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# MSA Report

## Wholesale Market Shares of Offer Control

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Market Surveillance Administrator

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# 1 INTRODUCTION

In November 2006 the MSA published a report entitled *Market Concentration Metrics*. Market shares and market concentration in the wholesale market was subsequently the subject of significant discussion at the Section 6 committee. Most recently the Alberta Department of Energy's White Paper on Implementation of Policy Enhancements Supporting Section 6 included a 'market share offer control test'.

Given the above, it seems timely to revisit the subject of market concentration of offer control. In late May, 2008 the MSA contacted the six largest market participants with a request to fill in an electronic form describing the nature of the assets that they offer into the Pool (See Appendix A for the format of the request). The participants were very cooperative and we were able to finalize the collection process quite quickly to allow the preparation of this brief report. We hope that providing a simple template minimized the effort required by the participants.

During the data collection a number of market participants asked the MSA questions about what metrics would be considered and suggested alternatives. In Appendix B we provide answers to those questions and further comments where appropriate.

The MSA will be pleased to hear from market participants with comments, including suggestions on alternate metrics or on the relative merits of simple vs. complex metrics and the associated requirements for data collection. However, such commentary may be more appropriately directed to the discussions on the new White Paper that the Department of Energy announced at the June 27, 2008 EUA Advisory Committee meeting.

# 2 MARKET SHARE CALCULATIONS

There are many different variations on how to calculate the market shares attributable to market participants. More elegant versions could discriminate among control of different types of capacity. For example, control of flexible capacity, as offered by a peaking gas unit, might be inherently more valuable than control of a similar amount of must-run hydro or cogeneration plant with significant steam obligations. However, it is inordinately difficult to quantify what the relative values are. Consequently, for the purposes of this report, the focus has been on very simple measures. Variations examined herein indicate that over a fairly wide range of alternative assumptions the results are reasonably consistent, a result that provides some comfort. While the inclusion / exclusion of wind currently makes only a modest difference to market share statistics, with the expected growth of wind to several thousand MW in the coming years this is unlikely to continue to be the case.

**Metric 1:**

$$\frac{\text{MC controlled by market participant x}}{\text{MC of all generation}}$$

**Metric 2: Including wind**

$$\frac{\text{MC controlled by market participant x}}{(\text{MC of all generation} + \text{MCR of wind generation})}$$

**Metric 3: Including intertie**[1]

$$\frac{\text{MC and firm transmission controlled by market participant x}}{(\text{MC of all generation} + \text{max. ATC in previous year})}$$

**Metric 4: Including wind and intertie**

$$\frac{\text{MC and firm transmission controlled by market participant x}}{(\text{MC of all generation} + \text{MCR of wind generation} + \text{max. ATC in previous year})}$$

**Table 1: Simple Market Share Offer Control Metrics**

| Market Participant | Metric 1 | Metric 2: Including wind | Metric 3: Including intertie | Metric 4: Including wind and intertie |
|---|---|---|---|---|
| **Participant A** | 12% | 11% | 11% | 11% |
| **Participant B** | 22% | 21% | 22% | 21% |
| **Participant C** | 16% | 15% | 15% | 14% |
| **Participant D** | 19% | 18% | 17% | 17% |
| **Participant E** | 9% | 9% | 8% | 8% |
| **Participant F** | 7% | 7% | 6% | 6% |
| **Other*** | 16% | 19% | 21% | 24% |
| **Total** | **100%** | **100%** | **100%** | **100%** |

* Other includes MW controlled by other market participants and MW's not controlled by any market participant (for example wind in metrics 1 and 2).

[1] ATC in the previous year covers the period June 1, 2007 to May 31, 2008.

## APPENDIX A: INFORMATION REQUEST

**Market participant** – name of market participant and affiliated market participants
**Date –** date on which submission made
**Contact information** – Name, job title , email, phone number. The contact person should be able to answer questions regarding the participants' response.

**SECTION A:** Assets for which the market participant is the submitting participant

**[A] Asset name** – should match the unit name as listed on the AESO's Current Supply and Demand Report (http://ets.aeso.ca/ets_web/ip/Market/Reports/CSDReportServlet)

**[B] Asset ID** – should match the three or four digit alpha-numeric identifier assigned to each unit as listed on the AESO's Current Supply and Demand Report

**[C] Maximum Capability (MC)** – the maximum capability of the asset (the sum total of the offers made for the source asset in accordance with ISO rule 3.5.3.1). This value is not necessarily the MCR listed on the AESO's Current Supply and Demand Report.

**[D] MC controlled by the market participant –**Any MW for which the market participant determines the price associated with offers. If this number is variable (e.g. due to requirements of an industrial process) include the maximum possible number of MW over which the participant could set price.

**[E] MC controlled by other market participants –** Any MW for which another market participant determines the price associated with the offer. If this number is variable (e.g. due to requirements of an industrial process) include the maximum possible number of MW over which another participant could set price.

**[F] List of other controlling participants –** This field should list the name of the market participant and the number of MW controlled by the participant. The list should be delimitered by ',' with MW levels enclosed in '( )'. The total of the MW levels listed in this should be equal to the number in field (E). Example: 'Anonymous Power Ltd (20), 'Acme Energy Company (10)'.

**[G]Unaccounted for MC –** no input required, calculation field (column [C] – [D]-[E])

**[H] Reasons –** supply reasons for 'Unaccounted for MC', continue on separate sheet if more space required.

**SECTION B:** Assets for which the market participant is not the submitting participant but has control over the price or quantity offered.

**(A) Asset name** – as defined in Section A

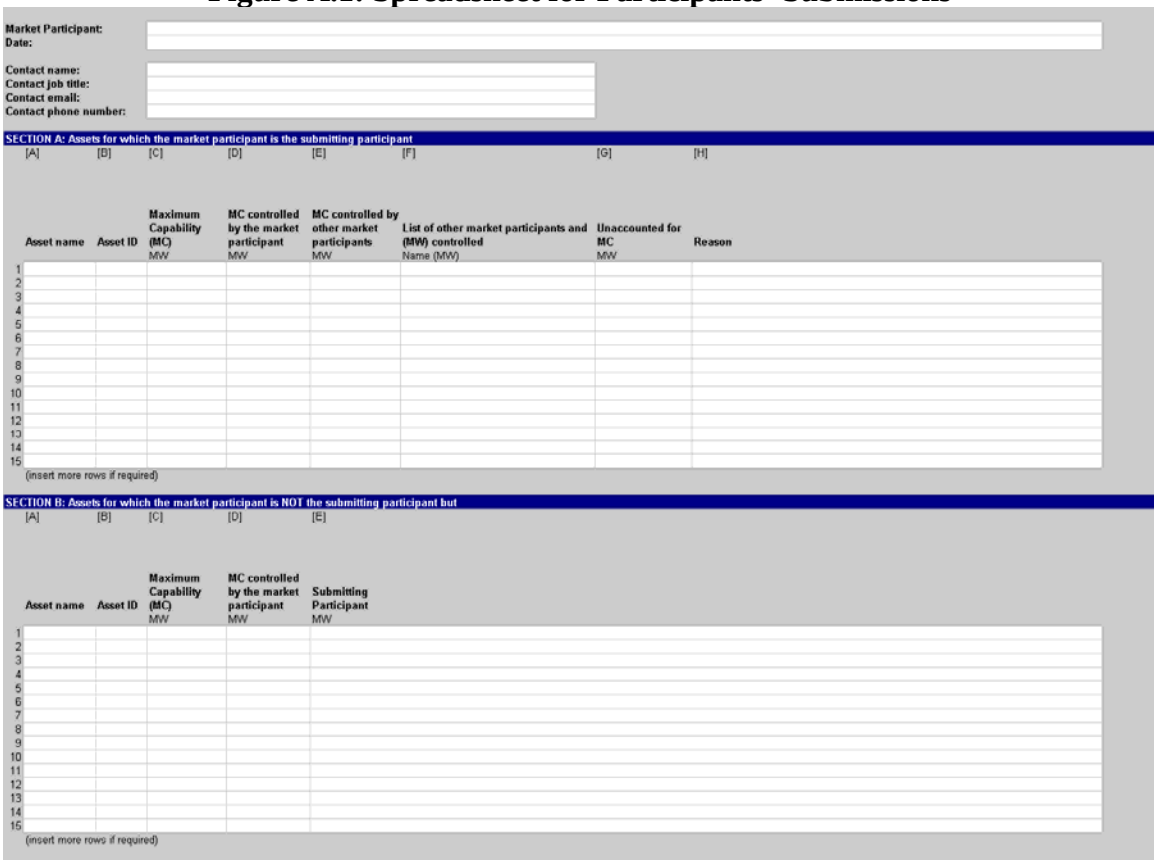
**(B) Asset ID** – as defined in Section A

**(C) Maximum Capability (MC)** – as defined in Section A

**(D) MC controlled by the market participant –** As defined in Section A

**(E) Submitting participant –** please list the name of the submitting participant. The MSA may seek to clarify the data submitted in Section B with the submitting participant.

## Figure A.1: Spreadsheet for Participants' Submissions



Market Participant:
Date:

Contact name:
Contact job title:
Contact email:
Contact phone number:

**SECTION A: Assets for which the market participant is the submitting participant**

| | [A] | [B] | [C] | [D] | [E] | [F] | [G] | [H] |
|---|---|---|---|---|---|---|---|---|
| | Asset name | Asset ID | Maximum Capability (MC) MW | MC controlled by the market participant MW | MC controlled by other market participants MW | List of other market participants and (MW) controlled Name (MW) | Unaccounted for MC MW | Reason |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |

(insert more rows if required)

**SECTION B: Assets for which the market participant is NOT the submitting participant but**

| | [A] | [B] | [C] | [D] | [E] |
|---|---|---|---|---|---|
| | Asset name | Asset ID | Maximum Capability (MC) MW | MC controlled by the market participant MW | Submitting Participant MW |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | | |

(insert more rows if required)

## APPENDIX B: QUESTIONS FROM MARKET PARTICIPANTS

### B.1 Maximum Capability (MC) vs. Maximum Continuous Rating (MCR)

In the information request the MSA asked market participants to provide Maximum Capability (MC) values for their units. An alternative would be to use a unit's Maximum Continuous Rating (MCR). Both the MC and MCR are defined under the ISO rules:

> **"maximum capability"** means:
>
> - for a **generating asset**, the maximum quantity (**MW**) that the **generating asset** is physically capable of providing under optimal operating conditions for that **asset** while complying with all applicable **ISO rules** and terms and conditions of the **ISO tariff**; or
>
> - for an import **source asset**, the **available capability**.
>
> **"maximum continuous rating" (MCR)** means the maximum net power output that can be sustained by a generator.[2]

Under ISO rule 3.5.3.1 all source assets with a maximum capability of 5MW must submit offers and the total of offers must equal the maximum capability. The definition of MCR is less clear – some market participants frequently offer and generate in excess of their MCR. MCR's are not referred to under the ISO Rules, but are referred to in OPP 517 and OPP702. The MSA considers MC to be a better measure since it is more robustly defined, data is readily available and it refers only to units and MW's that are offered into the market (i.e. that are 'controlled'). Wind resources and small power producers that do not offer into the market do not have MC values (in metrics including wind we have used the MCR value – see section B.5

MC values also incorporate some allowance for generation behind-the-fence. Generators who have chosen to be net-to grid may have MC values significantly lower then MCR. MW's above MC can never be offered in the energy market (although may still be produced to meet on site load).

### B.2 AESO data vs. Information Requests from Participants

One participant asked why the MSA did not obtain all the data required direct from the AESO. The simple reason is the AESO maintain records of who submits offers but not who 'controls' those offers. In many cases, submitter and controller are coincident but this is not necessarily the case. Some information on 'control' is contained in Agency agreements filed with the AESO but in most cases does not contain sufficient detail.

Where possible the MSA has used data available from the AESO. For example, the denominator for our market shares (variants around the sum of MC values) was obtained from offer data submitted by all participants to the AESO. For this reason the MSA was able to limit the data request to not include smaller participants who, while collectively important in determining the denominator, are not individually large.

[2] *ISO Rules, May 1, 2008*

### B.3 Treatment of Minimum Stable Generation

One participant asked the MSA to consider excluding minimum stable generation from the definition of 'offer control' since in practice there was limited control over such MW's. There are some problems in doing so. Whereas MC is a constant value, minimum stable generation is not. Under the AESO rules:

> **"minimum stable generation"** means the minimum generation level that an **asset** can be continuously operated at without becoming unstable.

A thermal unit's minimum stable generation may vary if experiencing operating constraints. For cogeneration or industrial systems, minimum generation may be determined by steam requirements. For hydro resources, minimum stable generation may be highly variable and determined by environmental rather than technical constraints. For some units there is also a distinction between a technical feasible 'minimum stable generation' and an economic 'minimum stable generation' (where total variable cost is minimized). For yet other units, participants may have entered into contracts that place restrictions on how a unit operates or that limits how much control they have over pricing. However, for most units some control exists over whether or not to run the unit – even if once running they may be technically constrained to offer inflexible blocks.

Incorporating 'minimum stable generation' or other qualitative modifications to 'offer control' are possible, but depending on the assumptions can add significantly to the data gathering requirements and the complexity of final metrics.

### B.4 Treatment of the Intertie

Including the interties in market share metrics requires consideration of both a 'capacity' and 'control' measure. In terms of 'capacity' practical options include:

- rated capacity of interties
- historical measures of actual import available transfer capability; or
- a forward looking measure of expected import available transfer capability

Each option has some attractive features. Rated capacity in some ways seems closest to MC. However, the difference between rated capacity and the likely or even maximum ATC available is large. Forward looking measures of ATC are limited to 6 months of data (the AESO forecast window). Historical (backward looking) measures of ATC are the simplest to calculate. In considering ATC it is possible to look at mean, median or maximum values.

There are fewer options to measure 'control' on the interties. Firm transmission holdings are the only real option, recognizing that firm holdings do not necessarily exclude others from using that transmission. The MSA also recognizes that recently the sales of firm transmission have exceeded the likely ATC on the BC intertie. Consequently, if 'control' was measured simply by firm transmission holdings and capacity by expected or median ATC the sum of MW's controlled may exceed 100%. The MSA also notes that firm transmission holdings may vary over time. If forward looking measures are considered

preferable this would require the MSA to collect data from market participants on expected future transmission holdings. Using backward looking measures would be simpler but similarly require assumptions regarding the amount of ATC controlled over the period.
For the purposes of this report the MSA has considered metrics excluding the intertie entirely (neither in the denominator or numerator) and including the intertie based on maximum ATC in the previous year with an estimate by the MSA of firm transmission holdings over the previous year. Given the small difference between maximum and median ATC the MSA has not considered a metric using median ATC and a pro-ration of firm transmission.

### B.5 Treatment of Wind Generation

As noted in Section B.1 wind generation does not offer into the market and consequently does not have an MC value. Treatment of wind generation was discussed at the Section 6 committee with a variety of opinions about whether it should be included or excluded from both the numerator and denominator. In this report we have considered metrics with wind included and excluded from the denominator (based on total MCR). We note that the inclusion of wind currently makes only a modest difference to market share statistics but with the expected growth of wind to several thousand MW in the coming years this is unlikely to continue to be the case.

### B.6 Treatment of 'price-responsive' load

Some loads within the province are price responsive and the MSA recognizes they are an important part of the competitive landscape. Loads are not required to bid into the market and measuring control is problematic. The MSA is aware that some market participants have had formal and less formal relationships with load customers, whereby a market participant is able to exert varying degrees of influence over a load's decision to consume. Such arrangements are not currently required to be reported and consequently it difficult to include in market share metrics.