IESO Stakeholder Advisory Committee Meeting Notes – February 11, 2020

Advisory Committee Members
Mr. Brian Bentz (representing Distributors and Transmitters)
Mr. Nicolas Bossé (representing Energy Related Businesses and Services)
Mr. David Butters (representing Generators)
Ms. Brandy Giannetta (representing Generators)
Ms. Malini Giridhar (representing Energy Related Businesses and Services)
Mr. Jim Hogan (representing Distributors and Transmitters)
Ms. Rachel Ingram (representing Energy Related Businesses and Services)
Mr. Frank Kallonen (representing Distributors and Transmitters)
Mr. Paul Norris (representing Generators)
Mr. Mark Passi (representing Consumers, via teleconference)
Mr. Mark Schembri (representing Consumers)
Mr. Hari Suthan (representing Energy Related Businesses and Services, via teleconference)
Ms. Annette Verschuren (representing Energy Related Businesses and Services)
Mr. Terry Young (representing IESO)

Regrets
Mr. Pat Chilton (representing Ontario Communities)
Ms. Judy Dezell (representing Ontario Communities)
Ms. Julie Girvan (representing Consumers)
Mr. Bruno Jesus (representing Transmitters and Distributors)
Mr. James Scongack (representing Generators)

IESO Board Members
Mr. Michael Bernstein
Mr. Simon Chapelle
Ms. Cynthia Chaplin
Ms. Margaret Kelch
Ms. Patricia Koval
Mr. Joe Oliver

Presentations
Mr. Declan Doyle
Mr. Chuck Farmer
Mr. Dave Short
Ms. Katherine Sparkes
Mr. Terry Young

Meeting materials can be accessed online at www.ieso.ca/sac

Please report any comments by email to engagement@ieso.ca

Agenda Item 1. Welcome Remarks

Mr. Brian Bentz welcomed all to the first SAC meeting of 2020. He introduced the IESO board members in attendance and welcomed a new SAC member, Ms. Annette Verschuren. Ms. Verschuren is the Chair and CEO of NRStor Inc. and a former CEO of Home Depot Canada.

Agenda Item 2. IESO Business Update Items – Memoranda and Discussion
Mr. Terry Young

Mr. Young introduced members of the IESO executive leadership team in attendance and provided the following business updates.

The IESO is delivering the energy efficiency Interim Framework that will run to the end of 2020. To date, 30% of the 1.4 TWh of the energy savings target and 32% of the 189 MW demand target have been committed or installed.

The IESO has produced an enhanced LED Grow Light Incentive to greenhouses in the Windsor-Essex and Chatham-Kent regions.

A pilot project is under way to explore auction-based mechanisms to procure energy efficiency. A high-level design of the pilot is posted for stakeholder comment and the pilot auction will be held in September 2020.

Five Regional Electricity Networks were launched late last year for stakeholder and community engagement in an effort to encourage continuous dialogue. Two thousand people have signed up. Forums have taken place in Sault Ste. Marie and Thunder Bay. A Toronto forum will be held February 12 followed by forums in Belleville on March 11 and Cambridge on March 24.

Regional planning engagement activities are under way in seven regions: Windsor-Essex, GTA North, Greater Bruce/Huron, East Lake Superior, Kitchener-Waterloo-Cambridge-Guelph, Ottawa, and GTA West.

A new energy efficiency program is being launched in four remote First Nation communities that will make them energy efficient prior to connecting them to the Watay Power line.

The IESO will engage with Indigenous stakeholders to review the current energy support programs.

The Resource Adequacy Engagement that was scheduled to begin in January has been deferred. This is due to a number of ongoing discussions that have the potential to impact the outcome of this engagement including the contract review under way, the potential extension of the Pickering Nuclear Generating Station, and the release of the Annual Planning Outlook (APO).

A report from the Market Surveillance Panel identified an error made with respect to modeling

the impacts of demand response. From May 2016 to April 2017 the model overstated demand from some distribution-connected customers, which led to an increase in the wholesale electricity price. The report and IESO response are posted.

A decision has been received from the Ontario Energy Board (OEB) on the capacity auction market rule amendments. The OEB concluded that the amendments approved by the IESO board last August do not unjustly discriminate against or favour market participants. The application was dismissed and the stay lifted. The ruling is posted on the OEB website.

The Energy Payments for Economic Activation of Demand Response Resources Engagement will continue with a meeting scheduled for February 13 to consider non-energy payment options.

The IESO received a government directive to retain a third party to review existing energy generation contracts. Charles River Associates has been retained through a competitive procurement and will report to the minister by the end of February. The minister also requested reviews to address concerns about electricity bills, customer service, global adjustment estimation processes, and peak demand data publication processes. These reviews are due at the end of February.

Comments

Mr. Mark Schembri asked if funding for conservation would continue after 2020. Mr. Young said no decisions have made, but conversations are ongoing.

Mr. Schembri noted that Global Adjustment (GA) estimates were mentioned in the Industrial Conservation Initiative (ICI) review. He asked if this is moving toward aligning LDC first estimates with the IESO. Mr. Young said the IESO is looking at first, second, and final estimates and consulting stakeholders. Mr. Schembri said Loblaws did not participate in the ICI review and noted that confusion results when the first estimate is low and the month settles high, and in the next month there is a cost hit from both sides.

Mr. Jim Hogan said work on the Regional LED Grow Light Incentive in southwestern Ontario is appreciated. He asked what results are anticipated in the six-year Conservation Framework. Mr. Young said the IESO no longer verifies results from the previous framework as the Interim Framework is now being delivered with associated targets and budgets.

Mr. Bentz asked if there was coordination of what third party service providers are doing in the LDC service territories with respect to delivery of the retrofit program. There is a need for visibility to assist with integrated regional planning efforts. Mr. Young noted the comment, adding that engagement activity has begun.

Mr. Mark Passi suggested it would be more appropriate to refer to the ICI review as a broader industrial rate review. He asked if it would be more accurate to address constructs for increased competition. Mr. Young said he was referring to issues flagged during the ICI conducted by the

minister in 2019. Following the ICI review, the IESO was asked to look at four specific areas.

Mr. David Butters asked if the IESO is prepared to encourage the ministry to make public the results of the contract review. He asked if there have been any lessons learned with respect to the market renewal amendment appeal. Mr. Young said he would share lessons learned at a later date.

Ms. Brandy Giannetta echoed Mr. Butters' wish to see the contract review made public. Wind energy generators look forward to the nomination process and expanded membership within the Technical Panel (TP). The energy efficiency auction pilot is on their radar with their segment of the sector eager to enhance its offerings. Mr. Young recognized the desire for transparency regarding the contract review.

Mr. Butters added that the contract review results have could affect the APO and resource planning.

Mr. Paul Norris said the Ontario Waterpower Association did an analysis of small hydro potential in remote First Nation communities and heard that these communities want to talk about energy in a holistic manner. Mr. Norris asked if there is an opportunity to have a collective conversation around building capacity. Mr. Young agreed that a collective conversation is needed. The IESO is funding community energy champions to increase capacity within these communities to better address their energy needs.

Ms. Verschuren said NRStor has worked in Inuvik, NWT to develop legislation and development agreements. The company is building a micro grid involving wind, solar, and battery technologies with full support from the community. Many projects are sought in diesel-reliant communities. It is an interesting long-term process that requires a holistic approach.

Comment from the Floor

Mr. Colin Anderson, AMPCO, echoed Mr. Passi's concern about the need to expand the conversation toward an industrial rate consultation. A disproportionate amount of time has been spent talking about the ICI.

Agenda Item 3. Planning Update
Mr. Chuck Farmer

Mr. Farmer provided an overview of the recently released APO and provided information about the upcoming Technical Planning Conference and Reliability Review engagement.

The Technical Planning Conference scheduled for February 19 will provide the first stage of engagement. The IESO welcomes SAC input with regards to the APO, its inputs and how to move forward. The document will inform resource acquisition decisions. The IESO will bring forward a more integrated and extensive bulk planning process that will inform both resource

and transmission planning.

The Resource Adequacy Outlook shows what would happen when resources renew or do not renew. In the next five years, two or three large generator contracts will come to an end. After 2026 a greater number of contracts will expire. The period from 2023 to 2025 has many moving parts, including the proposed extension of the Pickering generating station beyond its retirement date, providing an additional 900 MW in 2023. As well, four units that would have ended in 2024 would end in 2025 which will push the enduring capacity need out to 2026. Nuclear refurbishment schedules are being updated. It will also be possible in 2023 to access 500 MW from Quebec that can beused in any year before 2030. Mr. Farmer outlined his hope for interim updates to be provided as more information becomes available.

The next APO will be released in Q4 this year. The reliability review will examine the way we establish our reserve margins to ensure reliable supply as the supply mix changes, and to determine whether the right assumptions, processes, and interpretations are being made. These considerations will be introduced at the Technical Planning Conference and will be subject to further stakeholder engagement.

Comments

Mr. Norris asked where the resource adequacy engagement appears on the adequacy outlook chart, noting that Mr. Young said it would be reinitiated. He noted he would like to see it on the chart. Mr. Young said it is forthcoming.

Ms. Giannetta suggested that discussions about resource adequacy, the reliability review, and the development of the next APO proceed in tandem. Reliability should be the first priority. Locational considerations included in the next APO are appreciated. Mr. Farmer said the resource adequacy consultation is about how to provide tools to the resources and having enough resources, as opposed to how to acquire and commit resources.

Ms. Verschuren said the resource adequacy outlook could be predetermined by energy storage capacity. Storage can provide multiple services in one unit to maximize resources and have a significant impact. Mr. Farmer said the need for all services should be better reflected in the outlook.

Mr. Nicolas Bossé expanded on Ms. Verschuren's comment. In the United States there is a *pro forma* for each market to do economic studies. He suggested that for the next APO the IESO think about granting this opportunity to stakeholders, then decide which ideas to study. Mr. Farmer noted the comment.

Mr. Frank Kallonen noted there is capacity constraint on the flow-south interface from Hanmer to Essa Township. There has been significant investment in the past decade, particularly in the Abitibi Canyon area. He asked if there are significant amounts of stranded resources behind the constraint. Mr. Farmer said this would be reflected with better zonal analysis. There is less

requirement for resources north of the constraint, which is somewhat oversupplied, but you still run into a constraint as you come to Toronto and getting into the major load centre, he said. The IESO gets a lot of questions about this from developers.

Mr. Hogan said energy efficiency is key in the new APO. The role of LDCs needs to be defined and early stakeholdering will improve benefits. It is hoped that new conservation programs will appear in 2021 without a gap.

Mr. Butters asked for clarification as to the timing of the resource adequacy. He noted that the choices made around resource adequacy would affect capital availability and cost. Mr. Farmer said the IESO should provide clear signals.

Mr. Hari Suthan asked if the zonal adequacy assessment would be done in parallel with regional planning assessments. Mr. Farmer said the IESO looks at where demand is growing, end of life, and where the need is for global capacity requirement. There is a need east of Toronto due to the nature of the constraints. The capacity auction will target zones, and it is part of the planning process to put things where they are needed. Mr. Suthan asked about grid-level demand forecasting. Mr. Farmer said a long-term outlook for grid-level demand would be done.

Ms. Rachel Ingram asked if uncleared demand response that is available but did not clear is reflected on the outlook chart. Mr. Farmer said the top part of the chart shows the continuation of existing resources. The current demand response level is assumed.

Ms. Malini Giridhar noted that the direct use of natural gas is both reliable and cost effective, and that two-thirds of Ontarians use it for heating. She asked what the impact on resource adequacy would be if electric heating were converted to natural gas. Mr. Farmer said the electric heating portion is limited so it would lower the resource requirement. Water heating would be a different discussion. A net benefit might not be evident, as there would be less use of existing resources. Ms. Giridhar said it would be helpful if the regional planning process could reflect this. Mr. Farmer said planners look at what is feasible and what is occurring in the market.

Mr. Butters said the staging of processes is important. The tools chosen to ensure adequacy will affect the burden borne by consumers. It comes down to capital availability and cost. Market participants need a view of what is coming. The importance of this will continue to come up in discussion. Mr. Farmer noted the comment.

Mr. Schembri asked what assets other than Pickering will be coming offline. Mr. Farmer said Lennox will reach the end of its contract in 2023. Mr. Schembri asked if the 500 MW agreement with Quebec would be available for on-peak load. Mr. Farmer said it is only available in the summer. Quebec needs a one-year notice. Mr. Schembri asked how many hours in summer there would be critical and high peaks. Mr. Farmer said load forecast uncertainty considers extreme weather and difficult conditions. Relatively few hours are unserved. Forecast duration curves show how the load shapes up every hour of the year. Unserved energy would appear less than 5% of the time.

Ms. Giannetta expressed support for emissions profiling. For long-term APO engagement she wants to see the market renewal principles of competition, implementation, stability, and transparency used.

Mr. Bentz said resource adequacy is a function of fleet capacity and end-use load forecast by class. However, looking downstream on the low voltage side, there is no visibility on underlying drivers, such as electric vehicle penetration. There can be diversification upstream and congestion downstream, in which case there may be no issues for transmission but a resource adequacy problem downstream. To the extent that AMI and 5G networks can be used to automate and manage in real time, it requires the whole grid to develop solutions.

Distributed energy resource (DER) penetration will also have a big impact. Industrial customers are increasingly concerned that they cannot hedge the price forward. They have systems behind the meter that are microprocessor based and we have a bulk system, said Mr. Bentz. To the extent that this can be factored into the planning process and look at things like local electricity markets that can complement the markets upstream, integrated solutions will be needed. High-level bulk capacity is a good start, but much integration is needed downstream to optimize resources everywhere. It is important to know where those resources are and have markets and technology to support them. Mr. Farmer noted the comment, adding that the IESO seeks information from LDCs to help with forecasting. The APO plans at the wholesale grid level, not at a distribution level.

Ms. Verschuren agreed on the need for integration and added that it is important to do the right thing for customers. Mr. Farmer noted the comment.

Mr. Butters said some assets are more flexible than others and everyone needs to talk to each other. For example, the federal output based pricing system contract amendment proposal from the contracts group would force generators to offer below-variable costs, encourage them to limit operating capability, and potentially increase greenhouse gas emissions. The IESO should take a holistic approach to solving such operational realities. Mr. Young noted the comment.

Comment from the Floor

Mr. Jack Gibbons, Ontario Clean Air Alliance, asked for clarification of Ontario Power Generation's proposed schedule for the Pickering shutdown of six operating units, and what levels of approval will be required. Mr. Farmer said approval from the Canadian Nuclear Safety Commission would be needed to take the units past 2024, and OEB approval would likely be needed to recover costs. The schedule is reflected in the IESO outlook chart. The current proposal is for two units to shut down at the end of 2024 and four units at the end of 2025.

Agenda Item 4. Markets Update

Energy Detailed Design

Mr. Declan Doyle

The high-level design and business case for the energy stream for market renewal have been posted. There are two concurrent phases: technical sessions where stakeholder advice is received on specific topics, and engagement on the detailed design documents that will continue throughout the year. Nine engagement sessions have been held since September. Once complete, implementation activities will begin and are expected to go live in March 2023.

The technical sessions have been very successful. As the project has transitioned from high level to detailed design, the IESO is aiming to demonstrate where things will move forward or where there might be no significant changes from the current market. Work on hydroelectric dispatch data for market power mitigation is breaking new ground. The IESO publishes draft concepts two weeks in advance for stakeholder review, and questions are received in advance of the sessions. Additional technical sessions have been added to refine concepts. A session on negative pricing will be held this week as well as a session on pseudo units on February 27.

Release dates for the detailed design document have shifted, and the first batch of documents has been released. Feedback deadlines are in February and early March and a final call for feedback will be made at the end of the process. The goal is to finalize the design documents this fall and to start implementation activities. The next batch of detailed design documents will be released at the end of March.

June Capacity Auction
Mr. David Short

Mr. Short said demand response (DR) rules are in effect for the December 2019 capacity auction. The IESO is moving toward a more competitive auction that will include demand response providers, dispatchable generators with expired contracts, system-backed imports from Quebec and Manitoba, and storage resources without existing capacity contracts.

A versioning approach to the rules and manuals is being introduced, consistent with the approach used in the United States. The original December 2019 market rules were an overly complex mix of terms focused on the DR auction and the transitional capacity auction (TCA). Running an auction before a previous auction commitment period is completed creates overlapping obligations. For the June 2020 auction there will be a freeze on the applicable rules and manuals for that particular auction. In future, obligations associated with the capacity auction will carry through to the end of the commitment period for the auction period previously completed.

A full set of market rules has been published for the June auction and is posted for comment. They are the same rules that went through the stakeholder process, and are expected to go live in late April. Timelines are posted on the capacity website, including steps to prepare for the June 2020 auction.

The March 2021 auction has some new design features, including market power mitigation

mechanisms, qualification of capacity, and updated reference price and maximum auction clearing price. There are updates to the zonal maximums-minimums and the grouping of zones. Engagement on the March 2021 design and proposed market rules and manuals will continue. By deferring the proposed December 2020 auction until March 2021, we are extending the pre-auction period to allow for more process time for participants. A draft design document will be available before the next meeting to prepare a full set of rules for the upcoming TP review.

Comments

Mr. Norris commended the work done on the detailed design engagement and appreciated the presentation of the IESO's early thinking on topics. Mr. Norris encouraged the IESO to publish stakeholder submissions, so that everyone may have an opportunity to see what other people have to say in writing.

Ms. Giannetta echoed Mr. Norris, adding that assessment of impacts to contracts coming from the market rule amendments and energy stream will prove important.

Comment from the Floor

Ms. Sarah Simmons, Power Advisory, asked if there has been engagement with the OEB with respect to impacts on distribution customers resulting from the MRP. Specifically, she asked whether key questions had been addressed: what rates will be applied to customers; how the OEB will incorporate them; and what impacts applied prices and timeframes will have on distributed generation supply on the grid. Mr. Doyle said discussions with the OEB are important but are in their relative infancy at the moment. He said he would take the comment back to the IESO.

Agenda Item 5. Innovation Update
Energy Storage Design Project – Interim Design Decisions
Ms. Katherine Sparkes

Ms. Sparkes reviewed progress to date on the Energy Storage Design Project and outlined the interim design decisions that will be thoroughly reviewed by the Energy Storage Advisory Group at a meeting on February 18. The IESO is looking to the SAC to identify and explain areas likely to be of greatest interest.

The purpose of the Energy Storage Design Project is to clarify how energy storage resources can participate in today's markets, and to provide a vision of how they will participate in the long term. The focus is on transmission and distribution-connected storage in wholesale markets. The integration of behind-the-meter resources is being addressed through other forums such as Grid-LDC Interoperability initiatives and the York Region Non-Wires Alternative Demonstration Project.

The Energy Storage Design Project builds on work done with the Energy Storage Advisory

Group to identify and address barriers. The four key deliverables are the design document, market rules and manuals, an inventory of IESO tools and processes, and a schedule for market updates.

Stakeholder feedback has addressed the scope and timing of storage integration into the new markets. A detailed design document for the interim measures sets out the proposal for how energy storage resources will register and participate in existing markets. The Energy Storage Advisory Group will meet next week to discuss the interim measures and gather feedback.

Comments

Ms. Verschuren noted that information gained from the 12 operating storage facilities will help to accelerate the work. Of greatest interest is reducing cost to ratepayers. It is important to move faster to see the benefits of behind-the-meter generation following the current bulk level design project. A holistic approach to the supply chain is imperative.

Ms. Giannetta echoed Ms. Verschuren's comment that storage is cost effective at the grid level and behind the meter. She encouraged the IESO to continue to prioritize hybrid projects, especially renewable generation coupled with storage.

Ms. Giridhar asked how storage projects would advance power-to-gas projects. Mr. Brennan Louw, IESO, said the focus is on storage resources that are withdrawing energy from the bulk system and reinjecting it back into the bulk system. Ms. Sparkes said lessons have been learned from a project under way in Markham with regards to power-to-gas supporting reliability. Ms. Giridhar said the Markham project does not feed electricity back by design, but it potentially could.

Mr. Suthan agreed that energy storage projects will create savings for ratepayers and noted it would be helpful to see value propositions identified and quantified. The York Region Non-Wires Alternative Demonstration Project will help to quantify value at the distribution, wholesale, and consumer levels.

Mr. Bentz said the Energy Design Storage Project is a great initiative. Alectra has had some experience with utility grade and behind-the-meter storage. For example, the company partnered with the Korea Electric Power Corporation approximately eight years ago at a municipal substation that allowed for arbitrage, resiliency, and a long, radial feed from Hydro One. The price point is coming down. The key is getting intelligence into the software system in order to take market-based information and optimize the resource downstream.

Agenda Item 6. Stakeholder Engagement Update
Mr. Terry Young

Mr. Young provided results of the IESO 2019 stakeholder survey and provided an overview of the new Stakeholder Engagement Framework.

Approximately 400 stakeholders were consulted in the telephone survey conducted by Northstar Research. Eighty-four percent indicated that their experience with engagement met or exceeded expectations. The survey results are posted. The IESO will strive to improve communication and the treatment of stakeholder input on an ongoing basis.

The new engagement framework will address stakeholder needs for scheduling consistency, stakeholder fatigue, and ensuring a holistic understanding of how the multiple engagements fit together. Designated engagement days are coming in Q2 this year in an effort to centralize engagements in a one- or two-days of meetings that will encompass all engagement discussions.

Comments

Mr. Butters said the IESO has come a long way, but there is room for improvement. For example, stakeholders want to see fewer *fait accompli*-style engagements, such as the transmission rates clearing option for which there was significant stakeholder concern. As well, in future it will be important to avoid unjust discrimination in the market rule amendments. A better process for resolving disputes might be considered. Mr. Young said it is important to be clear from the outset on the subject of every new engagement. Decisions that have already been made should be explained to avoid unnecessary discussion.

Ms. Giannetta said the new engagement framework enables outcomes-focused consultations. For example, future market rule amendments must avoid bringing conflicts to the OEB while enabling the TP to consider amendments in an integrated process. Mr. Young said the IESO will endeavour to provide a clear schedule.

Mr. Suthan said the IESO engagement strategy demonstrates that the IESO is listening and noted that third-party validation helps to best serve the market.

Agenda Item 7. Other Business

There was no other business.

Agenda Item 8. Adjourn

Mr. Bentz adjourned the meeting.