

## Meeting Notes

### Integrated Resource Planning Technical Working Group (EB-2021-0246)

#### Working Group Meeting #3

Meeting Date: March 22, 2022      Time: 2:00 p.m. - 4:00 p.m.  
Location: MS Teams

#### Attendees

IRPTWG Members	Role
Michael Parkes	OEB staff representative (Working Group chair)
Stephanie Cheng	OEB staff representative
Chris Ripley	Enbridge Gas representative
Amrit Kuner	Enbridge Gas representative
Amber Crawford, Association of Municipalities of Ontario	Non-utility member
Jay Shepherd, Shepherd Rubenstein Professional Corporation	Non-utility member
John Dikeos, ICF Consulting Canada Inc.	Non-utility member
Tammy Kuiken, DNV	Non-utility member
Cameron Leitch, EnWave Energy Corporation	Non-utility member
Chris Neme, Energy Futures Group	Non-utility member
Dwayne Quinn, DR Quinn & Associates Ltd.	Non-utility member
Kenneth Poon, EPCOR Natural Gas LP	Observer
Steven Norrie, Independent Electricity System Operator	Observer

Additional Attendees	Role
Sue Mills	Enbridge Gas guest
Rich Szymanski	Enbridge Gas guest

#### Regrets

IRPTWG Members	Role
N/A	

#### Purpose

These notes summarize the information discussed during the working group (WG) meeting on each of the key points presented in the published materials.

These notes are for the Working Group purposes only and do not represent the view of the OEB

## Meeting Agenda

1. Preliminary matters (OEB staff)
2. Further discussion of annual IRP report and IRP pilots (Enbridge, 1 hour)
3. Considerations Regarding Cost-Effectiveness Guidance for IRP (Chris Neme, 1 hour)

### 1. Preliminary Matters

Item Description	Discussion Comments/Outcome	Action Items
Meeting #2 Notes OEB staff asked if there were any comments on meeting #2 notes.	The following change was flagged by WG members to be updated by OEB staff: <ul style="list-style-type: none"> <li>• Reference to November 2023 for filing of Enbridge's rebasing application should be updated to November 2022</li> </ul> Once the above change has been made to Meeting #2 Notes, they are accepted by WG members.	OEB staff to make date change noted by WG members. OEB staff will then post meeting #2 notes on IRP webpage ( <i>completed</i> ).
General Remarks from WG members on various matters	<p><b>IRPA Template</b></p> <ul style="list-style-type: none"> <li>• Per meeting #2 notes, Enbridge's annual IRP Report update referenced an IRPA template that was to be shared with WG members by meeting #3. However, this is still outstanding.</li> <li>• Enbridge acknowledges that the "IRPA template" has yet to be shared and clarifies that this template would be used in the IRP annual report, highlighting the best available information on IRPAs like geotargeted DSM, demand response, gas source heat pumps, etc. Enbridge is still working on this template and will share when it becomes available, likely as part of draft annual IRP report.</li> <li>• WG member sought clarification as to whether/why supply-side IRPAs were excluded. Enbridge and OEB staff clarified that OEB's decision specifically required Enbridge to include best available information on demand-side alternatives in annual IRP report. This does not prevent Enbridge from considering supply-side and/or a combination of both demand- and supply-side alternatives, in IRP pilots or IRP activities more generally.</li> </ul> <p><b>Posterity IRP Analysis</b></p> <ul style="list-style-type: none"> <li>• WG member asked if Enbridge can share the model and assumptions for the "IRP</li> </ul>	<p>Enbridge to report back to the WG on the following items (first two by meeting #4, third ASAP):</p> <ul style="list-style-type: none"> <li>• IRPA templates (if available)</li> <li>• Update on what information from Posterity IRP Analysis can be shared with WG members</li> <li>• Update on whether responses to WG Questions on Enbridge Gas Activities can be put on the IRP webpage (<i>completed – responses included as appendix to meeting notes</i>)</li> </ul>



	<p>Analysis” of targeted DSM (conducted by Posterity Group) filed in the St. Laurent proceeding (EB-2020-0093) with the WG. Enbridge will look into the confidentiality of its contents and report back to the working group as to what can be shared.</p> <p><b>WG Questions on Enbridge Gas Activities</b></p> <ul style="list-style-type: none"><li>• Subsequent to meeting #2, WG member posed questions via e-mail to Enbridge on its activities, and responses were provided by Enbridge. Another WG member requested that these responses be put on the public record through the IRP webpage. Enbridge will review the responses and advise as to whether they are OK with this.</li></ul>	
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Item Description	Discussion Comments/Outcome	Action Items
<p><b>IRPA Pilots</b> Enbridge provided an update on their projected timelines and approach in evaluating potential pilots</p>	<p><b>Projected Timelines</b></p> <ul style="list-style-type: none"> <li>• Enbridge plans to ramp up their pilot related activities starting the end of March 2022. Enbridge representatives are starting to look at all potential pilots.</li> <li>• Enbridge plans to return to WG meeting #4 in April 2022 with a more detailed plan/ discussion of the role and purpose/ objectives of each IRP alternative and Enbridge's proposed alternatives for the pilots.</li> <li>• Enbridge plans to return to WG meeting #5 in May 2022 with a list of proposals for specific potential pilot projects (including system need addressed, and community(ies) impacted), for WG consideration, based on the discussion and decisions from the April meeting. <ul style="list-style-type: none"> <li>○ WG member requested Enbridge provide a decision matrix allowing members to see how Enbridge came up with the list of potential pilots.</li> <li>○ WG member requested Enbridge present multiple alternatives to the group, with Enbridge outlining what are its favourite proposals, and why. Enbridge indicated that it would bring forward about 10 potential projects for consideration, with two preferred options.</li> </ul> </li> </ul> <p><b>Thoughts/Concerns on Potential IRPAs:</b> In addition to discussion previously on this topic (meeting #2), members provided further comments on IRPA technologies:</p> <ul style="list-style-type: none"> <li>• Geotargeted IRPA, potentially in combination with a supply side alternative. For this alternative, pilot could focus on a single community where appropriate metering technology is already in place. Enbridge expressed that they are also very interested in this option.</li> <li>• Demand response (DR)/interruptible rates – various WG members believe that this IRPA should not be eliminated from consideration, despite survey results conducted by Enbridge suggesting that interest among industrial customers in participating in interruptible</li> </ul>	<p>Enbridge will return with more detailed materials on pilots for WG consideration at the April and May meetings.</p>

	<p>rates (or in paying higher costs due to other customers being on interruptible rates/demand response) is limited.</p> <p>Additional discussion comments on DR:</p> <ul style="list-style-type: none"> <li>○ Customers may be willing to pay to support these solutions if it avoids future infrastructure (pipe) costs.</li> <li>○ Gas DR underway in other jurisdictions like NY (National Grid, Con Ed).</li> <li>○ “Enhanced” interruptible rates can reward customers for curtailing demand/ load without risk of shutoff, potentially enhancing pool of participants; however, the fact that the curtailed load is not as dependable needs to be considered.</li> <li>○ Demand response IRPAs can come in different forms like shifting loads, adjusting thermostats, and utilizing water heaters, in addition to “standard” interruptible rates</li> </ul> <p>WG member expressed concerns that natural gas heat pumps are poor candidates as the technology has yet to be proven. Enbridge indicated that it was unlikely that gas heat pumps would be part of the pilots.</p> <p>Thoughts on IRPA Evaluation and Selection Approach:</p> <ul style="list-style-type: none"> <li>● WG member suggested that Enbridge’s proposed approach starts with potential IRPA solutions instead of identifying problems/ constraints and that this approach should be flipped - Enbridge should start with a project that is part of their existing plan and consider what IRPAs can delay or eliminate the project entirely.</li> <li>● WG member noted that system needs are not identical, and solutions will vary in magnitude, range and applicability based on constraints, so it is important to identify these first. Enbridge should consider things like what is the customer mix? What drives and contributes to system peak?</li> <li>● WG members also noted that constraints vary</li> </ul>	
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	<p>between industrial vs. residential customers so solving problems for each customer class should be approached differently</p> <ul style="list-style-type: none"><li>• Enbridge clarified that their pilots will take place within the context of Enbridge's system plan and will address real and not hypothetical constraints/ needs. Enbridge indicated that they are considering IRPAs to help with long-term growth. They are interested in a long-term pilot implementing a geotargeted program in an area, monitoring and ensuring that the alternative can reduce peak needs (potentially also involving supply-side bridging components). Enbridge wants to buy more lead time with the execution of pilots to defer infrastructure projects while gaining insight on realized demand reduction.</li></ul> <p>Some WG members expressed additional thoughts on how to view, evaluate and maximize pilot learnings:</p> <ul style="list-style-type: none"><li>• WG member suggested that pilots are an opportunity to learn about the effectiveness of IRPAs. It allows one to think about the issues and what potential solutions there are in deferring infrastructure build.</li><li>• WG member describes a pilot as a stress test on how to handle certain scenarios. It is an opportunity to assume extreme scenarios like the banning of pipes to see what alternatives there are and the benefits the pilot can bring instead of selecting options you know have worked in the past</li></ul>	
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### 3. Considerations Regarding Cost-Effectiveness Guidance for IRP

Enbridge requested for additional Enbridge staff (Rich Szymanski and Sue Mills) to join the call during this segment of WG meeting #3. No objections from WG members.

Item Description	Discussion Comments/Outcome	Action Items
<p>DCF+ Test Enhancements WG member Chris Neme shared his views on potential refinements to Enbridge's IRP cost effectiveness test by leveraging concepts from <a href="#">NSPM</a> while remaining consistent with OEB IRP decision. Other WG members provided their input on his suggestions.</p>	<p>Enbridge's Proposed DCF+ Test</p> <p>Some key proposals by Chris included the following (see slides for more details):</p> <ul style="list-style-type: none"> <li>• Simplifying to a two-stage test. The first stage would address the rate impact of IRPA/facility solutions, and the second stage would address broader customer/societal impacts. Results of these two stages would be presented individually for the OEB's consideration, but not added together. Chris indicated that this would align with the intent of the IRP decision, but be more logically consistent.</li> <li>• Comparing an IRPA to the default facility solution, rather than comparing both IRPAs and facility solutions to a "do nothing" alternative.</li> <li>• Using a societal discount rate for the second stage of the test, instead of weighted average cost of capital (WACC), and potentially for stage 1 as well. Chris indicated that WACC reflects the time value of money for shareholders, not society, and that the net present value of alternatives is heavily impacted by the choice of discount rate.</li> <li>• Using best forecasted estimates of key inputs, including carbon price</li> <li>• Addressing the impact of IRPAs on gas supply price, and the hedge value of IRPAs</li> <li>• Additional proposals regarding specific costs/benefits relevant to each stage</li> </ul> <p>WG members generally agreed that Chris had made some useful suggestions that warranted further consideration by Enbridge and the WG.</p> <p>Additional points raised in discussion:</p> <ul style="list-style-type: none"> <li>• How much latitude the WG has to deviate from the IRP decision. Chris indicated that</li> </ul>	<ul style="list-style-type: none"> <li>• Enbridge to consider DCF+ input provided to date. Discussion to resume at future meeting (likely May)</li> </ul>

	<p>proposals had been drafted to be consistent with the intent of the IRP decision.</p> <ul style="list-style-type: none"> <li>• Whether by not considering sunk costs there is a bias towards existing infrastructure. WG members generally agreed that evaluation needed to be marginal and forward-looking, and should include opportunity costs and avoided costs.</li> <li>• Whether the “do nothing” alternative is a preferable starting point if the system need is driven by new customers.</li> <li>• A suggestion that the DCF+ test should include qualitative consideration of benefits and costs that cannot be quantified</li> <li>• Whether there is value in trying to evaluate impact of an IRPA on gas supply costs and, if so, how to do this (i.e. linear impact or step change). Enbridge and a WG member indicated that they do not think this factor will make a big enough impact to be worthwhile to include.</li> </ul> <p>Enbridge indicated that it expected to present some DCF+ refinements it was considering (as part of its pilot work) at the May meeting. OEB staff suggested resuming discussion on DCF+ at that meeting. Enbridge indicated that it may request a few minutes at the April or May meetings to also ask any clarifying questions regarding Chris's suggestions.</p>	
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### List of Action Items

Action Item	Assignment/ Owner	Due Date
Update meeting #2 notes with changes flagged by WG members	OEB staff	Completed
Verify approval to publicly post responses to WG member's questions on Enbridge activities	OEB staff & Enbridge	Completed
Circulate summary of meeting #3 outcomes	OEB staff	Completed

Draft Confidentiality Agreement for WG members	OEB staff	As soon as possible
Provide draft annual IRP report for WG consideration (including update on IRPA template, and update on what information from Posterity IRP Analysis can be shared)	Enbridge Gas	Likely April 2022
Return with more detailed materials on pilots for WG consideration	Enbridge Gas	Meetings #4 and 5 (April & May 2022)
Further discuss guidance on DCF+ test	All WG members	Future working group meeting(s). Delayed until May 2022.
Establish agenda for meeting #4	OEB staff (with input from Enbridge Gas)	Prior to meeting #4

**Appendix: Responses to WG Questions on Enbridge Gas Activities**  
(responses by Enbridge Gas (and IESO for question 7) provided in red)

**Questions about Utility Operations or Typical Practice**

1. When is the Enbridge system peak? Is it weather driven? **Enbridge's system peak is in the winter and it is weather driven. However, there are some isolated system peaks during the fall due to grain dryers and asphalt plants.**
2. How is the forecasting Design Day defined? **Enbridge's Design Day is a set of criteria used to determine peak requirements which are:**
  - **Design temperature condition, based on historical temperatures experienced within a given region**
  - **Firm contract demands On; and**
  - **Interruptible customer demands Off.**
3. I believe Enbridge has said it currently accounts for DSM in its utility forecasts. Does the current forecast derate DSM as a resource? If so, how much? **Enbridge includes historical DSM savings in the demand forecast. The forecast does not include forecast savings from upcoming DSM programs.**
4. Are there currently any supply constraints on the Enbridge distribution system? **Yes, there are distribution system constraints. The Asset Management Plan identifies those constraints including the required facilities to mitigate the constraint.**
5. How many Leave to Construct applications does Enbridge typically file in a calendar year? If the answer is less than one, then how frequently does Enbridge typically file an application? **The number of LTC applications varies year to year but will be in the range of 2-25 per year.**
6. At which locations does Enbridge measure volumetric flow in its system? How frequent are those measurements? How many customers are typically downstream of each measurement? **The volumetric flow is measured at numerous points across Enbridge's system.**
7. Have Ontario electricity customers ever had the option to participate in a thermostat-controlled demand response program? **This question is best answered by the IESO.**  
*{Additional information provided by IESO representative on WG}: The IESO has in the past been involved in the administration of the peaksaver and peaksaverPLUS residential demand response program. Funding of new device installations under this program was ceased in 2014 and the program was subsequently wound down. Technically, residential DR has been able to participate in the IESO's Demand Response Auction (and now Capacity Auction) since 2017. Initially there was some limited participation, including by LDCs that leveraged devices previously installed through peaksaver and peaksaverPLUS. I am not aware of any residential demand response participation the auctions for at least the last two years. While this may be anecdotal, discussions between the IESO and DR aggregators provide some insight into the lack of participation, including challenges related to Measurement & Verification, and challenges related to satisfying an auction requirement for the DR capability to cover a six-month summer commitment period (as the savings potential is primarily air conditioning load, there's isn't generally much AC load to curtail in May or October, for example). Attached please find the two last peaksaverPLUS evaluation reports. Inside you should find various metrics for penetration rates, cost-effectiveness, etc. Please note that while these reports are not confidential, I only ask that they don't be shared publicly in any formal manner unless they can be remediated to be in compliance with AODA requirements (NB: referenced evaluation reports are not included in notes due to AODA requirements). We've also managed a few other LDC-led smart thermostat pilots and there should be some evaluation reports for these initiatives on the IESO website, if you are interested.*
8. In the last few years, traditional natural gas infrastructure projects have become more uncertain, even those that have been regulatorily approved. The developer may be denied environmental permits, for example, and may abandon the project. Has Ontario seen any similar reliability risk related to natural gas infrastructure? **No.**

Questions specific to the IRP D&R or process:

9. The Decision and Order says that electrification is not an available IRPA under the current Framework. Are electric projects allowed if they are not attached to the electric grid? Or are all gas-to-power projects unavailable for the first generation? **No. Per the OEB's IRP Decision Enbridge is not pursuing electric IRPAs. Specifically, the OEB stated at p. 35: "Enbridge Gas also proposed non-gas IRPAs, specifically electricity-based alternatives. The OEB has concluded that as part of this first-generation IRP Framework, it is not appropriate to provide funding to Enbridge Gas for electricity IRPAs. This may be an element of IRP that will evolve as energy planning evolves, and as experience is gained with the IRP Framework."**
10. In the Decision and Order, Enbridge was encouraged to work with IESO or the LDCs on electricity IRPAs. If they do so, are they able to recover the cost of their time? **Enbridge does not know the answer to this question.**
11. Must all IRP solutions be connected to the gas distribution grid? Or can independent DERs be considered? (e.g. microgrids for gas) **The IRP alternatives approved by the OEB are connected to Enbridge's natural gas system. We can have further discussion regarding "microgrids for natural gas" at the March meeting.**
12. What is the pre-installation timeline for the IRP process? Is it initiated with an Enbridge IRP plan? How long does the OEB have to review that plan? What are the next steps? Etc. **Please see the evidence filed by Enbridge in the IRP proceeding for a detailed discussion of the IRPA process. At a high level the process is:**
  1. Enbridge will identify needs on its system which include the facilities required to meet the need.
  2. Enbridge will then use the OEB-approved screening criteria to screen projects.
  3. For the projects passing screening Enbridge will review IRP alternatives.
  4. Enbridge will review the technical feasibility of the IRPAs ability to meet the identified need.
  5. For those IRPAs that meet the identified need Enbridge will evaluate the economic value of the IRPAs using the DCF+ test and compare it to the facility solution.
  6. Per the OEB's Decision, the lowest cost option will be implemented.
  7. Enbridge will file an IRPA Plan application with the OEB for approval. The timing of the application is dependent upon timing of the system need and the type of IRPA.
  8. The OEB has established timelines for its regulatory proceedings.