the distribution system the capacity of all bulk, primary, secondary and >50kV assets deemed to be distribution are based on the assumption that there is no load displacement generation during the design peak period. While it may be arguable that it is appropriate for LDCs to make this assumption if there is only one LDG customer with only one generation unit in its service area (there is a risk that the LDG customers will have an unplanned outage that coincides with the system peak), this assumption is no more credible when there are multiple generation customers or units than the assumption that the peak demand of all customers will have coincident peaks.

Furthermore, the Staff Proposal itself appears to recognize that the assumption that LDG customers provide no diversity benefit is not credible.

*This issue has received considerable attention in other jurisdictions and therefore it is important to explicitly address. For example, it is understood FERC rules provide standby service rates ‘shall not be based upon assumption (unless supported by factual data) that forced outages or other reductions in electric output by all qualifying facilities on an electric utility’s system will occur simultaneously, or during the system peak, or both’. The Technical Advisory Team cautioned it should not be assumed that there will be diversity benefits in all circumstances. The benefits of diversity are expected to grow as the number of load displacement facilities increases.*<sup>9</sup>

In APPrO’s view, the cost allocation methodology should explicitly recognize that LDG reduces LDC peak demand, design and investment requirements. The practical reality is that no component of the electrical infrastructure (generation, transmission or distribution) other than the most local facilities is designed to meet the sum of the non-coincident peaks of all loads. The design capacity of the system takes into account the diversity benefits that arise as a result of the degree of coincidence of demand.

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<sup>8</sup> Staff Proposal, s. 11.6.2.2, page 82.

<sup>9</sup> Staff Proposal, s. 11.6.6.1, page 85.

The costs that are allocated to the various classes of load on the basis of their non-coincident peaks are only those costs associated with portions of the distribution system that do not benefit from diversity – local facilities.

Furthermore, even for costs that are allocated to the rate classifications on the basis of the non-coincident peak demand, it is the within-class coincident peak that is used for cost allocation purposes. The principle behind this approach is that the within-class diversity benefits associated with each classification of load should be credited to that class, while any inter-class diversity benefits should be shared among the classes that contribute to that diversity. If the approach proposed by Staff is adopted the generator classes will not even receive credit for within-class diversity benefits because the within-class demand used for cost allocation purposes will be the non-coincident peak demand. There is no other class that is allocated costs on the basis of the within-class non-coincident peak.

#### 2.4 Loss of Diversity Benefits Due to Separation Generator Classes

APPrO is also concerned that the Staff Proposal will penalize LDG customers by denying them the diversity benefit of their load that would be recognized if they had no generation capacity.

*In Run 2, the customers with load displacement will be assigned to a separate rate classification and only the diversity benefit associated with the customers using standby service will be reflected in the classification's unit costs.<sup>10</sup>*

As has already been noted, the reality is that LDG provide two distinct diversity benefits that should be recognized.

- First, the gross load of an LDG customer provides the same diversity benefit whether or not it is generating power. It is not appropriate to treat the LDG class as a separate class which has the effect of eliminating any credit for this diversity benefit although there has been no change in the gross load.
- Second, to the extent that some generation can be treated as reliable at system peak for specific distribution assets (the reliability of generation due to the diversity of multiple LDG customers will differ for bulk, primary, secondary and >50kV assets deemed to be distribution), the availability to LDG power that displaces distributed power will reduce system costs. This is a system diversity benefit that should be recognized in the cost allocation filings.

An important element of any cost allocation methodology is the recognition and allocation of the diversity benefits that arise due to the non-coincident peaks of different customers, including the benefits associated with the generation of LDG customers.

APPrO therefore recommends that for purposes of Run 2, the generation classes should be treated as sub-classes of the relevant standard classes, based on their total load requirements.

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<sup>10</sup> Staff Proposal, s. 11.6.6.3, page 86.

### 3 QUANTIFICATION OF THE COSTS AND BENEFITS OF THE GENERATOR CLASSES

#### 3.1 Requirement for Specialized Studies

APPrO notes that the Staff Proposal states in section 11.6.1 that “Even with regard to the potential benefits on the distribution system arising from load displacement generation, members of the Technical Advisory Team have cautioned that full quantification of all potential benefits requires specialized studies that are unlikely to take place through these filings.”

In APPrO’s view, the OEB should ensure that the benefits of DG are quantified and recognized on a timely basis to avoid inefficient economic impediments to investment in DG.

APPrO therefore recommends that any LDC that states in its Filing that it requires future specialized studies in order to quantify all of the benefits of LDG, MG and HG to its distribution system should be required to include in its Filing the LDCs plans for completing these studies. The LDCs plans should include a description of the required data collection and analysis, the information that it expected to result and the date by which the LDC commits to complete the required studies.

Furthermore, in the absence of specialized studies, it is not appropriate to assume for purposes of the cost allocation filings that the best available estimate of the relevant benefits and costs is zero. Instead, LDCs should be required to provide the best available estimate of the costs and benefits associated with the potential adjustments identified in Appendix 11.1 of the Staff Proposal. The LDCs should also be required to provide the basis of the benefits and cost estimates that they provide.

The Board and interested parties will be able to comment on the estimates provided by the LDCs in order to ensure that they are reasonable. Where the estimates vary significantly across LDCs with no explanation for the differences it may be appropriate for the Board to determine a standardized value to be used by all LDCs for purposes of their cost allocation studies. If this is done, only those LDCs that have completed relevant specialized studies would be able to use LDC-specific values in place of the standardized cost and benefit values.

APPrO is particularly concerned that LDCs will be unable to provide estimates of relevant costs and benefits if they currently have no generation customers in their franchise areas. Furthermore, they may be of the view that they cannot estimate the diversity benefits that will accrue as DG proliferates across Ontario. If the absence of current information results in discounting of the benefits of increased diversity with the growth of DG in the distribution sector, the benefits of DG to the distribution system will be understated and hence the costs allocated to the generation rate classifications will be overstated. If this bias is reflected in rates, the distribution rates paid by generators for distribution service, including standby service, could serve as an impediment to the development of DG projects that will in fact lower the cost of power in Ontario and contribute to the achievement of the energy and environmental objectives of the Ontario Government.



### 3.2 Full Recognition of Diversity Benefits

APPrO acknowledges the limited scope of the current process, as noted the Staff Proposal.

*Identification and quantification of benefits and costs arising from load displacement facilities on the other parts of overall electricity sector, such as the transmission system, will not be addressed in these filings. Some benefits from load displacement facilities may not accrue to the distributor.<sup>11</sup>*

Nevertheless, it should be recognized that the Cost Allocation Review provides a good opportunity to collect the information that will be needed to address important policy issues related to the upstream benefits of distributed generation (DG). In particular, the load and generation data that are to be filed by the LDCs for the generation rate classifications will provide a good basis for assessing the transmission benefits of DG, at least to the extent that existing distributed generation falls into those rate classifications.

APPrO therefore urges the Board to ensure that the data collected are available to other parties, including the OPA, for analysis of the diversity benefits of DG.

It should also be noted that distribution-connected generation will reduce the LDC's network service transmission charges. This reduction in costs for the LDCs is a reflection of the upstream benefits from load displacement that accrues to the distributor. Furthermore, the benefit will be realized whether a customer's own load is displaced (LDG and HG customers) or because power is delivered to the distribution system that displaces the requirements for power delivered through the transmission grid (MG and HG customers).

Given that these benefits relate to the generation function of customers, APPrO notes that the treatment of these benefits should be consistent with the treatment of generation-related costs in the LDC's cost allocation filings. In particular, if costs that are attributable to the generation function of these customers are directly assigned to the generation rate classes, then these and other benefits of DG should also be directly assigned to the generation rate classes. This issue should also be addressed in the future rate design process.

To the extent that benefits are not captured through the design of the cost allocation process (e.g., by creating sub-classes for generation customers), they should be identified through the separate quantification of the costs and benefits identified in Appendix 11.1.

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<sup>11</sup> Staff Proposal, s. 11.6.1, page 81.

#### 4 OTHER METHODOLOGICAL ISSUES

##### 4.1 Separating Load-related from Generation-related Costs

APPrO notes that the discussion of principles and methodologies contained in the Staff Proposal focuses on the appropriate approach to allocating costs related to distribution loads. Hence, the principles and methodologies set out in the Staff Proposal focus on the allocation of costs caused by the generation rate classifications (LDG, MG and HG) only to the extent that they are distribution loads.

The principles and methodologies to be used for costs caused by the generation of power by these customers do not rely on the traditional functionalization/categorization/allocation steps for costs that are not directly allocated. It is therefore appropriate and necessary to clearly separate the load-related and generation-related costs that are incurred by an LDC and recovered through customer charges.

For this reason, APPrO's comments on the principles and methodologies to be used for allocating costs to the generator rate classifications deal separately with load-related and generation-related costs throughout this submission.

APPrO expects that these costs will be directly assigned to the relevant generation sub-classes, with the costs allocated being the net costs after taking into account customer contributions.

##### 4.2 Allocation of CDM Costs

The Staff Proposal states that "In the cost allocation filings, the capital and indirect or overhead components of CDM costs will be allocated across all rate classifications based on a combination of the energy consumed and the demand used by the rate classification. The allocation of CDM costs will reflect a 50% energy and a 50% demand allocator."<sup>12</sup>

APPrO notes that it would be inappropriate to include generation capacity in the demand allocator used to allocate CDM costs to the LDG rate classification. (Also see the comments in section 2.3.)

Furthermore, APPrO is of the view that DG, including virtually all distribution-connected generation, serves many of the same goals as those pursued by Ontario CDM programs. DG projects generally relieve pressure on the Ontario transmission system, most DG projects are environmentally friendly, and they reduce the need for the development, or continued operation, of large-scale nuclear, coal and gas-fired generation. Given the role served by DG generally, and the generation rate classifications specifically, APPrO recommends that CDM cost should not be allocated to the generator rate classes.

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<sup>12</sup> Staff Proposal, s. 9.3.4.2, page 66.

## 5 SUMMARY AND CONCLUSIONS

APPrO agrees with the Staff proposal that for purposes of Run 2 customers will not be considered to be receiving a standby service unless the standby service requirements are greater than 500 kW. Hence, all customers requiring less than 500 kW of standby service will be treated as standard customers.

With respect to the MG rate classification APPrO recommends that customers should be included in this class only if they would be classified as mid-sized or large generators for purposes of the Standard Offer Program based on their net generation.

Generators should be included in the HG rate classification only if they meet the criteria for both the MG class (i.e., would be classified as mid-sized or large for purposes of the Standard Offer Program) and the LDG class (i.e., their load exceeds 500 kW).

In order to capture the diversity benefits of generators in Run 2, APPrO recommends that generation classes be established that are sub-classes of each relevant standard class. Furthermore, these generation sub-classes should be further divided into sub-sub-classes for LDG, MG and HG customers, as appropriate.

In preparing Run 2 results in the cost allocation filings, the load used for customers in the LDG sub-classes should be the sum of the actual load plus the coincident peak standby requirement that is needed to maintain system reliability. For LDCs with multiple LDG customers and/or LDG customers with multiple units, the appropriate system design standby requirements will be significantly less than the full load of the LDG customers.

To the extent that the costs and benefits of DG are not captured by the basic cost allocation model used for Run 2, all LDCs should be required to provide their best estimate of all relevant costs and benefits as set out in Appendix 11.1 of the Staff Proposal. Where the Board has concerns about the veracity of the filed estimates, it should establish standardized values (based on the LDC filings in aggregate) to be used by any LDC that has not completed an acceptable specialized study for the relevant benefit or cost.

APPrO notes that the principles and methodologies for allocating generation-related distribution costs have not been explicitly addressed in the Staff Proposal. APPrO expects that these generation-related distribution costs will be directly assigned to the relevant generation sub-classes, with the costs allocated being the net costs after taking into account customer contributions.

Given the role served by DG generally, and the generation rate classifications specifically, APPrO recommends that CDM cost should not be allocated to the generator rate classes.