

CanSIA / Power Advisory Solar GHG Abatement Costs Analysis

CanSIA obtained Power Advisory LLC to perform an updated GHG abatement cost analysis. Although, Power Advisory has performed a similar analysis for CanSIA in the past, the updated analysis is based on new information coming out of the Long-Term Energy Plan (LTEP) and CanSIA's understanding of the upcoming solar rebate program, in addition to CanSIA's continued recommendation for a 5-year incentive program.

The purpose and rationale for CanSIA's recommended 5-year solar rebate program is to act as a market transformation mechanism, or bridging program, to assist the solar industry in its move from the FIT program to a point where capital incentives are no longer required. What the industry refers to as the point of cost competitiveness or grid parity. A 5-year solar rebate program provides stability for a wide range of entities to invest with confidence in Ontario. Without a predictable multi-year bridging solar program, the investment, jobs, and capacity that the solar industry has built up in the province may be lost. The benefits of solar generation to the province were created from the strong support and encouragement of the Ontario government.

Looking at the bigger picture, solar electricity does more than just help reduce GHG emissions. Solar electricity also assists the Ontario government in achieving other objectives including fostering innovation and economic development, conservation and energy efficiency, along with empowering electricity consumers with more freedom and choice.

The CanSIA / Power Advisory analysis information includes:

Key Findings:

- 1) Over 10,000 rooftop installations per year (assuming 4 kW AC solar PV system size).
- 2) 640 commercial installations per year (assuming 250 kW AC solar PV system size).
- 3) \$160 / tonne is the weighted average GHG abatement cost.
- 4) \$1.01/W or \$202 million average incentive payout per year.
- 5) Over 11 million tonnes of total reduction of GHG emissions over life of all solar projects.
- 6) 0.33 T/MWh is the average expected GHG emission reduction per MWh of solar production.

Key Assumptions:

- 1) 5-year solar rebate program with 200 MW installed per year (20% residential, 80% commercial).
- 2) 50% upfront rebated based on installed cost of solar PV system.
- 3) 30-year solar PV system operating life.
- 4) Solar performance starting at 1,300 kWh/year with 1% annual degradation.
- 5) Electricity demand outlook assumed to be between OPO Outlook B and Outlook C.
- 6) Future supply need addressed with a moderate amount of new renewable generation starting in mid 2020s, and new gas-fired generation due to adoption of Incremental Capacity Auction.
- 7) Model for cost of GHG emissions abatement is based on: Total amount of incentive paid, and the differential of GHG emissions in system between i) no solar from rebate program and ii) 5 years of solar rebate program.
- 8) Weighted average cost is based on total incentive cost and total GHG emissions abatement levelized for the life of all solar installed under the rebate program.
- 9) Average installed cost of \$2.02/W over a 5-year solar rebate program and encompasses both residential and commercial systems.

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