ONTARIO ENERGY BOARD

Next Steps on Economic Evaluation of IRP Alternatives

IRP Working Group Meeting #2

February 15, 2022

Ontario

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Purpose

- Summarize key findings of IRP decision regarding economic evaluation of IRP alternatives
- Describe preliminary staff view of key considerations in implementing IRP decision regarding Enhanced Discounted Cash Flow-plus (DCF+) test and supporting guidance
- Discuss approach and role of Working Group in developing guidance on Enhanced DCF+ test

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IRP Decision on Economic Evaluation

- In IRP decision (section 8.3, pp. 49-57), OEB determined that a three-phase discounted cash flow-plus (DCF+) test will be the economic evaluation used in IRP Framework to compare costs and benefits of different approaches to meeting system need (IRP Plan(s) and facility alternatives):
  - Selected over alternative cost-benefit tests such as Total Resource Cost test
  - Economic test results are informative, but not binding on Enbridge in choice of preferred solution

Phases of DCF+ Test

- Results of all three phases would be presented separately but also shown summed together:
  - **Phase 1**: Costs and benefits from utility perspective (predictor of rate impact)
  - **Phase 2**: Incremental economic benefits and costs incurred by customers (outside of distribution/transmission rates, but inclusive of other bill impacts such as commodity costs)
  - **Phase 3**: Incremental societal benefits and costs
- Decision notes that Enbridge "should be given some discretion in selecting an alternative to meet a system need that does not have the highest score on phase 1 of the DCF+ test, as there may be considerations or factors that are important in phases 2 or 3, or are difficult to quantify."

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DCF+ Test Costs and Benefits

Table 2: Discounted Cash Flow-Plus Test Costs and Benefits

Benefit/Cost	Phase 1	Phase 2	Phase 3
Benefits			
Incremental Revenues	x		
Avoided Utility Infrastructure Costs [2]	x		
Avoided Customer Infrastructure Costs [3]		x	
Avoided Utility Commodity/Fuel Costs [4]	x		
Avoided Customer Commodity/Fuel Costs [5]		x	
Avoided Operations & Maintenance	x		
Avoided Greenhouse Gas Emissions		x	
Other External Non-Energy Benefits			x
Costs			
Incremental Capital Expenditure [1]	x		
Incremental Operations & Maintenance [1]	x		
Incremental Taxes	x		
Incremental Utility Commodity/Fuel Costs [4]	x		
Incremental Customer Commodity/Fuel Costs [5]		x	
Incremental Greenhouse Gas Emissions		x	
Incremental Customer Costs		x	
Other External Non-Energy Costs			x

Notes:
(1) Capital and Operations & Maintenance is inclusive of program administrative costs
(2) Avoided or reduced infrastructure capital costs of the utility (e.g., smaller diameter pipe)
(3) Avoided or reduced infrastructure capital costs of the customer (e.g., reduced Contribution in Aid of Construction)
(4) Avoided or incremental fuel costs of the utility (e.g., compressor fuel and unaccounted for gas)
(5) Avoided or incremental fuel costs of the customer (e.g., lower/higher natural gas use, lower/higher electricity use)

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OEB Direction on Implementation

- Enbridge Gas accepted a recommendation from expert (Guidehouse) that parties should work to complete a Benefit Cost Analysis Handbook or supplemental guide that would be used as a key input for economic evaluations.
- OEB decision indicates that:
  - "The DCF+ test could be improved to better identify and define the costs and benefits of Facility Alternatives and IRPAs, and clarify how these costs and benefits should be considered within the DCF+ test."
    - Could include expanding the inputs to recognize increasing carbon costs, the risk that a constraint remains unresolved, and impact on gas supply costs.
  - Enbridge Gas is directed to study improvements and file an enhanced DCF+ test for approval as part of the first non-pilot IRP Plan.
    - "Enbridge Gas is encouraged to consult with the IRP Technical Working Group and to use the IRP pilot projects as a testing ground for an enhanced DCF+ test."
    - "In particular, the OEB considers it appropriate for the Technical Working Group to consider how different carbon pricing scenarios should be used in the DCF+ calculation."

Existing OEB Foundations for DCF+ Test

- *Filing Guidelines on the Economic Tests for Transmission Pipeline Applications* (findings from E.B.O. 134)
  - Very high-level guidance on three-stage test, has been refined by Enbridge in practice (e.g., choice of phase 2/3 costs/benefits, method of quantifying)
- *Guidelines for Assessing and Reporting on Natural Gas System Expansion in Ontario* (based on E.B.O. 188)
  - Detailed guidance on first phase of test
  - Supported by Enbridge Gas economic feasibility policies (Exhibit C, Tab 2, Schedules 1 and 2) regarding customer contributions to improve phase 1 results and address cross-subsidization concerns

Additional Resources

- The following resources (among many others) may have relevant material for the refinement of the DCF+ test. Not all material will be relevant as OEB has already made key determinations for the IRP Framework.
- Con Edison (NY State) Gas BCA Handbook (p. 34 of hyperlink)
  - Good descriptions of potential cost and benefit categories in the context of natural gas system planning
  - Specific worked-out examples for IRPAs potentially relevant in Ontario context (energy efficiency, demand response, compressed natural gas)
- National Standard Practice Manual
  - Comprehensive framework for cost-effectiveness assessment of distributed energy resources, albeit with more focus on electricity system
  - Being used by Framework for Energy Innovation WG as a starting point
  - Includes principles of benefit-cost analysis and 5-step process for developing a benefit-cost test
- OEB Filing Guidelines to the 2015-2020 DSM Framework (chapters 9, 10)
  - Guidance on benefits and cost categories of demand-side measures in the context of Enbridge's DSM planning (under review in active application)

Key Considerations for DCF+ Guide

OEB staff believe the following considerations will be important in the approach to drafting and developing guidance for the DCF+ test ("DCF+ Guide"):

1. Enbridge has ultimate responsibility for finalizing and filing with the OEB, but the WG should play an important role.
2. The Guide should be consistent with the IRP Decision and determinations made in the Decision should not be re-examined (e.g., choice of test and high-level categorization of costs and benefits).
3. The specific issues noted by the OEB (carbon costs, risk of not resolving constraint, impact on gas supply costs) should be given consideration and addressed in some manner in the Guide.
4. The Guide and test should be able to be used to assess the costs and benefits of any option of addressing a system need (i.e., an IRPA, a facility solution, or a combination thereof).

   - Potential for the detailed guidance on the DCF+ test in Guide to be adopted by reference in other OEB policies (e.g., Filing Guidelines) where an economic test is used.

Proposed approach for consideration

Step 1

Working Group provides comments to Enbridge on high-level considerations for DCF+ Guide

- Could be a Working Group report or just a compilation of comments from members
- Propose discussion at next meeting after members have had time to review key resources

Step 2

Working Group gives additional consideration to the specific points raised in OEB decision (carbon costs, risk of not resolving constraint, impact on gas supply costs) and provides comments to Enbridge

Step 3

Enbridge drafts Guide, having regard to Working Group comments, learnings from pilots, etc., and returns to Working Group as needed for input. Working Group provided with an opportunity for review of draft Guide before filing.

Questions

1. Do you agree with the key considerations noted by OEB staff in developing the DCF+ Guide, or have any concerns with these considerations?
2. Are there other high-level considerations you believe are important (*further discussion proposed for next meeting*)?
3. Do you agree with the proposed approach to developing the Guide? Are there alternative approaches that should be considered that give greater or lesser responsibility to the Working Group, to OEB staff, or to Enbridge?