

Final Minutes of Meeting EDAC - Operations Design Working Group

Date held: July 8, 2009	Time held: 8:30 pm to 13:40 pm
Invited/Attended	Company Name
McLeod, Ron	Abitibi Bowater
Somerville, Stephen	Competitive Power Ventures Inc
Penn, Richard	Greenfield Energy Centre
Fok, Danny (IT)	Ontario Power Generation
Sikstrom, Matt	Ontario Power Generation
Peterson, David	Ontario Power Generation
Shah, Sushil	Ontario Power Generation
Cary, Rob	Sithe Global
Heaton, Randy	TransCanada Energy
Kuntz, Margaret	TransCanada Energy
Abid, Tiberiu	IESO
Berry, Scott	IESO
Boudreau, John	IESO
Doran, Pat	IESO
Lodyga, Martin	IESO
Pettit, Bill	IESO
Sandilands, Wade	IESO
Williams, Ralph	IESO

The meeting minutes when finalized will be posted on the IESO web site at:

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

Summary of Meeting Discussion

Item 1 Introduction and Review of Agenda

Al Miller welcomed the members to the EDAC Operations Design Working Group and invited the attendees to introduce themselves. This was followed by a review of the meeting agenda.

Item 2 Project Planning

The IESO discussed the next steps for both project planning and stakeholder involvement. This includes Technical Working Groups for:

- Technical (IT&I) Design
- User Interfaces

The next phase of the project will include:

- Ongoing development of the detailed design
- Solution Specifications
- Market Manuals & Procedures
- Market Trials
- Transition to Service

The previous Operations Design Stakeholder Sessions have been directional in nature and sought stakeholder advice on business requirements for the detailed design. No schedule allowance was planned for a formal market facing detailed design. The detailed design was to be developed as part of or following the solution exercise.

The IESO asked if there is a benefit to create a detailed design now understanding that the business requirements and design will change. In addition, participants were asked how they would use the Detailed Design now. A participant responded that they need to see the details to fully understand the design.

A participant reiterated the need to have a single reference document that is a living document and that shows the current detailed design. Participants stated that they are willing to live with a changing document including areas that are undefined or yet to be defined.

The IESO identified that the work on a detailed design can't start for at least 3 weeks. The IESO committed to provide a schedule for issuing a detailed design document and will define the scope of the document by the end of next week. The Detailed Design will be a comprehensive document for Operations (will not include Settlements) and will be a living document that is maintained throughout the life of the EDAC project.

Action: The IESO will provide a schedule for issuing a detailed design document and will define the scope of the document by the end of next week.

The IESO is developing solutions and will identify market facing technical interfaces in the fall. Stakeholdering of the solutions will involve IT technical staff and Operations staff.

The current schedule is built on a rolling wave and the schedule for 2010-2011 is based on historical experience. The plan to move forward will be developed with consideration of Market participant requirements for Market Trials, Readiness, Ability Testing. Participants will be requested in future stakeholder sessions to provide the IESO with feedback on any reset periods, change freezes etc.

Item 3 Outstanding Action Items

The IESO reviewed the outstanding action items from previous Operations Design Working Group Meetings. The status of the action items is shown in the action item table of these minutes.

Item 4 PCG Eligible Resources

The IESO provided a review of Production Cost Guarantee eligibility and the costs that are considered in the PCG calculation.

A participant asked if the PCG includes costs associated with the ramp down from MLP. The IESO responded that the PCG is based on the DA schedule which does not recognize the ramp down from MLP.

Item 5 Pseudo Unit Model

The IESO provided an overview of the PSU model. The presentation identified that pseudo units offers must not span the PSU regions.

A participant asked how the pseudo unit regions are defined. The IESO responded that there is one model for all hours and the regions are defined in MWs based on the sharing data provided.

Item 6 Enrolment/Registration Requirements

The IESO discussed the registration data that is required for EDAC.

A participant asked how minimum hydraulic time lag will be used. The IESO explained that it is used to define the set of ELR resources that are eligible to re-submit offers during the EDAC ELR submission window.

A participant asked how the ST MLP_{n on 1} value will be used and whether it will affect the PCG. The IESO explained that the PCG is based on the schedule and the MLP will be used to schedule the correct ST MLP based on the configuration. A participant asked what happens if a ST MLP is not achieved in one or more hours and it results in not meeting the ST MGBRT. The IESO

explained that in this case the ST will not be scheduled and the optimization engine will schedule other resources economically.

The IESO identified that the MLP and MGBRT Limit definitions may be changed to provide a better reference for registering these values. A participant pointed out that any predefined threshold would be arbitrary and the IESO agreed that it is difficult to find a solution that works for all resource types. The IESO is considering a limit based on a percentage of the registered value (e.g. 125% of registered MLP).

A participant asked if the MGBRT range for validation should be between 1 & 24 instead of 0 & 24 as stated on slide #24. The IESO explained that a not so quick start generator may not have a MGBRT all the time and may wish to return the value to zero at some point.

The IESO pointed out that the DET definition will be amended to state that for fossil generation units the minimum time would reflect a hot start.

A participant asked how the DET would apply to a generator that can start in 15 minutes and load to 90 minutes within 30 minutes. The IESO responded that the DET is used to determine quick start status and to determine PCG eligibility.

A participant asked if the determination of quick start based on $DET < 5$ minutes is more restrictive than the market rule definition of a quick start generation unit. The IESO stated that the rule requires the resource provides electrical energy output within 5 minutes.

Action: The IESO agreed to review the DET definition for quick start facilities for consistency with the market rules.

The definition of Eligible Energy Limited Resource (EELR) was discussed and a participant asked if it is realistic to preclude cascade resources where there is a hydroelectric dependency and the resources are not operated by the same RMP. The Participant expressed a concern that hydroelectric resources that are not allowed to resubmit offers during EDAC will just change their offers after EDAC. Other participants stated that is not desirable but they are not concerned with it because of the materiality. The IESO agreed to take the advice under consideration.

Item 7 EDAC Data Submission

The IESO discussed EDAC data submission requirements including Daily Generator Data and Dispatch Data. A hard copy of the data submission details from Slide #42 was given to stakeholders for reference.

A participant questioned the accuracy of the unit/update frequency information on the spreadsheet. The IESO agreed to review the spreadsheet for accuracy.

The IESO highlighted that Minimum Generation Block Down Time and Maximum Number of Starts per Day are no longer going to be required as registered values. These values will be submitted through Daily Generator Data (DGD) only.

The IESO also pointed out that there is no standing data for DGD because the last submitted value is the data that will be used in future days until it is overwritten.

The IESO also pointed out that they are considering holding updates to DGD that exceed the MLP and/or MGBRT Limit for approval. Where a submission is held for approval, the IESO will determine the cause of the change before approving it. This will allow the IESO to understand why the change is required and to identify changes that are not for technical reasons to Compliance for their review.

The IESO discussed the option of allowing quick start generators to submit daily generator data. A participant expressed a concern with the possible schedule outcomes that could occur as a result and stated that the IESO needs to review any such decision from a broader perspective. The IESO agreed to consider the advice of the stakeholders in any design decision.

At previous stakeholder meetings, the IESO identified that there would be validation between DGD values. These requirements have been removed to simplify validation.

The IESO pointed out that the IESO will calculate a number of PSU values based on DGD submissions and registered values. PSU participants will be provided with a spreadsheet to allow them to replicate the calculated values for their combined cycle plant configuration.

The IESO identified that they are considering validation for PSU offers to ensure that they do not span regions. The IESO explained that validation may result in a requirement to freeze DGD in advance of 10:00 and to validate offers at that time. It would then allow time to resubmit offers that failed validation before 10:00. The other option is to accept these offers with the understanding that it may result in an undesirable schedule.

The IESO is still discussing what to do if a combined cycle facility that is not a PSU gets an unrealistic schedule (ST scheduled with no CT). A market participant asked if there is still an option of physical aggregation. The IESO pointed out that physical aggregation is still under discussion in other stakeholder forums.

Item 8 Dispatch Data

The IESO reviewed the use of dispatch data in EDAC. The dispatch data is the same as today with the addition of Speed no Load and Start up Costs.

A Participant asked what the terms “accepted” and “approved” mean as they relate to dispatch data. The IESO responded that dispatch data is accepted when it passes validation in the IESO tools. It may at that point be automatically approved for use or, if it is accepted in a restricted window that requires operator approval, approved by operator action.

The IESO discussed the two options under consideration for MLP price cap validation. The first option is to establish a price cap prior to the start of EDAC. This requires that the MLP does not change after the start of EDAC and may require physical unit offers (associated with pseudo units) to submit their offers for validation by 10:00. The second option under consideration is to perform a clawback of any self induced CMSC resulting from MLP price increases after the fact.

A participant suggested a third option of changing the offers for MLP to \$-2000 similar to what is done by NYISO.

Item 9 Optimization

The IESO provided an overview of the EDAC optimization process. This included the EDAC timeline notifications and re-run criteria.

The IESO was asked to consider advancing the SSR to earlier than 9:00 as there are typically significant changes between 5:30 and 9:00. This was discussed during the development of the Market Design and at that time participants agreed that 9:00 was acceptable and that earlier publication would result in less accuracy. The IESO agreed to take the suggestion under consideration.

Linked wheels – A participant asked if linked wheels will be scheduled based on economics and if internal resources will be dispatched to schedule linked wheels.

Action: The IESO will review the slides on linked wheels and provide a detailed description of how they are treated in EDAC.

Editorial Note:

The EDAC Calculation Engine schedules the import and export legs of a linked wheel based on overall economics using submitted bids and offers. The import offer and export bid are individually submitted and the wheel is scheduled if the difference between the export bid and import offer prices exceeds the difference between the import and export zone shadow prices.

In Real-Time, Linked Wheels are treated the same in EDAC as they are today in Real time. As per Market Manual 4.2, Market Participants are required to bid the export portion at +MMCP and the import portion between -\$50 and –MMCP. The import portion must equal the export portion, and the WI (Wheel Import) and WX (Wheel eXport) formatting convention must be used in the NERC E-tag IDs. The Calculation Engine will assess the bid and offer economically and because of the above requirements for pricing they will seldom, if ever, not be economical. Internal resources will be dispatched around the established wheel to respect any limit violations. Linked wheels will be limited in amount by intertie capability. Note: Day ahead bids/offers for the import and export associated with a linked wheel do not need to follow the real time bid/offer rules defined above.

A participant asked how long it will take for an EDAC run. The IESO responded that the run times shown are based on the assumption that the calculation engine can run and the IESO can complete validation and publication processes within one hour. This will be finalized in testing and the EDAC timeline is subject to change until then.

A participant asked if the IESO will define a time after which EDAC will not be run even if the EDAC rerun criteria is met. The IESO responded that the EDAC results will always be available by 15:00. The current assumption is that EDAC would not be run after 14:00 in order to meet the 15:00 completion deadline.

Item 10 Initialization at Midnight

The IESO identified that MGBRT and Net Interchange Scheduling Limit (NISL) will be satisfied across midnight. To do this information from the current days predispach schedule and contract manager are used.

A participant asked if the IESO would respect NISL in hour 1 of EDAC. The IESO explained that respecting NISL in hour 1 will be optional. The IESO will have the capability to respect NISL in hour 1 or to relax the constraint. NISL will initially be respected in EDAC and it will be monitored to determine if it should be relaxed.

A participant asked why the initial hours of operation uses both predispach and contract manager to determine the contiguous hours of operation. The IESO explained that the initial hours of operation will be based on the minimum hours in either predispach or contract manager.

Action: IESO will revise slide #95 to reflect that initial hours of operation for MGBRT is the minimum of predispach or contract manager.

Editorial Note: The slide presentation has been updated and is available on the IESO portal.

Item 8 EDAC Data Submission During EDAC

The IESO presented the data submission requirements and timeline during EDAC (10:00 to 14:00).

Item 9 Reporting and Notification

The IESO provided information on the notifications and reports that are issued for EDAC.

A participant asked how the notifications will be issued. The IESO responded that EDAC notifications will be issued through the SSR.

A participant asked if the IESO would provide a valid bid report for dispatch data and will it include the new components of SNL & SUC? The IESO responded that the IESO is specifying, in business requirements, that the Valid Bid report be extended to include SNL & SUC. The participant asked if there will be a new report that provides the Daily Generator Data that is used in EDAC.

Action: The IESO agreed to investigate if a report could be provided for DGD.

Editorial Note: The IESO has defined a report for Daily Generator Data that will provide participants with their DGD that was used in EDAC.

The Reports that the IESO has defined as the EDAC Schedule of Record are:

- Day Ahead Scheduled Energy –private report
- Day Ahead Check/Source ADE –private report

The IESO asked participants what reports they consider the EDAC Schedule of Record. Participants responded that the Adequacy report is valuable however the two reports specified are sufficient to consider EDAC successful.

Item 10 Integration into Real Time

The IESO discussed how dispatch data and daily generator data is handled in the transition from EDAC to predispach.

A participant asked if physical unit MLP offer prices can be increased after EDAC. The IESO explained that if the IESO implements a price cap, the physical unit MLP price offers will be capped based on the pseudo unit MLP price. The MLP price cap can be established by translating the pseudo unit offers based on known sharing information.

A participant asked how ADE is established for physical units. The IESO answered that ADE is established based on the pseudo unit offers. A simpler validation option for both MLP price and

ADE would be to validate the physical unit offers against PSU offers at 10:00. This will require that Physical unit offers are submitted at 10:00. The IESO explained that the MLP validation rules are still under discussion. A decision on the preferred option will be conveyed when it is made.

Item 11 Decommitment and Withdrawal

The IESO described the decommitment and withdrawal processes as currently defined.

Item 12 Wrap-up

The IESO asked participants if there is a benefit to this type of bring-it-all together presentation for settlements. The participants agreed that this would be beneficial. The Settlements bring it all together session is scheduled for August 12, 2009.

Action Item Summary				
#	Date	Action	Status	Comments
1	April 16, 2009	The IESO will check to see if the Portal User Guide covers subscribing and if not will revise it appropriately. A link to the portal user guide will be provided to the DWG.	Closed	The Portal User Guide was updated and posted on April 30
2	April 16, 2009	The IESO will determine the process to handle identified Real Time issues and identify the process for tracking and assigning these issues. The process will be discussed at the next DWG meeting. Al Miller will identify how long it will take to determine if an issue is in scope of EDAC or not as part of this process.	Closed	The IESO plan for addressing real-time issues was presented to the Operations Design Working Group on May 7, 2009

3	April 16, 2009	The IESO will determine if the requirement for Daily Generator Data to default to the last submitted value has a significant impact on the EDAC project (cost or schedule).	Closed	The IESO has determined that using the last submitted value as the default value for Daily Generator Data will not have a significant impact on the EDAC project. This will be adopted in the detailed design and slides from the April 16th ODWG meeting were updated accordingly.
4	April 16, 2009	IESO will provide clarification on how changes to MLP are handled in real time (for non EDAC scheduled hours) and how this relates to the new rules on self induced CMSC. (What happens in the example where the MLP post EDAC > registered MLP)	Closed	The IESO presented the process for managing changes to MLP in real-time at the May 7, 2009 ODWG meeting. Supplemental slides were posted to provide additional detail. The proposed Market Rules on self-induced CMSC have been identified as warranting consideration by the Technical Panel, pending an effort to revise the proposed rules to incorporate generator concerns. The IESO cannot definitely say what the impact will be on real-time CMSC relating to elevated Minimum Loading Points at this time.
5	April 16, 2009	IESO will review the DET validation rule ($0 \leq$ (Minimum	Closed	This validation rule will be removed. Revised slide

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		Run Time –MGBRT) <= DET) to determine if it works for minimum MRT situations.		deck posted on portal on April 20, 2009.
6		The IESO will post the presentation on ramping consideration for the ODWG which describes the rationale behind the 30% ramping MW assumption.	Closed	Slide deck from November 26, 2008 TSG meeting posted on portal on April 20, 2009.
7	April 16, 2009	The IESO will update the startup cost slide to change the number format to \$/start and not \$/hr.	Closed	Revised slide deck posted on portal April 20, 2009.
8	April 16, 2009	The IESO will provide further detail regarding how ramp rates will be utilized in the EDAC calculation engine to participants in writing. At that time, participants will be requested to identify any issues with this approach.	Closed	Additional detail provided as an editorial note in the meeting minutes.
9	April 16, 2009	DWG members to identify any issues with using the first hour ramp rates for all hours of EDAC before the next DWG Meeting.	Closed	No issues raised by ODWG Participants before or during the May 7, 2009 ODWG meeting.
10	April 16, 2009	IESO will update slide #14 of the EDAC data submission slide deck to reflect that “accepted” offers will be used by both EDAC and pre-dispatch.	Closed	Revised slide deck posted on April 20, 2009.
11	April 16, 2009	The definition of “eligible ELR resource” will be developed and provided to the group.	Closed	The IESO presented the definition of Eligible Energy Limited Resources at the May 7, 2009 ODWG meeting. Supplemental slides were posted to provide additional detail.

12	May 7, 2009	A generator asked that the IESO provide information on where to address any comments related to the pending market rule amendment for self-induced CMSC.	Closed	Information provided as an editorial note in the meeting minutes
13	May 7, 2009	An ODWG member requested that updates to EDAC documents, clearly identify where the document has changed from the previous version (i.e. redlined, etc).	Closed	Information provided as an editorial note in the meeting minutes
14	May 7, 2009	The IESO will review whether the clarification of the 4th bullet has been addressed in the April 16th power point presentation. If not clarification and improvements to the statement will be made.	Closed	Clarification provided as an editorial note in the meeting minutes
15	May 7, 2009	The IESO is to assess the concern expressed that guarantees (both DACP/EDAC and OPA), and the impact of restricting MLP pricing will cause downward pressure on price.	Closed	Clarification provided as an editorial note in the meeting minutes as discussed at the May 7th Settlements DWG meeting. Table did not get updated.
16	May 7, 2009	The IESO will investigate providing a report that would identify when EDAC results are final, and can be used as the official EDAC results. Example: A report that is populated with final results at a specific time each day.	Closed	The IESO will identify the EDAC Schedule of Record and archive these reports consistent with existing practices.
17	May 7, 2009	The IESO will investigate ongoing developments that are underway in wind forecasting, under SE #57 and ensure that EDAC is in line with current efforts.	Closed	Information provided as an editorial note in the meeting minutes.

18	May 7, 2009	The IESO will investigate publishing a report listing the hourly quantity of offers revised between EDAC runs in addition to ELRs.	Closed	Changes to offers in the EDAC timeframe, may be obtained from the differences in the hourly offer totals between adjoining versions of the adequacy report.
19	May 7, 2009	The IESO will investigate publishing a report listing all resources that qualify for EELR status and are eligible for EDAC re-submission, subject to confidentiality concerns.	Closed	Item closed after review at the May 27th Operations DWG meeting.
20	May 7, 2009	The IESO will provide a description of the impacts of MLP changes during the EDAC to real-time transition. Contents will include the submission and approval process, duration for which the data is applicable, as well as the treatment by settlements and compliance.	Closed	Information provided as an editorial note in the meeting minutes.
21	May 27, 2009	The IESO will look at the best method for creating detailed design documentation as part of the "Bring it All Together" session.	Closed	Information provided as an editorial note in the meeting minutes.
22	May 27, 2009	Participants asked that the IESO provide a clear EDAC timeline for submitting pseudo and physical unit offers.	Closed	The EDAC timeline was presented at the July 8th Operational Design Working Group meeting.
23	May 27, 2009	The IESO to revise the fourth slide of the presentation (Outside the Mandatory Window). Revise the bullet "MLP price revisions to be validated" to "MLP price revisions to be validated only on units with	Closed	Slide presentation revised on the IESO portal (June 11).

24	May 27, 2009	The IESO will provide information on the calculation of the pseudo unit MLP price cap, once a method is formulated.	Open	The method of implementing a pseudo unit MLP price cap was presented at the July 8th Operational Design Working Group meeting.
25	May 27, 2009	The IESO to investigate whether any confidentiality issues exist with reporting the import/export offered, and scheduled amounts by intertie.	Open	The IESO confirmed that import and export bids/offers can be reported in aggregate by intertie zone.
26	May 27, 2009	Participants to define the requirements for intermediate data from individual passes of each EDAC run. The request should also include details of what data to include, the formatting and timelines associated with its publishing.	Open	
27	July 8, 2009	The IESO will provide a schedule for issuing a detailed design document and define the scope of the document by the end of next week.	Open	
28	July 8, 2009	The IESO agreed to review the DET definition for quick start facilities for consistency with the market rules.	Open	
29	July 8, 2009	The IESO agreed to review the slides on linked wheels and to provide a detailed description of how they are treated in EDAC.	Closed	Information provided as an editorial note in the meeting minutes.
30	July 8, 2009	IESO will revise slide #95 to reflect that initial hours of operation for MGBRT is the minimum of predispach or contract manager.	Closed	Information provided as an editorial note in the meeting minutes.
31	July 8, 2009	The IESO agreed to investigate if a report could be provided for DGD.	Closed	Information provided as an editorial note in the

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				meeting minutes.
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