



Energy
Efficiency
Alberta

Energy Efficiency and Small Scale Renewable Energy Potential Study

Outline

- Purpose & Deliverables
- Methodology
- Key Findings

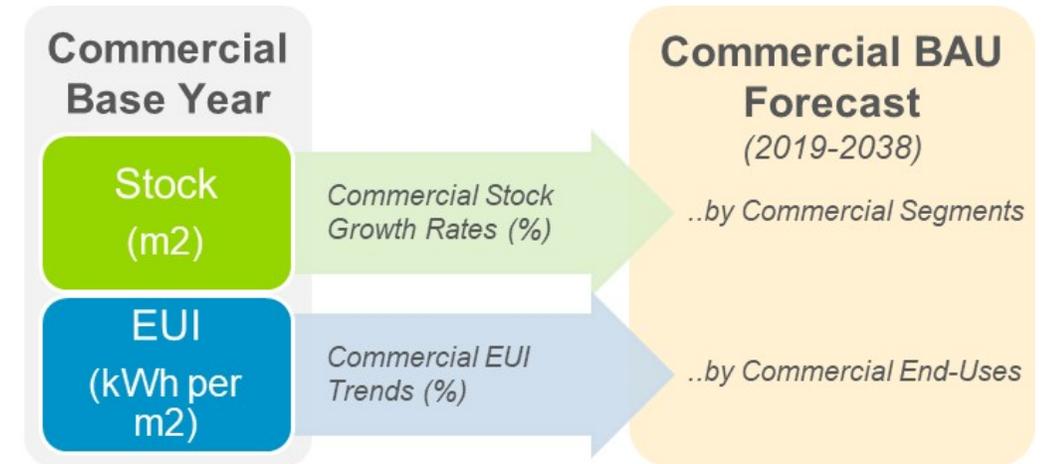
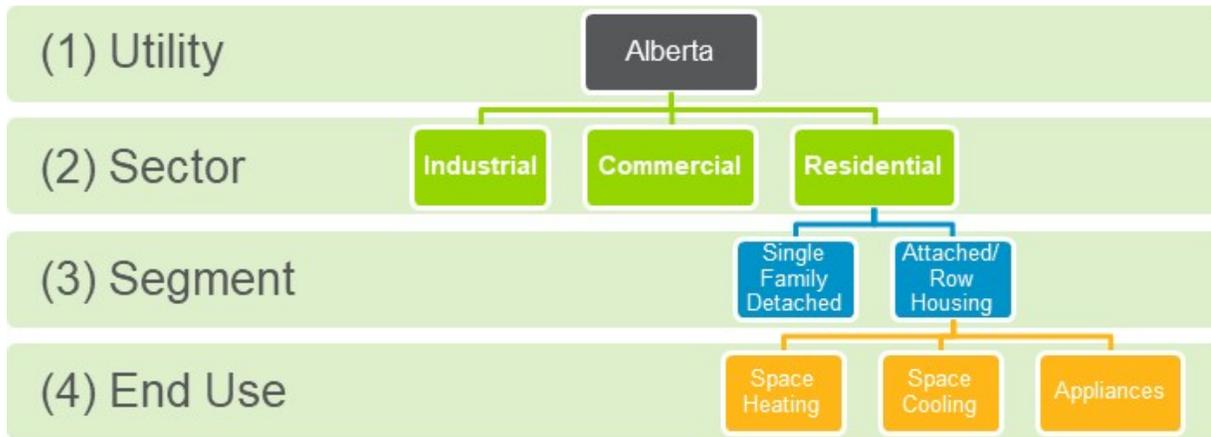
Purpose

1. To inform portfolio and program planning
 - New programs
 - Optimization of existing programs
2. Raise awareness around the potential to save energy

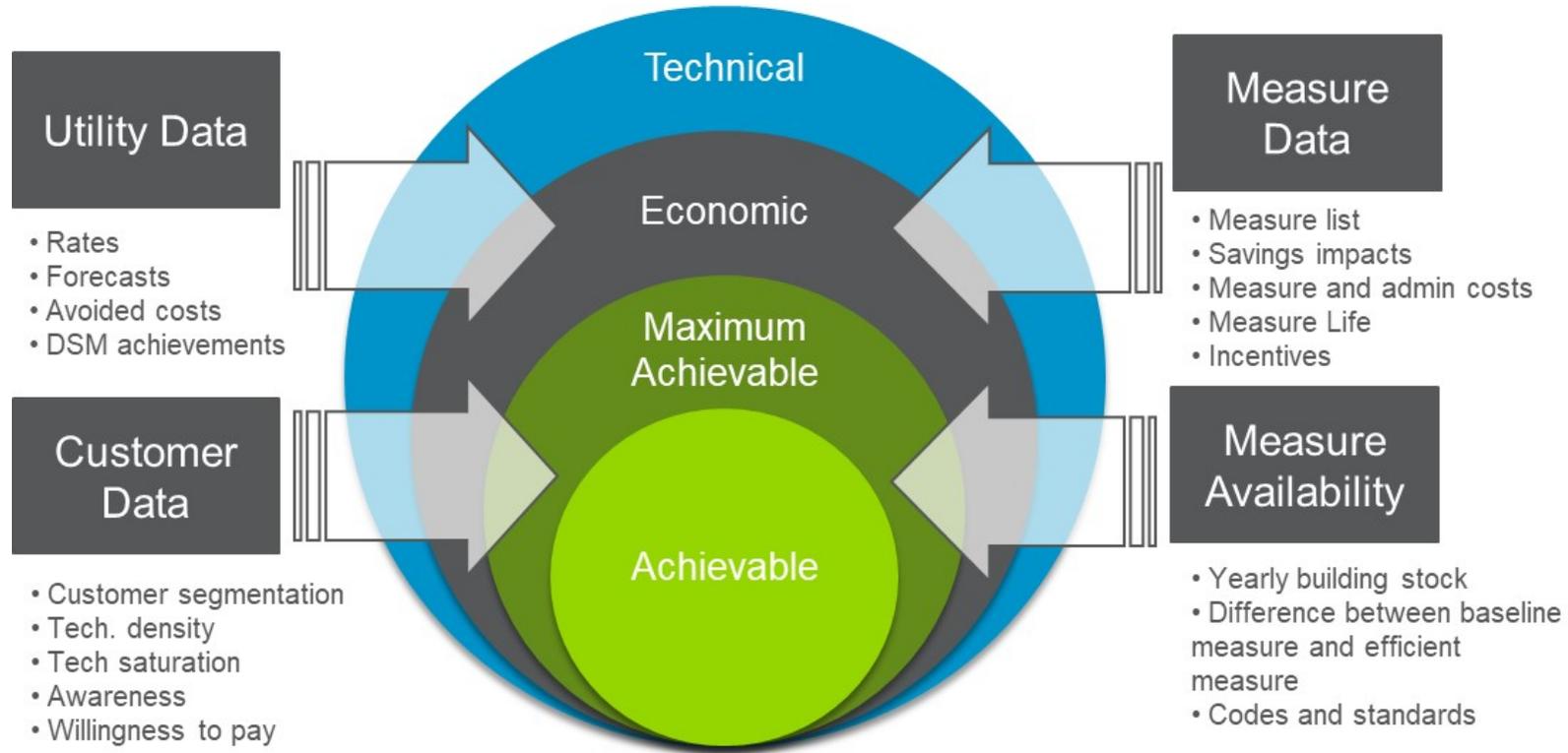
Deliverables

- Report – Navigant’s summary of work completed
- Data tables – input for portfolio / program planning model
- Communications materials – EEA developed backgrounder

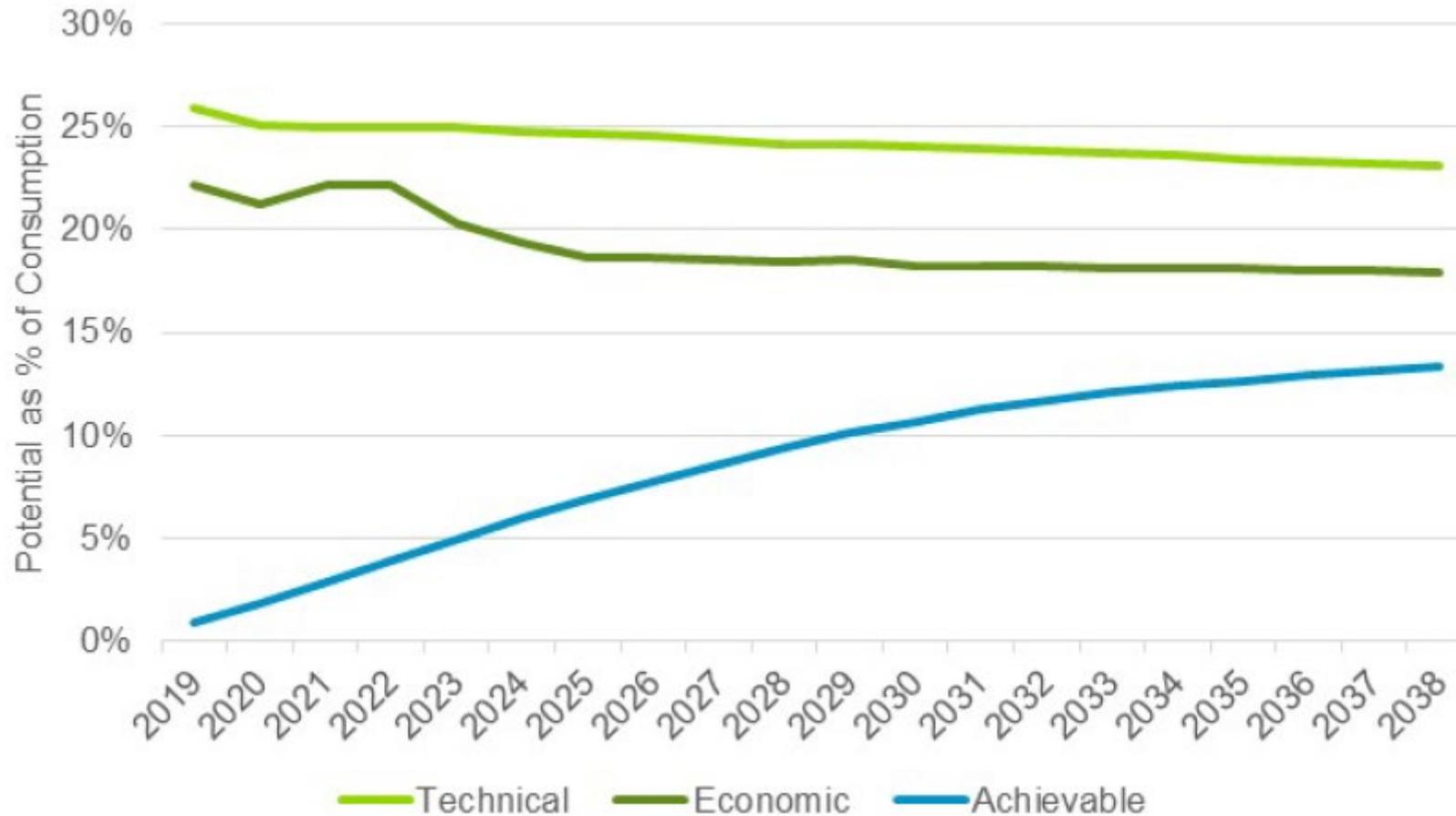
Methodology – Base Year & Forecast



Methodology – Getting to Achievable Potential



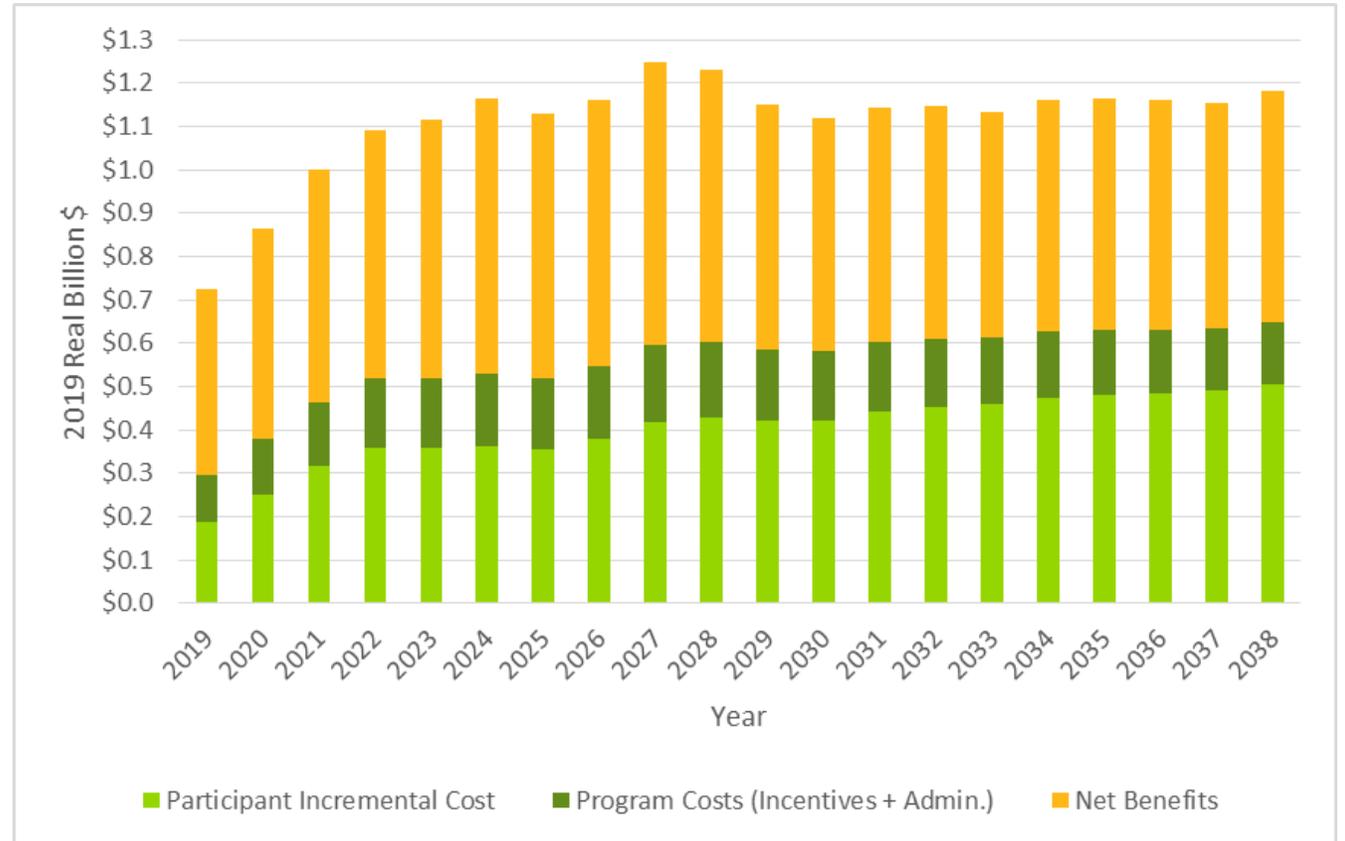
Technical, Economic & Achievable Potential (Electricity)



Key Findings

- Program costs: \$150 million / year
- Participant incremental costs: \$290 million / year
- Electricity savings: ~1%/year
- NG savings: ~0.3%/year
- Gross savings per year of programming: ~\$1 billion & 4.4 Mt CO₂e
- Peak electricity demand savings in 2038: 900 MW

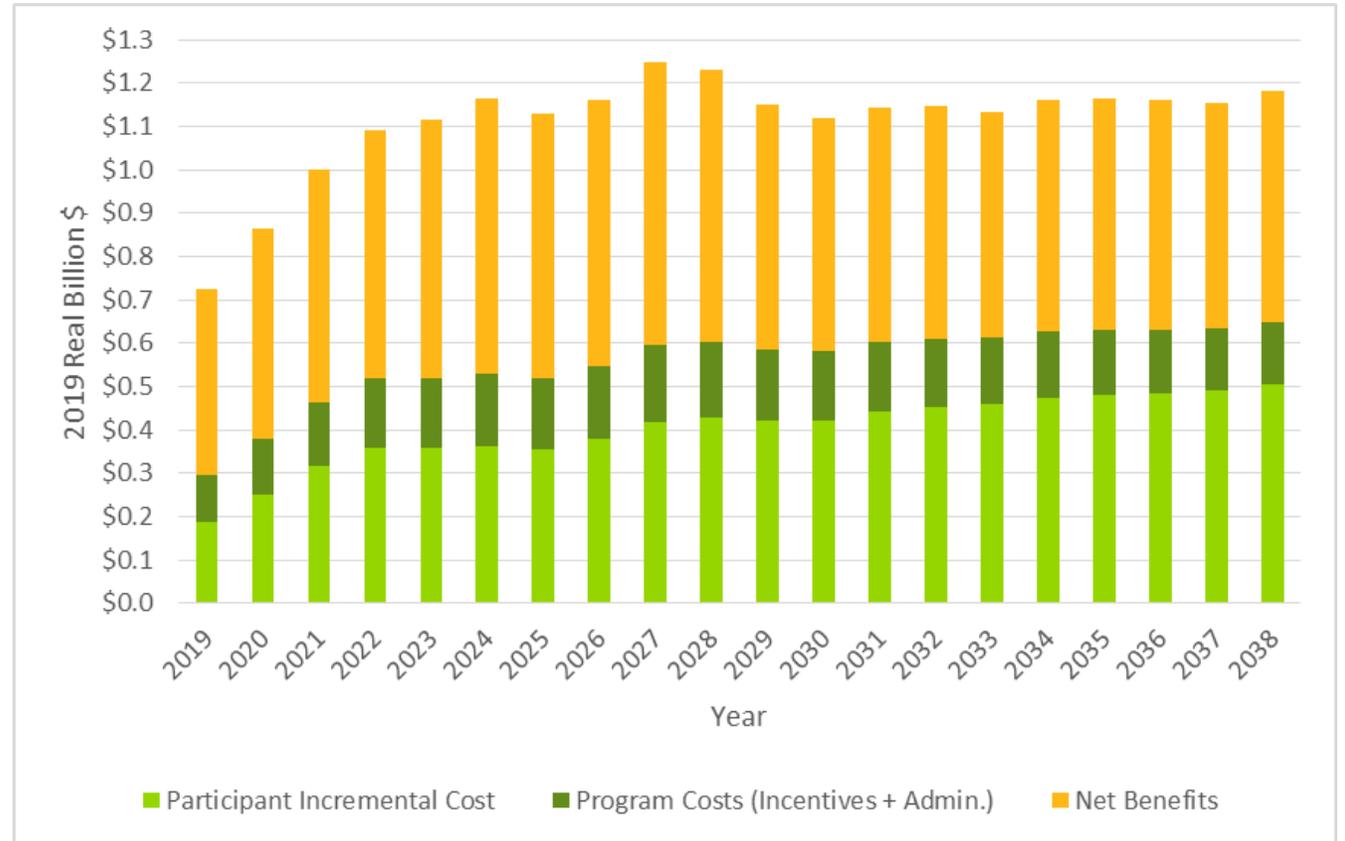
Benefits and Costs, Energy Efficiency and Solar Measures, excluding Oil & Gas Customer Segment, 2019 Real Billion Dollars



Key Findings

- **\$125 saved** for every tonne CO₂e reduced
- **Total cost of EE**
 - 2.4 ¢ / kWh
 - \$3.88 / GJ
- **Total cost of solar**
 - 5.5 ¢ / kWh

Benefits and Costs, Energy Efficiency and Solar Measures, excluding Oil & Gas Customer Segment, 2019 Real Billion Dollars



GHG Reduction Potential by Sector (excluding O&G)

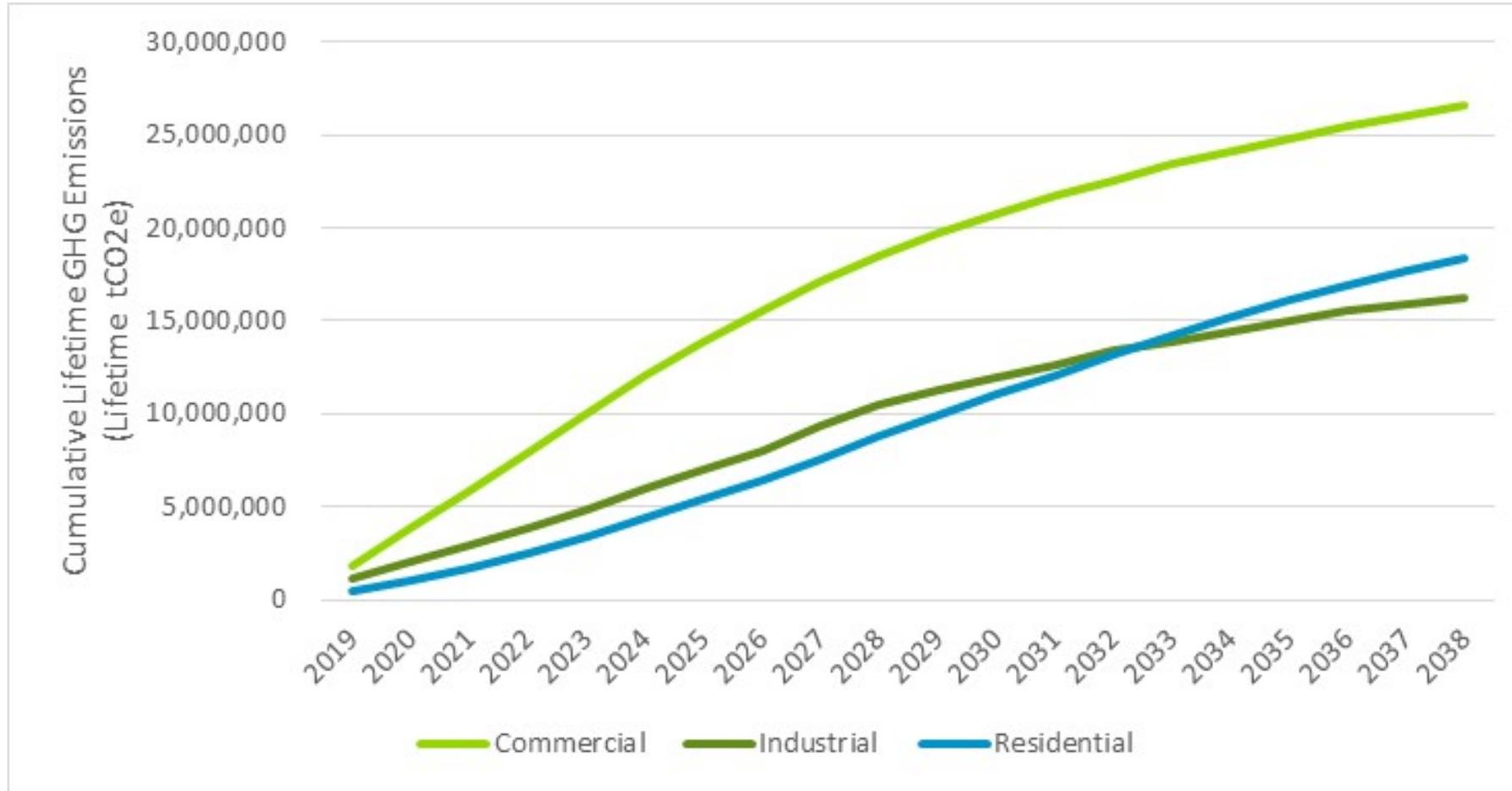
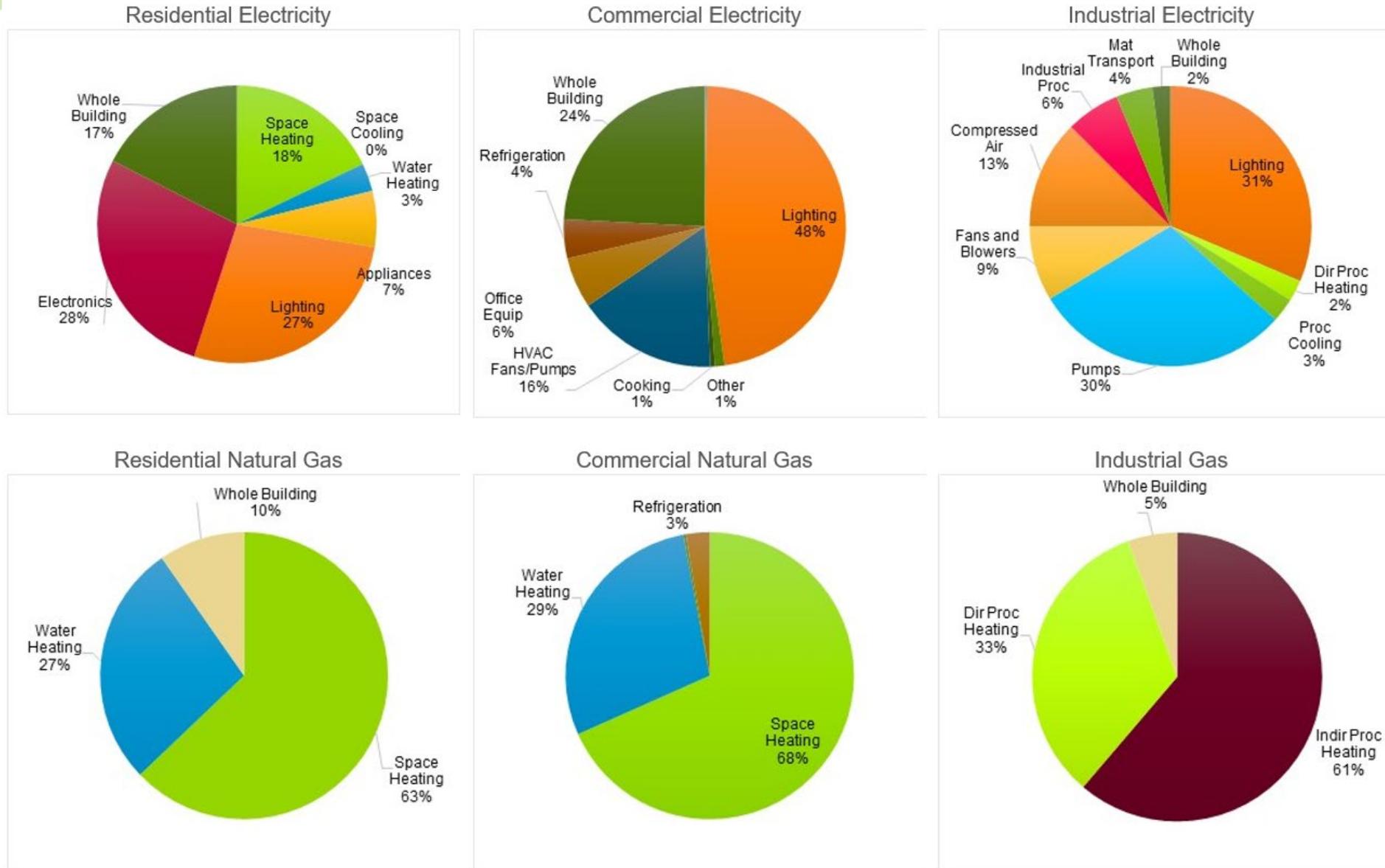
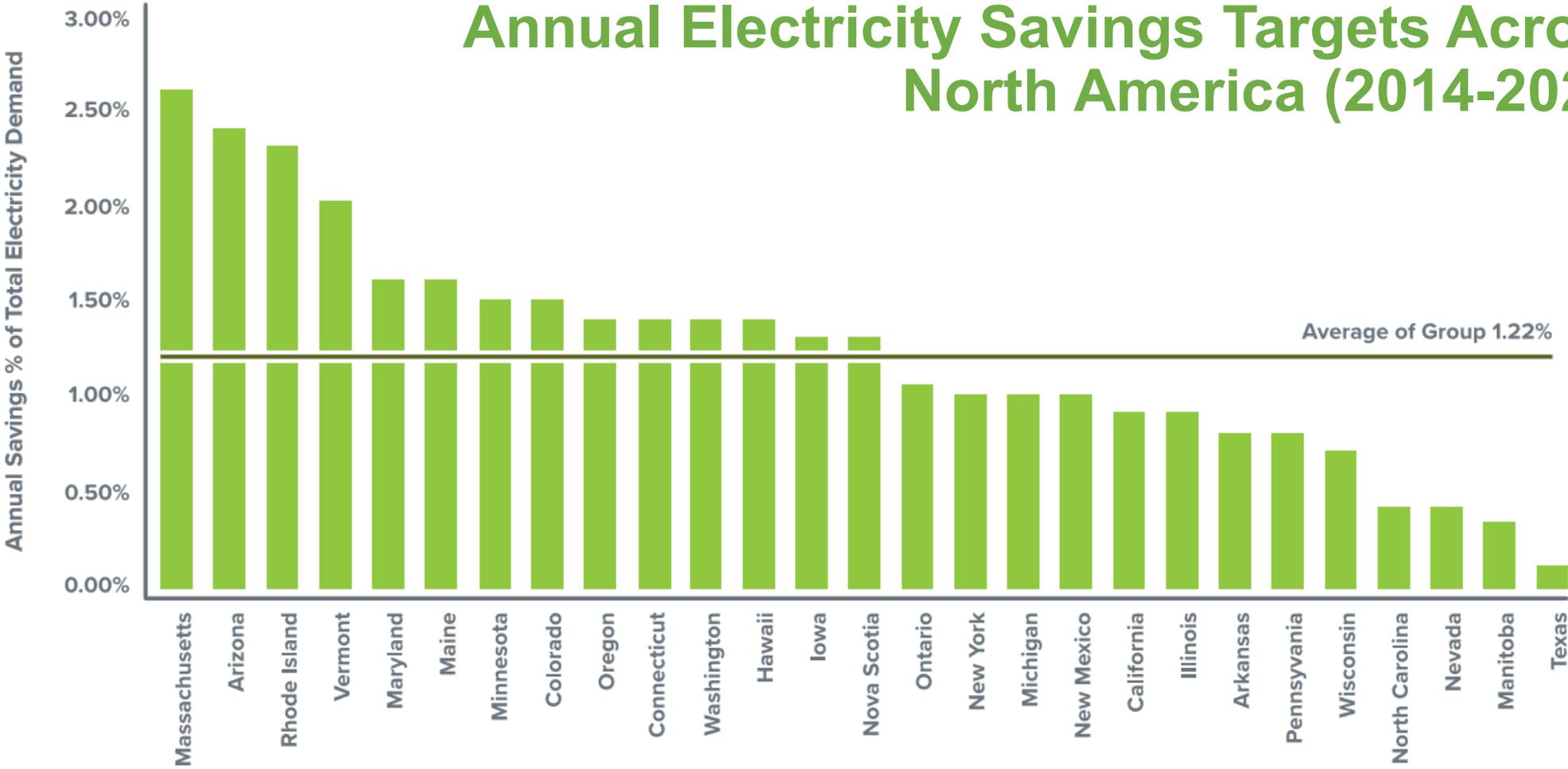


Figure ES-27. 2028 Achievable Potential, Cumulative Gross Savings at Meter, by End Use

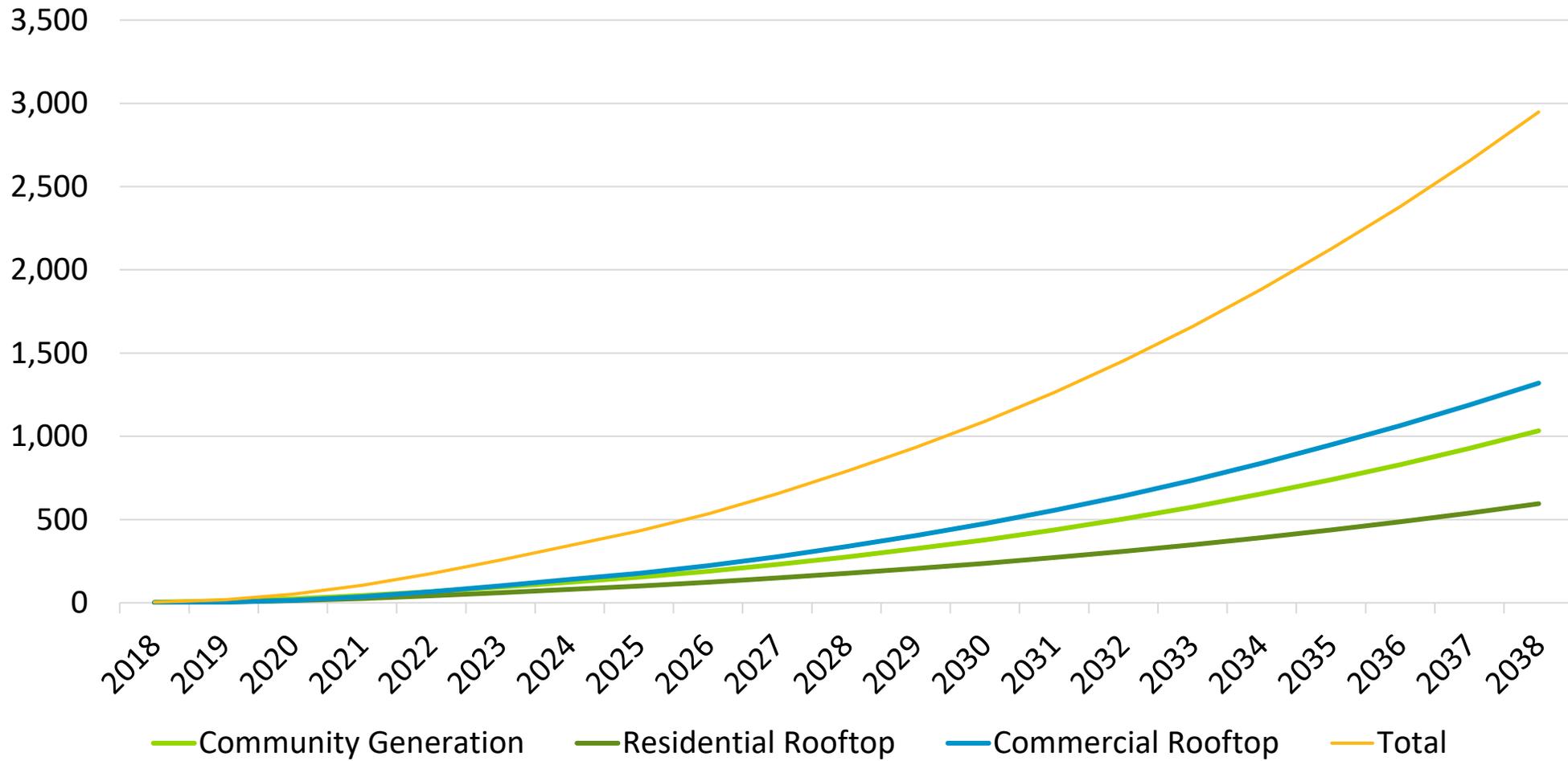


Annual Electricity Savings Targets Across North America (2014-2020)



Source: <http://www.aeea.ca/pdf/energy-efficiency-scenarios-for-alberta.pdf>

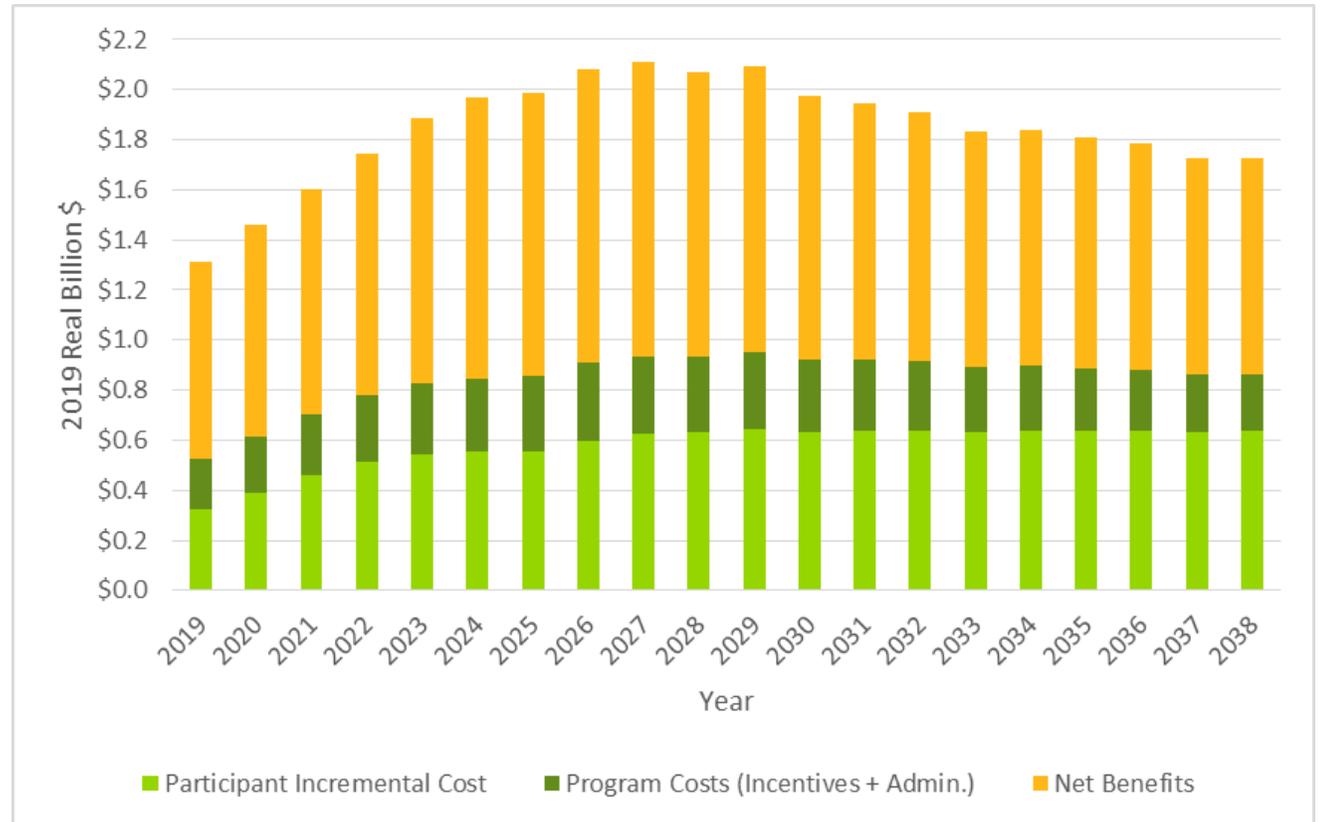
Solar PV – Total Cumulative Installed Capacity (MW)



Including Oil & Gas

- **Program costs:** \$270 million / year
- **Participant incremental costs:** \$380 million / year
- **Gross savings per year of programming:** ~\$1.6 billion & 8.9 Mt CO₂e
- **Peak electricity demand savings in 2038:** 1,300 MW

Benefits and Costs, Energy Efficiency and Solar Measures, including Oil & Gas Customer Segment, 2019 Real Billion Dollars



Multiple Benefits of Energy Efficiency

- Energy savings
- Capacity for the electricity system
- Reduced transmission and distribution (T&D)
- Emission reduction
- Economic development
- Poverty alleviation

Scenarios



Notable Scenario Results

- Funding if benchmarking to other jurisdictions
 - Average program budget: \$250 million / year (excludes O&G sector)
- Funding at benchmark + \$30 / tonne
 - Average program budget: \$470 million / year (excludes O&G sector)
 - 2 to 1 return on investment



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Questions?