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Mid-Term Review Stakeholder Meeting

Presentation by Environmental Defence and the Green Energy Coalition

Presenters: Chris Neme and Kent Elson

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Agenda

TOPIC 1	**Mandating greater savings / net benefits**
TOPIC 2	**Addressing rate impacts concerns**
TOPIC 3	**Accounting for the federal carbon pricing backstop**
TOPIC 4	**Adjusting incentives to maximize net benefits to consumers**
TOPIC 5	**Specific program adjustments to increase net benefits**

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Mandating Greater Net Benefits

- Expanding Programs and Program Funding
- Increasing Focus on Cost-Effectiveness

New Developments Necessitate Program/Funding Expansion

Conservation Potential Study: Shows large untapped conservation savings

- **$20 billion:** Increase in value of gas savings with only modest budget increase (from constrained to semi-constrained scenario, to 2030); **$37 billion** for all achievable.

Current Utility Plans vs. Potential - 2018-2020

Constrained & Semi-Constrained Scenarios

	Gas Savings (million m3)	Budget (million $)	Change in $/m3 (1st year)
Utility Plans	439	$393	
Potential - Constrained Scenario	535	$335	-30%
Potential - Semi-Constrained Scenario	580	$472	-9%

***Note**: utility plan savings based on old C&I Custom free rider assumptions, savings are significantly lower under most recent free rider rate estimates. Figures for 2018-2020 exclude large industrial. Gas savings for all potential = 795 M m3.*

New Developments Necessitate Program/Funding Expansion cont.

- **Conservation Potential Study (CPS) cont.**
  - *Minister's Directive (March 26, 2014):* CPS to "inform natural gas efficiency planning and programs" (p. 2)
  - *OEB's 2015-20 DSM Plans Decision:* CPS must be filed at the Mid-Term Review (p. 85)
  - *OEB's DSM Framework*: "The mid-term review will be informed by a study of achievable potential" (p. 4)
  - *Minister's Directive (March 26, 2014):* "the DSM Framework shall enable the achievement of all cost-effective DSM" (p. 2)
- **CPS: program/funding expansion needed to capture more of the potential**

New Developments Necessitate Program/Funding Expansion cont.

- Developments since the DSM Framework and the Board's Decision on the 2015-2020 DSM Plans necessitate expanded DSM programs/funding
- **Carbon Pricing**
  - **~$2.35 Billion:** Cost of carbon on Ontario's natural gas demand over 2019-2020[1]
  - **~$4.23 Billion:** Cost of carbon on Ontario's natural gas demand over 2021-2022[1]
  - Drastically increases net benefits, cost-effectiveness, and bill reductions from gas conservation
  - Brings about new role for conservation as a cheap hedge against future carbon prices

[1] ICF International, *Natural Gas Conservation Potential Study*, July 7, 2016, prepared for the Ontario Energy Board (estimating approximately 47 million tonnes CO2e/yr); calc: 47M * $20 [for 2019] plus 47M * $30 [for 2020] = $2,350,000,000; 47M * $40 [for 2021] plus 47M * $50 [for 2020] = $4,230,000

Consumer Benefits from Expanded Programs/Funding

- **Conservation: reduces gas bills**
  - **$5 billion:** Net benefits generated by the utilities conservation programs to date[1]
  - Gross gas bill reductions are even larger
  - Savings larger when carbon has a price
  - **$289 million:** forecast net benefits in 2019 and 2020 for Enbridge's DSM plan alone
- **Provides a cheap hedge against future gas / carbon prices increases**
- **Improves efficiency and competitiveness**
- **Provides the least expensive carbon reductions**
- **Benefits increase with advent of carbon pricing**

[1] EB-2017-0224/0255: Union Exhibit B.ED.22; Enbridge Exhibit I.1.EGDI.ED.22; Transcript vol. 3, p. 133, lns. 5-9.

Consistency with Electricity Conservation

- **Natural gas:**
  - Only 1/4 the conservation budget vs. electricity conservation
  - Produces over 4 times the GHG emissions vs. electricity sector
  - Approx. 2-3 times more cost-effective vs. electricity conservation
  - More economic benefits for Ontario (vs. electricity conservation) by avoiding purchases of gas from out-of-province (vs. made-in-Ontario electricity)
- **Relative gas conservation benefits increase with carbon pricing**
  - Carbon pricing increases the relative net benefits and cost-effectiveness of gas conservation vs. electricity conservation
- **Alignment/consistency with electricity sector conservation necessitates expanded gas programs/funding with advent of carbon pricing**

Cost of Status Quo in 2019 & 2020

- **Many millions of foregone savings**
  - E.g. **$289 million:** forecast net benefits in 2019 and 2020 for Enbridge's DSM plan alone; **$30 million**: net benefits with only an approx. 10% increase in net benefits (excl. avoided carbon costs)
- **Opportunities lost for decades**
  - If equipment is purchased without upgrading to the most efficient option, the customer must wait until the end of life of the equipment before an efficiency upgrade is cost-effective again
  - Locks in higher-than-necessary gas bills for decades for some customers
- **Greater exposure to future gas/carbon price increase risk**
  - Savings from 2019/20 programs would persist (e.g. for 20 yrs, depending on measure life)
  - Lost opportunities could be highly expensive in the future (e.g. 2040) with high carbon prices

Options to Expand Programs/Funding in 2019 and 2020

1. Amortize (e.g. rate base) costs to allow ramp up toward achievable conservation potential within the $2 cap
2. Increase cap (e.g. $2 to $3)
3. Maintain the $2/month residential cap, but increase cap in other sectors
   - Commercial and industrial sectors are capped at the level consistent with the $2 residential cap while holding each sector's proportion of the total budget constant vis-à-vis the 2014 plans
4. Remove cap

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Address Rate Impact Concerns

More participation reduces equity concerns

Impacts can be smoothed by matching costs and benefits over time

Avoiding Undue Rate Impacts – Fairness to Non-Participants

- **Rate impact concerns = non-participant concerns**
  - Participants in conservation programs achieve lower gas bills and achieve net benefits
  - Only non-participants face net costs
  - Rate impacts are a non-participant impact/fairness issue
- **But conservation creates savings for non-participants too**
  - Non-participants benefits include: avoided distribution costs, suppression of market prices, and the difference between avoided and average commodity prices [1] Board directed the utilities to analyze a "net rate impact" approach (OEB 2015-20 DSM Plans Decision, p. 87)
- **Solution 1: expand DSM programs**
  - Increases participants (decreases non-participants)
  - Increases *opportunities* to participate (addressing *fairness* to non-participants)
- **Solution 2: amortize costs**
  - Aligns timing of costs and benefits
  - More gradual build-up of costs seen by ratepayers

[1] EB-2015-0029/0049, Direct Testimony of Paul Chernick, July 31, 2015

Problem – Mismatched costs & benefits over time

- **Example: Enbridge 2018 DSM Programs** **(EB-2017-0224, exhibit JT2.1)**

Value of Lifetime GHG Emissions Reductions from 2018 Total DSM Program																	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
Forecast Annual Gas Savings m3	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	76,648,833	1,226,381,328
Forecast Annual GHG Reductions (t C02e)	143,717	143,717	143,717	143,717	143,717	143,717	143,717	143,717	143,717	143,717	143,717	143,717	143,717	143,717	143,717	143,717	2,299,465
Forecast Carbon Price ($/t C02e)	$17.00	$18.00	$18.00	$19.00	$20.00	$21.00	$31.00	$36.00	$43.00	$50.00	$57.00	$60.88	$65.02	$69.44	$74.16	$79.20	n/a
Value of GHG Reduction	$2,443,182	$2,586,898	$2,586,898	$2,730,615	$2,874,331	$3,018,048	$4,455,213	$5,173,796	$6,179,812	$7,185,828	$8,191,844	$8,748,889	$9,343,814	$9,979,193	$10,657,778	$11,382,507	$97,538,648
Cost of Gas ($/m3)	$0.1766	$0.2112	$0.1993	$0.2038	$0.2085	$0.2133	$0.2182	$0.2232	$0.2283	$0.2335	$0.2388	$0.2443	$0.2499	$0.2556	$0.2614	$0.2674	n/a
Total Program Costs	$56,267,166	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$56,528,979
Avoided Cost of Gas	$13,534,684	$16,186,976	$15,274,834	$15,624,364	$15,981,891	$16,347,600	$16,721,677	$17,104,314	$17,495,707	$17,896,056	$18,305,566	$18,724,447	$19,152,913	$19,591,183	$20,039,483	$20,498,040	$278,479,736

Solution: amortize conservation costs over time

- Benefits:
  - Soften rate impacts
  - Intergenerational fairness
  - Consistency with supply-side investments
  - Allow expansion of cost-effective conservation

Illinois Example

- Conservation is rate based
- A rate of return is paid in lieu of an incentive mechanism
- Rate of return is tied to performance
  - Normal rate of return for achieving 100% of savings target
  - Up to 200 basis point bonus for exceeding target by 25% or more
  - Up to 200 basis point penalty for falling short of target by 25% or more

See: http://ilsagfiles.org/SAG_files/Meeting_Materials/2017/January_24_2017/IL_Legislation_Overview_SAG_Planning_01242017.pdf.

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Federal Carbon Price Backstop

How to account for it

Carbon Costs Should be Added to DSM Screening Tests

- Carbon pricing is a real cost (over ~$2 billion / yr by 2022)
- Excluding carbon costs is **distortionary:**
  - Skews long vs. short-lived measures: Carbon pricing increases the relative benefits of longer-lived conservation measures vs. shorter-lived ones (because carbon costs increase over time)
  - Skews gas vs. other avoided costs: Avoided cost calculations include non-gas saving (e.g. electricity, water). Carbon pricing increases the relative value of gas savings vs. other avoided costs.
- Excluding carbon costs also causes:
  - Understating of the gas conservation potential
  - Understating of the net benefits and cost-effectiveness of gas conservation
  - Understating benefits and cost-effectiveness of gas conservation vs. electricity conservation

Proposal

- Forecast carbon costs should be added to conservation screening while maintaining 15% as a non-energy non-carbon benefits adder
- 15% is a conservative estimate of non-energy and non-carbon benefits (see https://energyefficiencyforall.org/sites/default/files/2014_%20NEBs%20report%20for%20Maryland.pdf and other materials to be filed in the future)

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Incentivize Maximization of Net Benefits

Problem: No incentive to maximize net benefits

- Current model: utilities profit from meeting targets, but have:
  - No profit incentive to design optimal plans that **maximize net benefits**
  - No profit incentive to design the **most cost-effective** plans possible
  - Perverse incentives to propose **modest savings targets**
- Utilities are incentivized to *execute* DSM plans well, but not to *design and develop* optimal DSM plans

Solution: Incentivize maximization of net benefits & optimization

- Option 1: allow $10M incentive cap to rise if UCT net benefits rise
  - E.g., for every X% increase in net benefits over the previous year the incentive cap rises by Y%
    - E.g. hold the current ratio of net benefits to the $10M incentive pot constant
  - Incentives would still be earned for meeting targets, but the maximum incentives (~$10M) could increase if more net benefits are achieved via better conservation plans over time
- Option 2: pay all or a portion of incentives as a growing percent of net benefits
  - Illustrative example:
    - 0% for the first $100 million,
    - X% for the second $100 million,
    - Y% for the third $100 million, etc.
- Could be implemented now, but if it isn't, it should be flagged as a priority issue for the next DSM Framework

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Specific Plan Adjustments

To Increase Participation, Savings, Net Benefits

Options to Cost-Effectively Increase Savings, Net Benefits (1)

- **C&I Prescriptive Rebates – increase participation, reduce free riders, lower admin costs**
  - Move to upstream incentives for certain products, starting w/HVAC products
    - Increase participation 2 to 10 times
    - Lower admin costs
  - Increase rebate levels
    - Enbridge typically covers ~5-20% of incremental cost – well below leading utilities
    - Union typically covers 10-30% of incremental cost – still modest vs. leading utilities
  - Add measures
    - E.g. smart thermostats, REALICE ice rink resurfacing technology (Ontario potential ~300 million CCM)
  - Invest in account managers

Options to Cost-Effectively Increase Savings, Net Benefits (2)

- **Adjust C&I Custom Incentives -** increase participation, increase savings depth, lower free riders
  - Increase incentives.
    - Current incentives typically cover very small portion of incremental cost
  - Correct Enbridge Industrial offer to reward deeper savings
    - Current offer declines as savings increase ($0.20/m3 for the first 50,000 first year m3, and only $0.05 for every m3 thereafter.
    - Opposite of custom commercial offering
  - Increase project incentive caps
    - 50% of project cost cap is fine
    - But absolute dollar caps (e.g. $100,000 per industrial project) discourage larger savings
- **Strategic Energy Management for Large Industrials.**
  - Both utilities had very small – essentially pilot – SEM programs in 2016
  - Could be dramatically ramped up (if haven't already)
  - Lots of experience with how to do this in other places

Options to Cost-Effectively Increase Savings, Net Benefits (3)

- **Expand Commercial Direct Install**
  - Enbridge had a very successful DI effort in 2016
    - ~75 million CCM from promotion of just one measure (air curtains)
    - But makes no sense to incur the cost of engaging a small business to only install one measure
    - Should add DI of how water conservation measures (faucet aerators, pre-rinse spray valves, low flow showerheads, etc.) pipe insulation and smart thermostats
    - Should also aggressively promote other major measures like demand control ventilation, ceiling/roof insulation, efficient HVAC equipment (including early retirement), etc.
  - Union appears to have only a very nascent DI program – could launch more aggressively
- **Move Commercial New Construction - "market transformation" to "resource acquisition"**
  - Continue with MT efforts like training, modelling support, etc.
  - But also offer aggressive incentives (e.g. 50% of incremental cost) to drive high participation rates
  - Leading jurisdictions are getting 50% participation or more

About Energy Futures Group

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