

Minutes of Meeting

Date held:	Time held:	Location held:
December 16 th , 2010	8:00 am – 11:45 am	Toronto Congress Centre
Invited/Attended	Company Name	Attendance Status (A)ttended
Cary, Rob	Rob Cary & Associates	A
Ellard, Barb	Ontario Power Authority	A
Neusbaum, Steve	Ontario Power Authority	A
Nollert, Beverly	Ontario Power Authority	A
Peterson, Dave	Ontario Power Generation	A
Dorey, Steve	Charles River Associates	A
Mansell, Matthew	Ministry of Energy and Infrastructure	A
Rogacki, Richard	Ministry of Energy and Infrastructure	A
Chee-Aloy, Jason	Power Advisory LLC	A
Brown, David	Ontario Energy Board	A
Brason, Tracy	Brookfield Power	A
Levy, Tom	Canadian Wind Energy Association	A
Graham, Cindy	Enbridge	A
Maniawski, John	Enbridge	A
Lamont, Michelle	Enbridge Ontario Wind Power	A
McMillan, Brian	Greater Sudbury Hydro	A
Daye, Tony	Green Power Labs	A
Norris, Paul	Ontario Waterpower Association	A
Campbell, Bruce	IESO	A
Chung, Jo	IESO	A
Drake, Gordon	IESO	A
Finkbeiner, Darren	IESO	A
Freire, Joseph	IESO	A
Huber, Devon	IESO	A
Penic, Jordan	IESO	A
Trickey, Candice	IESO	A
Scribe: Devon Huber Please report any corrections, additions or deletions to: stakeholder.engagement@ieso.ca		

All meeting material is available on the IESO web site at:

http://www.ieso.ca/imoweb/consult/consult_se91.asp

Item 1 Welcome and Introductions

Candice Trickey of the IESO kicked off the session by welcoming the group.

Bruce Campbell of the IESO introduced the Renewables Integration initiative. Bruce noted that the work associated with this initiative is a priority for the IESO, and will be undertaken in a coordinated fashion with the OPA. Bruce further noted that the IESO intends to work with participants in an expeditious manner, and that it is essential that the bulk of the work required to integrate 5,800MW of renewable facilities be completed by mid 2012.

Item 2 Integrating Renewable Resource – Design Principles Presentation

Darren Finkbeiner of the IESO presented an overview of the Renewables Integration initiative and the SE-91 Renewables Integration stakeholder engagement plan. Darren noted that SE-57 (Embedded and Renewable Generation) has been closed and all renewables related work will be consolidated under SE-91. Next, Darren presented a summary of the operational challenges of integrating variable resources such as wind and solar generation, including their potential impact on surplus baseload generation, while maintaining system reliability. The eleven design principles were then presented, followed by a high level summary of the implications for directly connected and embedded renewable generators.

Barb Ellard from the OPA discussed the close coordination of efforts between the IESO and the OPA on the renewable integration work. She noted that the OPA is aware that market rule changes may trigger contract clauses and that the OPA is committed to working with suppliers in a cooperative fashion to revise contracts where appropriate. The OPA is committed to open dialogue throughout the stakeholdering process. It was noted that system efficiency will be key when making decisions on renewable integration related work. Ms. Ellard emphasized the OPA's commitment to participating in stakeholder sessions.

Candice Trickey of the IESO outlined upcoming stakeholder sessions for SE-91. Candice informed the group that a second meeting, repeating the material presented in the current session, will take place on January 11th to accommodate schedules around the holiday season. The IESO is looking for written feedback from stakeholders on the principles, by January 17th, and will address the feedback at a follow up meeting in February. Written feedback can be e-mailed to stakeholder.engagement@ieso.ca.

Attendee Questions, Comments and Discussion

The following questions were asked regarding the presentation, with the IESO's response in italics:

- An attendee asked how the IESO is defining surplus baseload generation and whether NUGs are included in the definition.

The IESO responded that in this example SBG has been defined (in part) as any time when a resource could not produce electricity from a fuel that could not be stored. The determination of SBG is dependent on the

level of demand and the availability of baseload generation, which takes into account generator outages. Currently, the production from NUGs contributes to SBG.

- As a follow up question, an attendee asked if it was still considered an SBG condition if excess baseload generation could be addressed with exports, i.e. comparing baseload with market demand rather than Ontario demand.

The IESO responded that if you can increase demand via exports to absorb all baseload generation then we would not consider that a surplus condition. It was noted that the exposure to surplus conditions presented were based on average generator outputs and are absent exports.

- An attendee commented that the planned integration of over 10,000 MWs of renewable resources is for such a distant point in the future that it would be unrealistic to use that value as the basis for the renewables integration related work.

The IESO generally agreed with the comment, by noting that the immediate work related to renewable integration is based on nearer term and firmer resource commitments, but that the work would also be scalable to incorporate larger penetration levels of renewables as outlined in the Long Term Energy Plan.

- An attendee asked what the proposed timeline is to have rules presented to the Technical Panel if the IESO intends to have a framework for managing renewables in place for mid 2012.

The IESO responded that a Renewable Integration Initiative (RII) is already underway within the IESO that includes a cross functional team. The RII team is developing high level design details that will be presented to stakeholders. Pending the final wording of the design principles, design details and market rules that address immediate needs will be developed first and subsequent design details and amendments will follow. Given that the simplest market rule amendment generally takes 4 months, rule development will be given a high priority.

- An attendee asked, given the proposed 5 minute dispatch and deadband, whether the intent was to still have renewables producing as much as possible.

The IESO responded that over the long term that is the case. In the near term and depending on the solution (which may be interim) the dispatch and associated compliance rules will be limited by the functionality of the Dispatch Scheduling Optimizer (DSO). The DSO makes certain assumptions about the expected output from generators, and based on the assumptions schedules sufficient generation to meet forecast demand. If the actual production from generators does not match the algorithm's assumptions, then the system may not be in balance which may require greater reliance on regulation (AGC) or operating reserve. As part of the design process the implications of different decisions will have to be investigated.

- In a follow up question an attendee asked if the forecast would be used to calculate foregone energy in the event of a dispatch.

The IESO responded that ultimately when a variable generator is dispatched down, meteorological information is required to know what level of output the DSO can dispatch a generator up to, and can also be used to calculate the foregone energy.

- An attendee asked if the IESO would consider the ERCOT example, and allow market participants the option to continue to submit a forecast and compare that forecast to a vendor forecast and use whichever forecast is more accurate. Similarly, an attendee asked if the IESO would consider publishing information on the integration of renewables in other jurisdictions. Specifically, it was asked if the IESO could provide information on forecast methodologies, dispatch, offers, dispatch compliance (sanctions and penalties) and settlement processes of renewables in neighbouring jurisdictions.

The IESO noted that its current understanding for the reason generators have the option to provide a forecast in ERCOT is to do with market design and the financial implications of differing production levels from forecast. It was also noted that the IESO is committed to learning from other jurisdictions and integrating industry best practices. Due consideration will be given to relevant market mechanisms that translate from other jurisdictions to Ontario. Current practice is to reference others experience where it relates, however if stakeholders have a specific need for select information they are encouraged to indicate this to the IESO

- An attendee noted that much of what is presented in the design principles is high level without much discussion around scope and boundary. The attendee questioned whether the 5MW threshold was the right level, whether the 5 minute dispatch in all hours was the right granularity and how much precision is gained with a 5km meteorological tower requirement. It was suggested that as the principles are further developed that rational economics be used when defining these boundaries.

The IESO responded that it recognizes there are tradeoffs when making these decisions and the intent of the principles was to establish a starting point. The principles do draw on experience from other jurisdictions and industry best practices, including recommendations from NERC's Integrating Variable Generation Task Force. The principles are also consistent with MW thresholds established in OPA contracts. The IESO has proposed what it believes is a set of logical principles but welcomes input from stakeholders on justifiable changes as additional details are developed.

- An attendee asked if it was the responsibility of Local Distribution Companies or embedded generators to provide relevant information for forecasting to the IESO.

The IESO responded that it expects the obligation to be on generators. The IESO will look to coordinate to the greatest extent practical with LDCs and where appropriate leverage existing communications. The IESO sees a mutually beneficial relationship where LDCs provide the IESO with relevant telemetry data and the IESO provides LDCs with generator forecasts.

- An attendee noted that MISO is currently undertaking a similar initiative as the IESO and is introducing new rules which are applicable only to generators that connect after a certain date. Considering the MISO approach and that the IESO's concern with renewable resources is heightened for 6,000MW of penetration and not the current 1,200MW, the attendee asked if the IESO would consider exempting legacy facilities from new rules, such as the 5 minute dispatch.

The attendee also asked whether existing generators classified as intermittent would have to re-register.

The IESO noted that the principles are valid for the existing penetration level of renewables and that a grandfathering clause is not being considered. The IESO expects the existing fleet to meet the principles within the limits of existing technology. If there are requirements that generators, given their currently installed technology are incapable of meeting, or where technology upgrades are infeasible, the IESO would consider an exemption. Exemptions would be limited to technology limitations and determined on a case by case basis. The details of how an intermittent resource would be reclassified as a dispatchable resource will have to be developed.

- An attendee asked the IESO if they expect to see strategic bidding from renewable resources in an attempt to take advantage of CMSC payments.

The IESO noted that different generators have different incentives to operate in the market but that the IESO does not anticipate this behaviour from the renewables fleet. It was also noted that the CMSC calculation is based on a minimum \$0/MW offer and so substantially negative offers will not contribute to CMSC payments. Generators could bid up to induce constrained-on CMSC, but their market revenue is capped at the \$135/MWh contract price, resulting in a limited window for strategic offers..

- An attendee commented that there is a great deal of sensitivity towards the proposed changes within the developer and lending communities. It was suggested that lenders are uncomfortable with the general uncertainty around the proposed changes within the context of the FIT contracts, most notably relating to dispatch.

The IESO recognizes that changes to the way renewables interact in the wholesale market will change the risk profile of these investments and may affect funding for developers. The purpose of the principles document and SE-91 is to provide the basis for the required rule changes that will provide the details necessary for any potential contract changes.

- In a follow up comment the attendee noted that the timeline for market rule changes may not fit with the timeline of developers looking to close financing. The uncertainty around the rule changes may delay the development of certain projects since lenders require a comfort level with the upcoming changes.

The OPA responded that it is aware of the risks that lenders must consider when making investment decisions but that the principles and subsequent stakeholdering may reduce risk by adding clarity and certainty around the interaction of market rule changes and contracts. The OPA reiterated its commitment to the stakeholder process which will provide the details that will help the industry move forward with investment decisions.

- An attendee asked the IESO for a timetable on the development of market rules.

The IESO responded that while an exact timetable is not yet available as design is in early stages of development, stakeholders should expect an expedited process as the deployment of renewable resources is not an IESO imposed timeline. The IESO expects to have a better sense of the proposed timing around market rule development once the design principles are finalized.

- An attendee noted that the current group of stakeholders is focused on renewable resources and asked how the IESO intended to keep secondary groups, such as lenders and other generators, abreast of the developments and how it intends to address their specific needs as they relate to the principles.

The IESO responded that it intends to keep all renewables related work together at this stage, though smaller breakout groups may be necessary in future to address specific details of different design principles. The IESO will encourage stakeholders to attend relevant sessions to have their needs heard and addressed. Some engagement of other associations can take place offline to help those stakeholders understand the impact of any changes on their business. The IESO encourages stakeholders to help it identify other relevant parties that have informational needs.

- An attendee commented that the OPA and IESO should reflect on how they intend to manage the relationship between rule changes and contract changes. The attendee suggested that multiple, separate rule changes will be a difficult task to manage. The attendee asked the IESO to consider how rule changes could be addressed as a whole, so that contract changes may also be addressed as a whole. A second attendee agreed and suggested that rule changes that take place in small clusters could create unnecessary hurdles for projects trying to be developed.

The IESO indicated they will take this into consideration in developing consultation timelines. The IESO thanked the attendees for their comments.