



energyfuturesgroup.com

Shortcomings of Enbridge 2023-2027 DSM Plan

SUMMARY OF EFG EVIDENCE

Chris Neme

March 24, 2022

Agenda

SLIDES: 3-11	Savings & Budget
SLIDES: 12-15	Performance Incentives
SLIDES: 16-21	Portfolio/Program Design
SLIDES: 22-24	Discount Rate
SLIDES: 25-26	Procedural Recommendation





Savings and Budget

Why DSM Savings Levels Matter

- DSM lowers customer energy bills – a lot
 - \$372 million net benefits just from Enbridge’s proposed 2023 programs (Exh. D/1/4)
 - 3.29 benefit-cost ratio
 - These values are conservatively low
 - excludes some benefits (e.g., gas price suppression effects)
 - based on 4% real discount rate (net benefits of \$533 million w/0.5% discount rate)
- Reduces GHG emissions
 - By far the cheapest GHG reductions (net cost reductions vs. \$338/tonne CO₂e for RNG*)
 - Needed to meet climate goals
- Mitigates customer risk – e.g., exposure to future fuel price volatility
- Numerous other benefits to program participants, local economy

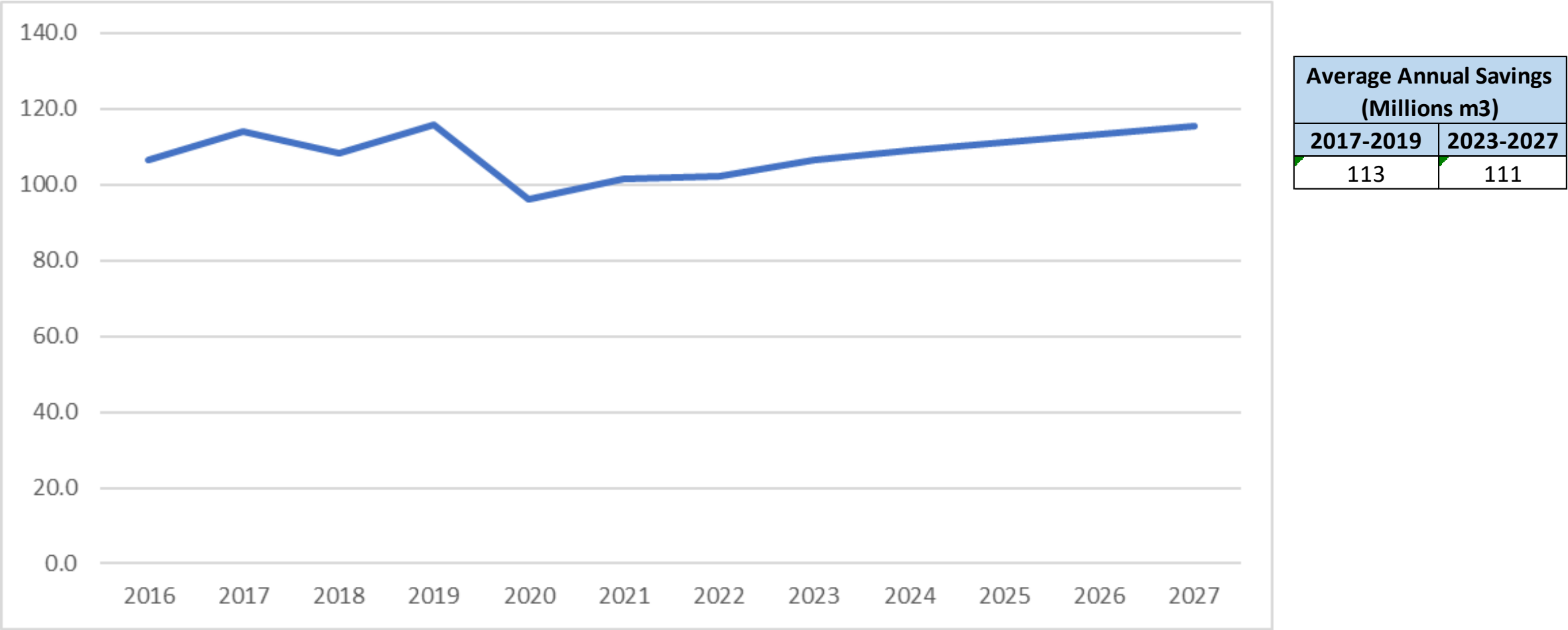
* EB-2020-0066, Exh. I.5.SEC.15

Policy Guidance

- Nov. 27, 2020 Energy Ministry Letter
 - “...**increase the cost-effective conservation of natural gas** to simultaneously reduce emissions and lower energy bills.”
 - “...**supportive of increasing cost-effective ratepayer funding** of natural gas conservation...”
- Dec. 1, 2020 OEB DSM letter
 - DSM Plan should be **informed by 2015-2020 plans, mid-term review, 2019 APS, post-2020 consultations, and “the government’s policies and commitments in the Environment Plan...”**
 - Primary objective is to assist customers in becoming more efficient “to help better manage their energy bills”
 - Secondary objectives to “lower overall average annual gas usage”, support achievement of province GHG reduction goals and help defer/avoid infrastructure projects
 - Expect “**modest budget increases...in the near term** in order **to increase natural gas savings**”
- Nov. 15, 2021 Energy Ministry Mandate Letter
 - Gas DSM should deliver “**increased natural gas conservation savings and reductions in GHGs**”

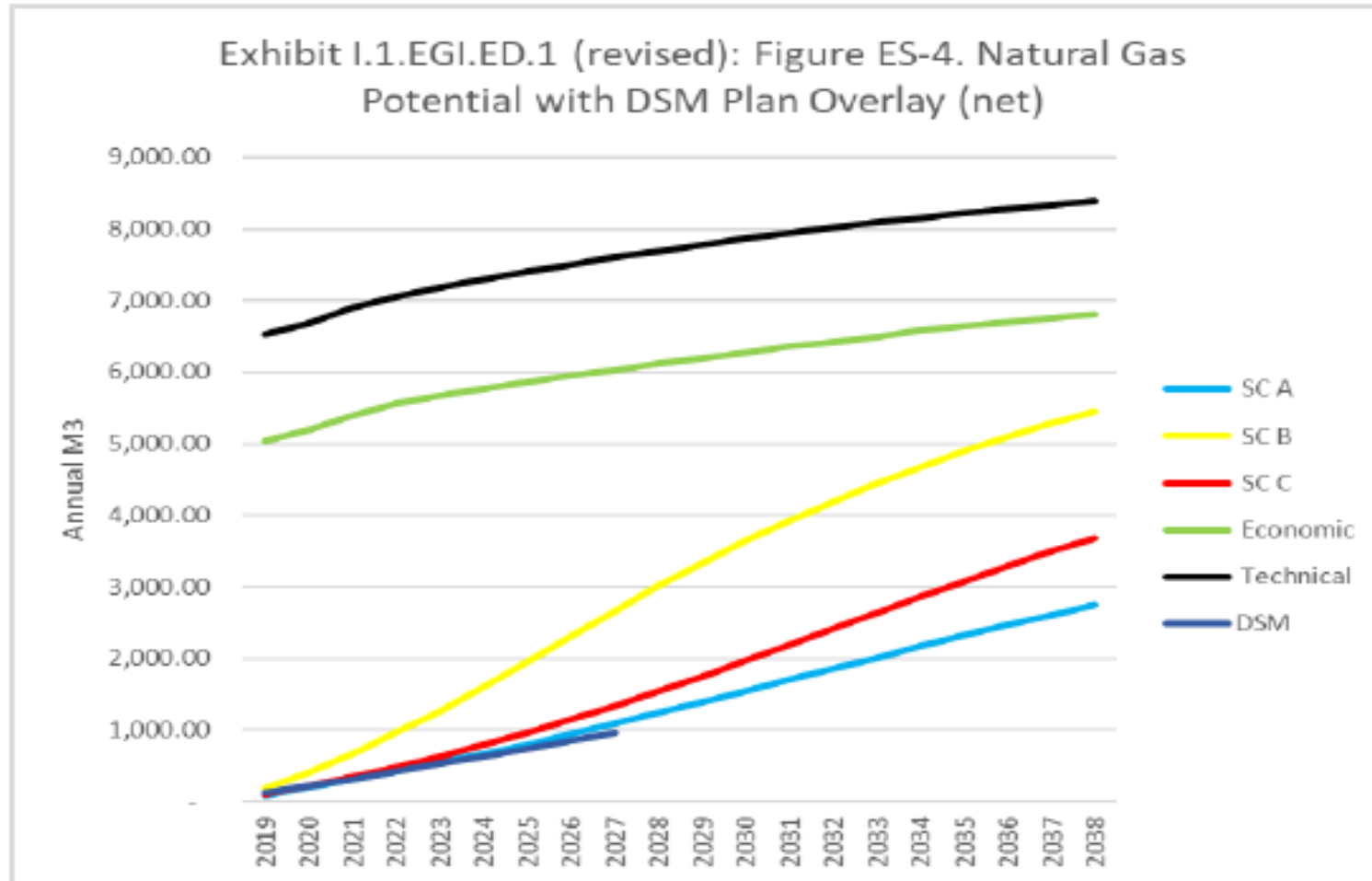
Enbridge appears to have focused on only one element of this guidance – and applied a very conservative interpretation of it.

Planned Annual Savings Lower than 2017-2019 Achievements



Source: EFG Report, Figure 1, p.9

Planned Savings Are Less than Most Constrained APS Scenario



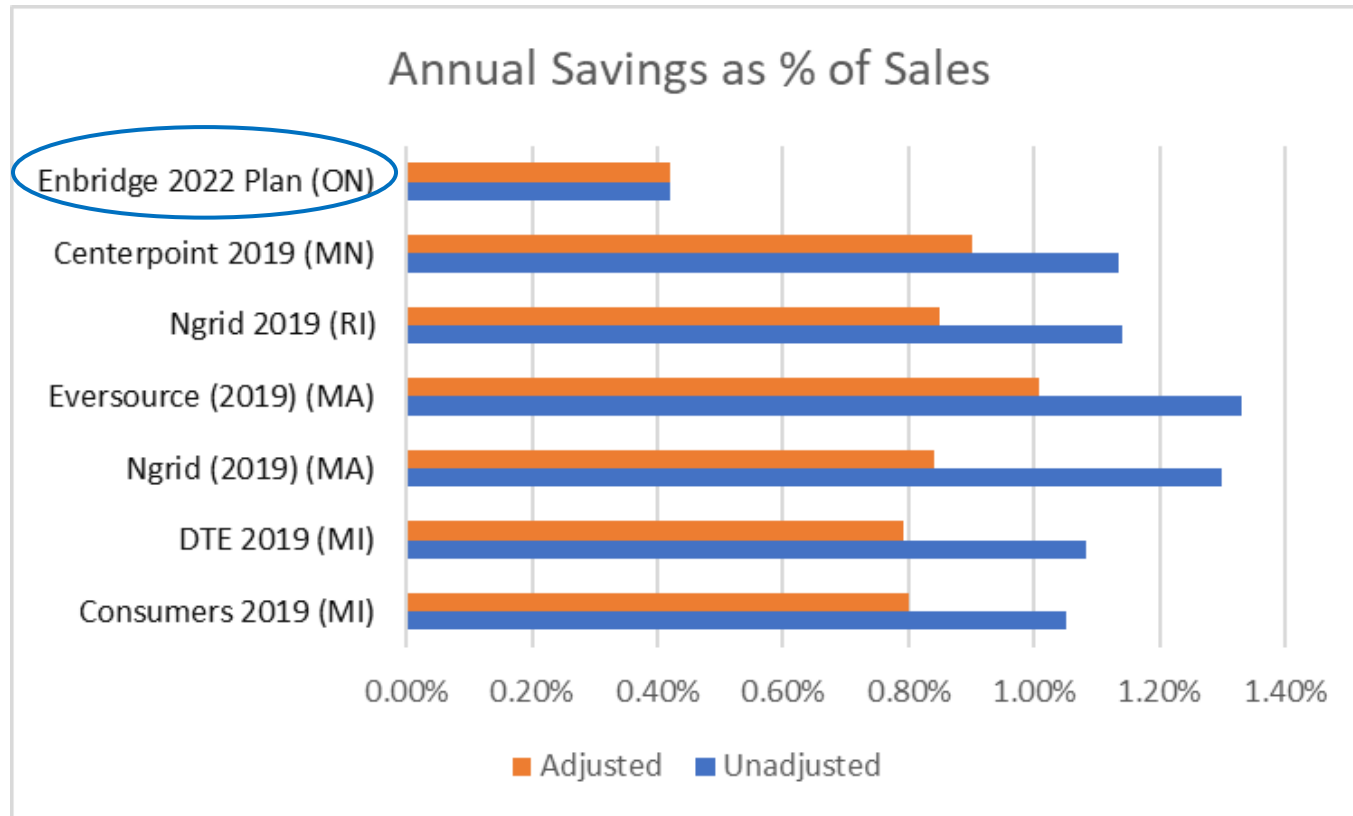
Note:

- Potential studies are inherently conservative
 - understating savings potential
 - overstating costs of acquiring potential (at least at higher levels of savings)
 - overstating difference in cost between different savings levels.
- This study is no different.
- Jurisdictions outperform potential studies when there is direction to pursue all cost-effective savings.

Planned Savings Are Less than 0% of Environment Plan Goal

- Environment Plan goal:
 - achieve 3.2 million metric tons of GHG emission reductions by 2030 from increased natural gas conservation relative to baseline of business-as-usual gas DSM
 - Doesn't say how much of that should come from Enbridge DSM (vs. government policies and programs), but as least some DSM contribution expected
- Enbridge DSM Plan
 - Achieves lower savings than recent years, not more
 - Annual average savings is ~12% less than the Environment Plan's assumed starting point for increasing savings (i.e., the 2016 APS constrained scenario)

Planned Savings – at Best – ~50% Less than Leading Gas Utilities



- 60-70% less than reported savings of leaders
- ~50% less after adjusting for advantages of leaders (other than higher budgets)
 - Proper adjustments for all issues raised by Enbridge witness Weaver
 - Conservatively made no adjustments in the other direction for advantages Enbridge has relative to others (e.g., ability to claim much larger savings from commercial boilers)

How Can Savings Be Increased?

- Shifting budget
 - Several program areas with no/little savings
- Improving program designs
- Increasing budget

Addressing Concerns about Spending Increases & Rate Impacts

- Need to consider tradeoffs
 - substantial additional bill reductions
 - meaningful contribution to climate goals
 - reduced risk – to future fuel price volatility, environmental regs, etc.
- Rate impacts are really concern about non-participant impacts
 - Best solution is to expand programs so all customers have opportunity to participate
- DSM % of total gas bills is small
 - Average of only 1.9% of total gas bills as proposed by Enbridge (*JT1.6 for total gas bill*)
 - Significant drop from recent years – 2.9% average for 2017-2019
- Amortization an option for mitigating near-term concerns



Performance Incentives

Enbridge Performance Incentive Mechanism Shortcomings

Incentive Component	Sub-Components	Weight (5-Yrs)	Concerns	EFG Report Pages
Scorecards: Annual Net Gas Savings	Residential Low Income Commercial Industrial Large Volume Energy Performance	57%	* shift from lifetime to annual savings undermines policy objectives of lowering energy bills and pollution * otherwise right focus - and good to have separate targets for diff customer groups - but not enough weight * performance bands of 50% to 150% are too wide - too easy at low end, too hard at high end	pp. 22-26
Scorecards: Participation Goals	Energy Performance Beyond Building Code	5%	* Not needed for EPP - should stand on its own (savings) merits; * BBC program not fuel-neutral - should be removed from portfolio	pp. 23, 25
Economic Net Benefits (under TRC+ Test)	n.a.	31%	* largely redundant w/savings metrics - and more complex * Earnings start at just 27% of planned savings * Earnings affected by factors beyond utility control * increases incentive to shift \$ from smaller customers	pp. 26-30
Low Carbon Transition (hybrid electric/gas & gas-only heat pumps)	Residential installs Res. contractors trained Commercial installs Com. Engineers trained	2%	* including gas heat pumps is problematic - no chance of meaningful impact on market for foreseeable future * OK if hybrid heat pumps are to be cold climate models	pp. 30-31
Long-Term GHG Reduction (Sum of Annual <i>Gross</i> Gas Savings)	n.a.	5%	* gross savings means not measuring real GHG reductions - creates perverse incentive to chase free riders * summing annual savings antithetical to "long-term GHG" * essentially redundant w/savings metrics	pp. 31-32

Alternative Structure Consistent w/EFG Recommendations

Incentive Component	Sub-Components	Weight (5-Yrs)	Changes
Scorecards: Lifetime Net Gas Savings	Residential Low Income Commercial Industrial Large Volume	98%	* shift back to lifetime savings (instead of 1st year savings) * weighting increased w/elimination of participation, net benefit, and long-term GHG metrics * performance bands of 75% to 125% * Energy Performance program savings part of commercial sector - no separate performance metric
Scorecards: Participation Goals	n.a.	0%	* No participation metrics * Beyond Building Code program removed from portfolio
Economic Net Benefits (under TRC+ Test)	n.a.	0%	* no net benefits metric - weight shifted to lifetime savings
Low Carbon Transition (hybrid electric/gas cold climate heat pumps)	Residential installs Res. contractors trained Commercial installs Com. Engineers trained	2%	* gas heat pumps excluded * hybrid heat pumps must be cold climate models
Long-Term GHG Reduction (Sum of Annual Gross Gas Savings)	n.a.	0%	* metric eliminated

Need to Tie Max Performance Incentive to Savings Level

- Enbridge framework assumes fixed maximum incentive
 - No incentive to propose more aggressive plan, higher savings
 - Perverse incentive to propose modest targets to minimize efforts required
- Max incentive should be tied to level of savings
 - Needs to be conveyed to Enbridge before they propose a plan
 - Applicable to future plans...
 - ...but could also be applicable to requirement to revise current plan
- Example:
 - Current maximum (\$21 million) for savings = 0.6% of eligible sales
 - Max incentive scales up or down relative to proposed savings level
 - Should also include average measure life expectation (e.g., 15 years)
 - Should be adjusted for inflation



Program Issues

The Need for “Fuel Neutrality” (1)

- Nov. 15, 2021 Energy Ministry Letter
 - DSM should enable “lower energy bills in the most cost-effective way possible, and help customers make the right choices **regardless of whether that is through more efficient gas or electric equipment.**”
- Optimal customer choices require fuel neutrality
- Optimal program designs require fuel neutrality
- Subsidizing gas options without considering electric options leads to:
 - Inefficient choices & higher-than-necessary energy bills
- Must have (a) unbiased approach and (b) multi-fuel expertise
 - Enbridge has neither

The Need for “Fuel Neutrality” (2)

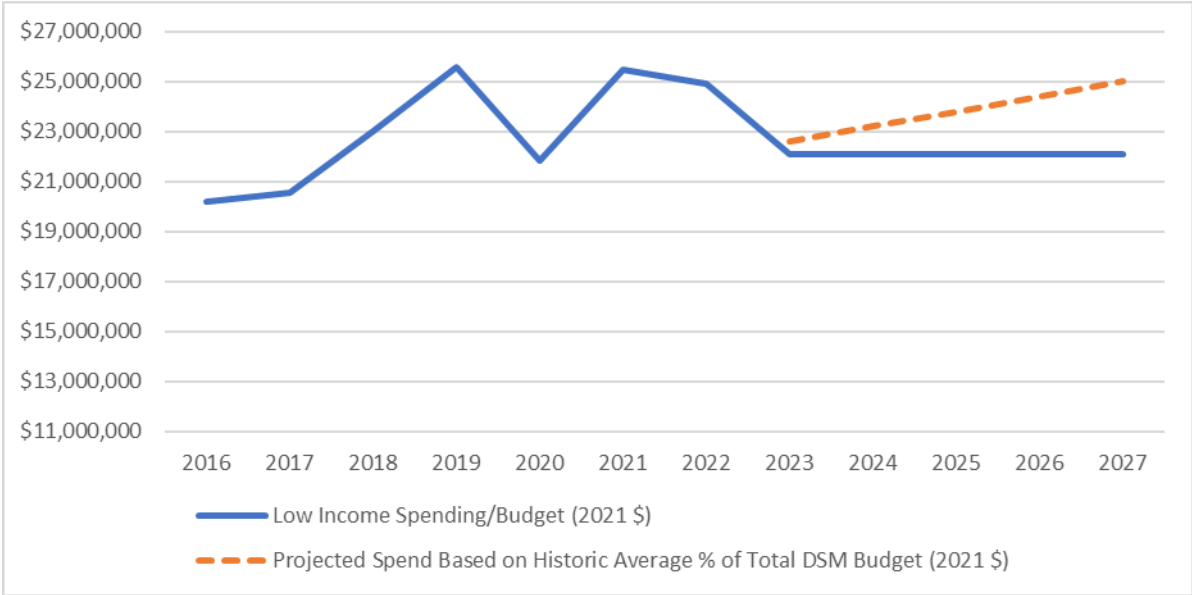
- Era of climate crisis and huge challenge of reducing GHG emissions
- All independent studies suggest significant electrification of gas needed
 - Not a question of whether gas end uses need to be electrified, just how much
 - Massachusetts utilities just filed decarbonization plans that reflect this
 - Utilities preferred statewide “hybrid electrification” scenario = 73% reduction in gas throughput
 - National Grid plan specifies total reduction in throughput of 60% by 2050
 - Many stakeholders challenging these reductions as based on unrealistically optimistic views of RNG availability, costs, impacts on GHGs, and sustainability (as well as conservative views of electrification costs)
- In that context, gas DSM programs need to be:
 - Fuel-blind – not putting a thumb on the scales in favor of gas equipment (vs. electric)
 - Emphasizing reductions in load over efficiency of gas-consuming equipment

Enbridge DSM Plan Biases Customer Fuel Choices

- Building Code program requires use of gas
 - Program should be scrapped, budget reallocated to other programs
- “Low-Carbon Transition” program includes gas heat pumps
 - No chance of meaningful impact on the market until 2030s or later
 - Not cost-effective
 - Gas heat pump measure should be removed from program, budget reallocated to other measures/program
- Res. Whole Building program includes gas furnace & gas water heater rebates
 - \$250 rebate for 96% furnace provides on \$110 in benefits because of min standard of 95%
 - Gas water heaters clearly not cost-effective
 - Rebates for gas-consuming appliance should be eliminated from residential programs, budget reallocated to other measures/programs

Enbridge DSM Plan Reduces Emphasis on Low Income

Enbridge Low Income Spending



Low Income Spending %

Utility	Jurisdiction	Years	Low Income Spend as % of Total Program
Centerpoint	Minnesota	2019	16.6%
DTE	Michigan	2019	24.8%
Consumers Energy	Michigan	2019	23.6%
Eversource	Massachusetts	2019	19.4%
National Grid	Massachusetts	2019	25.4%
National Grid	Rhode Island	2019	23.4%
Enbridge	Ontario	2019	19.1%
Enbridge	Ontario	2023-27	17.5%

- Enbridge declining (drops to 16.5% by 2027)
- Enbridge lower than most leaders

Enbridge's Flagship Residential Program is a Big Unknown

- Residential program cannot be approved – too many unknowns
- Huge questions re integration with Greener Homes Grant still under negotiation
 - Savings attribution (no proposal made public yet)
 - No new targets or shareholder performance metrics
 - OEB cannot assess reasonableness or be asked to “pre-approve” so many future unknowns
- Preliminary details are problematic
 - No increases in program rebate levels are proposed
 - Therefore, it appears that ratepayer funding will displace federal funding
 - If so, incremental savings would be zero – i.e., 100% free riders?
- ~\$32 million/yr (~75%) of Enbridge Res. DSM \$ is for Whole Home program



Discount Rate

Enbridge Proposed Discount Rate is Too High

- Discount rates should reflect policy goals (see NSPM for DERs)
- Ontario policy goals suggest broad societal perspective on DSM
 - Not just gas bill savings
 - Climate goals, other fuel savings, participant costs, non-energy benefits all in TRC+
- This suggests a societal discount rate should be used
- Societal discount rates vary...
 - 0% to 3%, depending on jurisdiction
- But all are below the 4% real rate proposed by Enbridge
 - 4% adopted in 2014 framework
 - Breadth of social concerns – particularly climate – significantly increased since then
- High discount rates can significantly understate value of long-lived savings
 - See GEC/ED response to 13.OEB Staff.3.GEC/ED.1

Suggest Real Discount Rate of 0.5% Based on Canadian Bond Yields



Several other jurisdictions (e.g., Massachusetts, Illinois) also rely on long-term government bond yields as a proxy for a real societal discount rate to be used in their TRC tests.



Procedural Recommendations

Procedural Recommendations

- OEB should reject plan and require Enbridge to file a revised one
 - Need to understand what major residential program will be
 - Should significantly increase proposed savings levels
 - If concerned about rate impacts from increased budget, consider amortization
 - Should eliminate building codes program, gas heat pumps, residential gas equipment rebates
 - Should increase low income emphasis (maybe others too – small business?)
- OEB should tie max performance incentive to level of savings
 - Per our recommendation
 - Would encourage Enbridge to be creative and do better
 - Revised plan to be filed and to start as early as possible
 - Even if mid-year 2023



Chris Neme
PRINCIPAL

@ cneme@energyfuturesgroup.com

📱 (802) 363-6551

🌐 energyfuturesgroup.com