

Non-Emitting Resource Subcommittee

January 22nd, 2018

Minutes of Meeting

Date held: 01/22/2018	Time held: 9:00 – 16:00	Location held: Holiday Inn, Toronto Pearson
Invited/Attended	Company Name	Attendance Status (A)ttended; (R)egrets; (S)ubstitute
Ameresco	Fonger, Jim	A
AMP Energy	Luukkonen, Paul	A
APPrO	Butters, David	A
Bruce Power	Dalzell, Pat	A
CanSIA	Johnston, Wes	A
CanWEA	Giannetta, Brandy	A
Capstone Infrastructure Corporation	Kausel, Andrea	A
Compass Energy Consulting	MacDougall, Jim	A
Electra Utilites	Carr, Daniel	Webex
EnerNOC, Inc.	Griffiths, Sarah	A
ENGIE Canada Inc.	Langelaan, Deborah	A
Enwave Energy Corporation	Guerfala, Nasreddine	A
Goreway	Coulbeck, Rob	Webex
Grasshopper Solar	Aziz, Syed Shaheer	A
H2O Power	Somerville, Stephen	A
Hydrostor Inc.	Jensen, Stewart	A
HQEM	Belanger, Frederic	Webex
IESO Consultant	Atkinson, Giles	A
ITC	Motley, Doug	Webex
Kelvin TE	Slater, Joe	A
Enbridge	Macrobbie, Ian	Webex
Mitsubishi canada ltd.	Masotti, Mark	A
Next Era Energy Canada	Puck, Jennifer	Webex
Northland Power Inc.	Chislett, Michelle	A
Northland Power Inc.	Wright, John	Webex
Ontario Power Generation	Wizniak, Lynn	A
Ontario Waterpower Association	Norris, Paul	A
Peak Power	Amaral, Utilia	A

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Public

Non Emitting Resource Subcommittee

Committee Chair: Tom Chapman

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Power Advisory LLC	Cumming, Alison	A
Power Advisory LLC	Simmons, Sarah	A
Powerful Solutions	Inman, Peter	A
Rankin Renewable Power	Bekhuis, Jordan	A
Rayonier Advanced Materials	Laflamme, Serge	A
Sussex Strategy	Hiltz, Bonnie	A
Touzel Business Services Inc.	Touzel, Bill	A
TransCanada	Mikkelsen, John	A
TransCanada	Ford, Nathan	A
University of Windsor	Carriveau, Rupp	A
University of Windsor	Miller, Lindsay	A
WPD Canada	Long, Jesse	A
IESO	Chapman, Tom	A
IESO	Ellard, Barbara	A
IESO	El-Samahy, Ismael	A
IESO	Fox, Conrad	A
IESO	Gojmerac, Mark	A
IESO	Grbavac, Jason	A
IESO	Hartland, Mark	A
IESO	Louw, Brennan	A
IESO	Matsugu, Darren	A
IESO	Movchovitch, Emanuel	A
IESO	Nollert, Beverly	Webex
IESO	Ng, Hok	A
IESO	Scratch, Jonathan	A
Scribe: Mark Hartland - Please report any corrections, additions or deletions e-mail to scribe.		

All meeting material is available on the IESO web site at: <http://www.ieso.ca/en/sector-participants/market-renewal/non-emitting-resources-subcommittee>

Introduction

Jason Grbavac welcomed stakeholders to the third NERSC meeting. Stakeholders were thanked for feedback that they have provided thus far and were reminded of the IESO's commitment to be open, review, and respond to this feedback.

Following the initial welcome, Tom Chapman, provided an update on a few items relevant to this group, namely the NERSC Technical Conference, TOR, and the NER RFI.

On the spring Technical Conference, stakeholders were informed that more information will be shared at the next meeting but were encouraged to indicate to the IESO whether they would be interested in presenting. The hope for the conference is that there will be representatives and presentations from a cross section of the sector as well as personnel from the IESO.

The Terms of Reference (TOR) is close to being finalised and incorporates feedback provided by stakeholders. In addition to the changes that have already been made, sections 4.3.6 and 4.3.7 will be amended so as to remove any wording that singles out any particular resource type.

Finally, Tom Chapman provided a brief update on the progress of the NER RFI, and informed that stakeholder comments will be responded to by the IESO in the coming weeks. Further to this, information on the draft NER RFI will be conveyed at the February NERSC meeting.

Item 1 – Stakeholder presentation

Rupp Carriveau from the University of Windsor introduced the work of the Climate Driven Energy Economy Network 2040 (CDEE2040) project. The objective of this network is to prepare, create, and advance the non-emitting sector by looking into the capabilities of newer technologies and their ability to assist with grid services.

Subcommittee Questions and Comments, *with the response in italics:*

The IESO asked whether the university is looking for feedback on the project and/or potential partners.

The CDEE2040 is currently recruiting experts within the sector and is interested to receive input from a wide variety of non-emitting resources represented at the subcommittee.

Item 2 – Background to Market Renewal

The subcommittee Chair, Tom Chapman, provided a brief re-cap of both the Market Renewal framework and the IESO's engagement process. Stakeholders were reminded that we are moving to an unbundled services framework that aims to put in place the products needed for a system with increased decentralisation, decarbonisation, and digitisation.

Update on the Single Schedule Market (SSM)

Jonathan Scratch, Design Lead for the SSM work-stream presented the concept of the SSM to NERSC stakeholders, as well as highlighting the design decisions that may impact non-emitting resources. Stakeholders were informed that a SSM will better align prices with dispatch instructions, removing the need for out of market payments (CMSC), and paving the way for the introduction of a day-ahead market.

NERSC participants interested in providing input into the SSM design elements were invited to attend the upcoming SSM stakeholder engagements on January 30th and March 29th.

Member Questions and Comments, with the IESO's response in italics:

A stakeholder asked how energy will be priced for non-market participants on the supplier side.

No decision within the SSM stakeholder engagements has been made on this as of yet.

A stakeholder asked how the IESO calculates the cost of congestion.

The IESO answered that in instances where a transmission line is at capacity, the marginal cost offer provided by resources at that node will set the price of congestion.

A stakeholder asked why the GTA zonal prices from the 2016 example are higher than the rest of Southern Ontario.

The IESO explained that despite the load being concentrated in the GTA, there is adequate transmission capacity to meet that load. The zonal prices are reflective of supply, demand, and congestion.

A stakeholder asked whether it would be possible to break out the portion of Global Adjustment on a zonal basis.

The IESO responded that it would not be fair to expect communities with resources that meet provincial needs e.g. Bruce, Darlington, to bear those fixed costs alone.

A stakeholder commented that shadow prices in areas such as the North West are often below the minimum market clearing price of \$-2000. The stakeholder went on to ask how generators impacted by negative prices will be treated given the elimination of CMSC.

The IESO explained that shadow prices from the constrained run of the current two schedule system are used for dispatch purposes but not for settlement. Moving towards a single schedule market, the marginal price will be reflective of the marginal price at a given location. Stakeholders interested in providing input into this design element were encouraged to participate in the upcoming SSM stakeholder engagements.

Update on the Day-ahead Market (DAM)

Mark Gojmerac, design lead for the DAM work-stream presented NERSC participants with an overview of the DAM and highlighted areas of particular interest to non-emitting resources. Mr. Gojmerac began by explaining how the current DACP engine runs twice during a day producing schedules which are not financially binding, and as such, do not provide full certainty for market participants. Migrating to a DAM will provide resources with increased

certainty as they are able to lock into financially binding prices for supply and load of energy a day before it is required.

NERSC participants interested in providing input into the DAM design elements were invited to attend the upcoming DAM stakeholder engagements on January 31st and March 28th.

Member Questions and Comments, with the IESO's response in italics:

A stakeholder asked if the IESO forecasts take into account wind resources at a physical location, or whether or not these are converted into a forecast of energy.

The IESO responded that the services of AWS Truepower are used to provide inputs for wind/solar forecasts, which subsequently are converted into a forecast of energy.

Update on the Incremental Capacity Auction (ICA)

Ismael El-Samahy, design lead for the ICA, informed NERSC stakeholders that Market Renewal will see the introduction of a competitive market based auction, which is looking to procure a single product; capacity. Adopting an annual incremental capacity auction, where all resource types are expected to compete, provides flexibility in terms of the changing needs of the system.

NERSC participants interested in providing input into the ICA design elements are invited to attend upcoming ICA stakeholder engagements on January 24th, March 7th and April 17th.

Member Questions and Comments, with the IESO's response in italics:

A stakeholder asked if the length of the forward periods would vary from auction to auction.

The IESO's response was that the first capacity auction would have a one year forward period due to the limited capacity need and to introduce the auction concept consistent with the Demand Response Auction; however subsequent capacity auctions will have longer term forward periods e.g. 3-4 years.

A stakeholder commented that existing resources such as hydro require regulation changes that could take equally as long as building a new resource. In light of this the stakeholder went on to ask if the information from the RFI is expected to feed into the requirements for the ICA in 2021.

The IESO clarified that the objective of the ICA is to meet Ontario's capacity needs at lowest cost, whereas the RFI will provide information to better inform the design of broader market.

Item 3 - Update on Enabling System Flexibility

Hok Ng of the IESO discussed the increasing need for system flexibility, particularly within the 5-minute timeframe, due to the variability of wind and solar resources. As an interim solution to the flexibility need, the IESO has proposed to allow flexible resources to provide Operating Reserves (OR), which can be scheduled ahead of time for fluctuations to demand. Over the coming months the IESO plans to reach out to stakeholders who could potentially offer flexibility into the OR market.

Member Questions and Comments, with the IESO's response in italics:

A stakeholder asked what the IESO's process will be for reaching out to NER stakeholders. *The IESO commented that the Enabling System Flexibility engagement webinar in December 2017 was the first step for reaching out to stakeholders and collecting initial feedback on the OR for flexibility proposal. Further information will be provided in the coming months on a more formal engagement to take this forward.*

A stakeholder asked if the IESO observes wind output decreasing by e.g. 1,000 MW within the hour of dispatch and whether this is on a facility to facility basis. *The IESO confirmed it is seeing significant variation in intra hour fluctuation in wind output both at the facility and aggregate level.*

A stakeholder asked if the IESO could provide the data set used to calculate the forecast uncertainty of wind resources at various time intervals, as shown on slide 58 of the presentation. *In reply to this question the IESO informed that aggregated wind forecast data is public and available on the IESO website.*

Item 4 - Update on Existing Contracts

Emanuel Movchovich of the IESO echoed previous comments that Market Renewal is focused on increasing market efficiency, not extracting value out of existing contracts. That being said, certain changes to the market design e.g. the replacement of the HOEP will have an impact on existing contracts. Feedback received from stakeholders to date has focused around the idea of establishing smaller resource specific groups to discuss contract changes, as well as the opportunity for individual meetings.

Item 5 – Market Design for a Clean Grid

Kathleen Spees, Principal at the Brattle Group presented a conceptual view of a technology neutral, unbundled, competitive market and spoke to the types of services various clean resources could provide to the grid. While a broad range of services were identified, the focus on the session was around the opportunities for non-emitting resources to participate in Energy, Flexibility, and Capacity.

The Brattle Group emphasised the importance of strong Energy market price signals in order for resources to operate effectively and assist the system when additional supply is required. Further to this, Kathleen emphasised that even in a system with decreasing energy prices there will remain periods with high price spikes, and the price signal remains important.

With regards to the flexibility requirement, Kathleen provided an overview of the range of solutions other jurisdictions have taken to improve flexibility. These largely fall into three categories; (i) providing the same product but with increased quantities, such as increasing OR,

(ii) new products, such as forward looking ramping products, and (iii) unbundled products, such as regulation up and down products which can increase the ability of variable resources to compete to provide regulation.

Member Questions and Comments, with response in italics:

A stakeholder asked the Brattle Group if they could provide an example of non-dispatchable resources and how they could respond to price changes

Brattle replied that Demand Response is an example of one such resource. They elaborated that large loads tracking the wholesale price may look to cut back production as market prices increase.

A stakeholder commented that there are challenges around the uncertainty of price spikes, as these could last anywhere from 1-2 intervals to 1-2 hours.

A stakeholder commented that it would be useful at some point for the Brattle Group to provide an overview of the work New York is doing on integrating carbon pricing into the wholesale markets.

A stakeholder thanked the Brattle Group for their presentation and commented that it was beneficial for the ongoing work of the subcommittee.

Item 6 – Closing Remarks

In closing, Tom Chapman informed stakeholders that the focus of the next session will be on barriers to participation in the Ontario context. Additionally, preliminary information on the scope of the modelling exercise will be communicated to stakeholders at the next meeting.

Member Questions and Comments, with response in italics:

In response to the closing remarks, a stakeholder expressed interest in the upcoming modelling exercise and hoped that as part of this work the NERSC could illustrate the effect different levels of carbon pricing could have on the generation mix.