

An Irresistible Force meets an Immovable Object

Municipal Climate Action Plans and the IESO's Pathways
to Decarbonisation Study

SSG

ABOUT SSG

Climate
action
planning

20+ years of
experience;
40 staff

100+ climate
action plans

Municipalities,
states, utility
regulators

SSG

IESO PDS

1. Evaluates two scenarios- a 2030 moratorium on natural gas generation and **a 2050 decarbonisation scenario**
2. Projects a doubling of electricity consumption from **150 TWh to 300 TWh by 2050**
3. Capacity will grow from 42 GW in 2022 to 88 GW by 2050, which requires 69 GW plus 5 GW of demand response
4. Identifies no regret measures including accelerating measures for non-emitting capacity, planning for **new nuclear, long-duration storage, hydroelectric facilities, and transmission**, investing in emerging technologies, initiating collaboration, aligning regulatory processes and tracking progress.
5. Total investment is between **\$375 and \$425 billion by 2050.**

DIFFERENT MANDATES

Municipal Climate Action

Climate Emergency

IESO

**Decarbonisation is
a system constraint**

SCOPE

Municipal Climate Action

Comprehensive

IESO

Narrow

MITIGATION OPPORTUNITIES

Municipal Climate Action

Integrated, energy
efficiency, land-use,
transportation

IESO

Existing and future
technologies

ELECTRICITY SYSTEM GROWTH

Municipal Climate Action

Aggregate 1% per year

IESO

2-3% per year
for the province

ENGAGEMENT

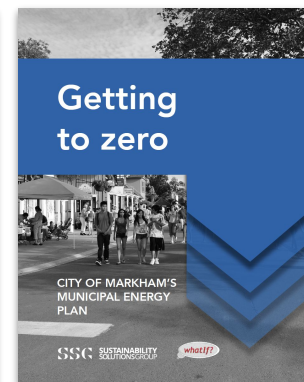
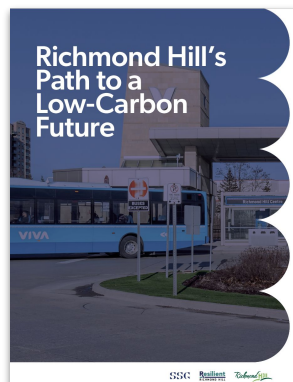
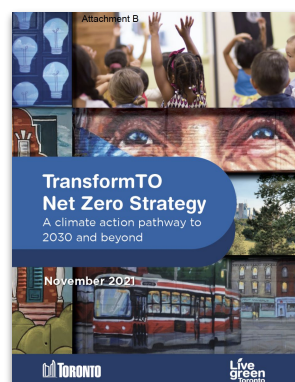
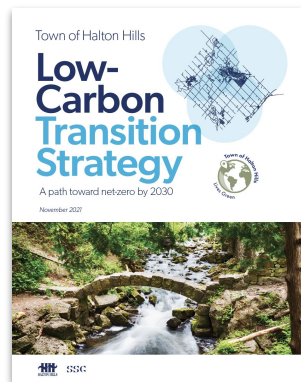
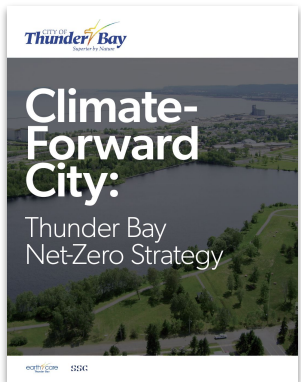
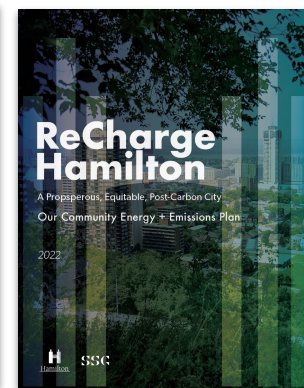
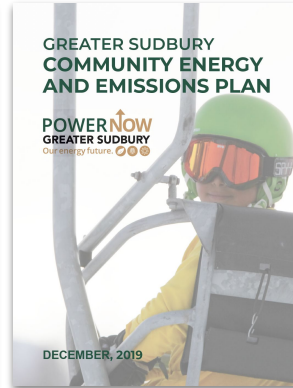
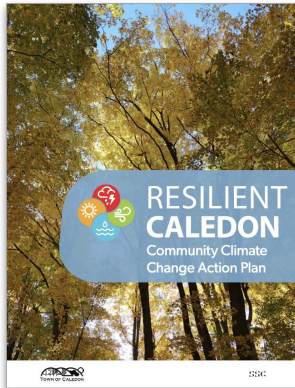
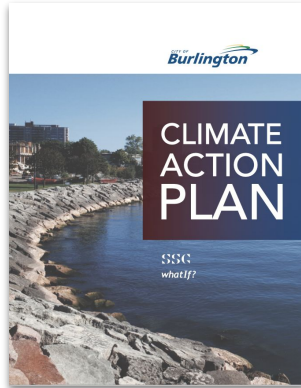
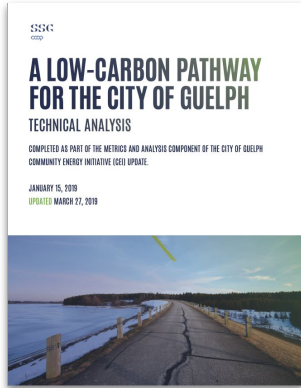
Municipal Climate Action

Community,
passed by Councils

IESO

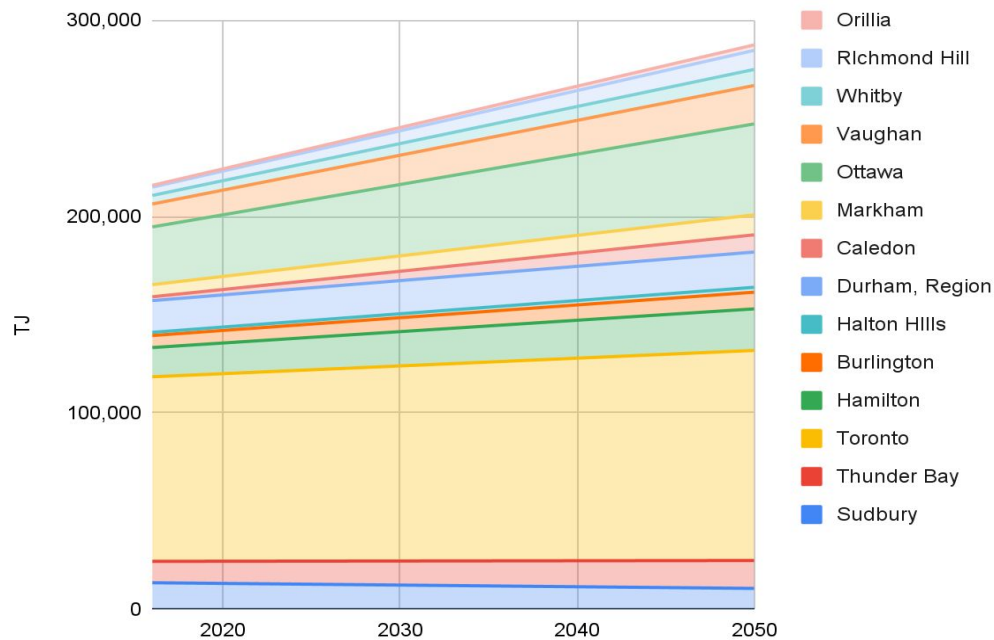
Technical stakeholders

MUNICIPALITIES MATTER



ELECTRICITY CONSUMPTION

Selected Climate Action Plans



THIS TIME IT'S DIFFERENT?

1976

Gap: 38,000 MW. 24 nuclear reactors and 18 coal-fired generators, all to be online by the early 2000's. None ever built. To this day the 38 GW "gap" is larger than the peak demand for electricity in Ontario. Proposal led to the Porter Royal Commission.

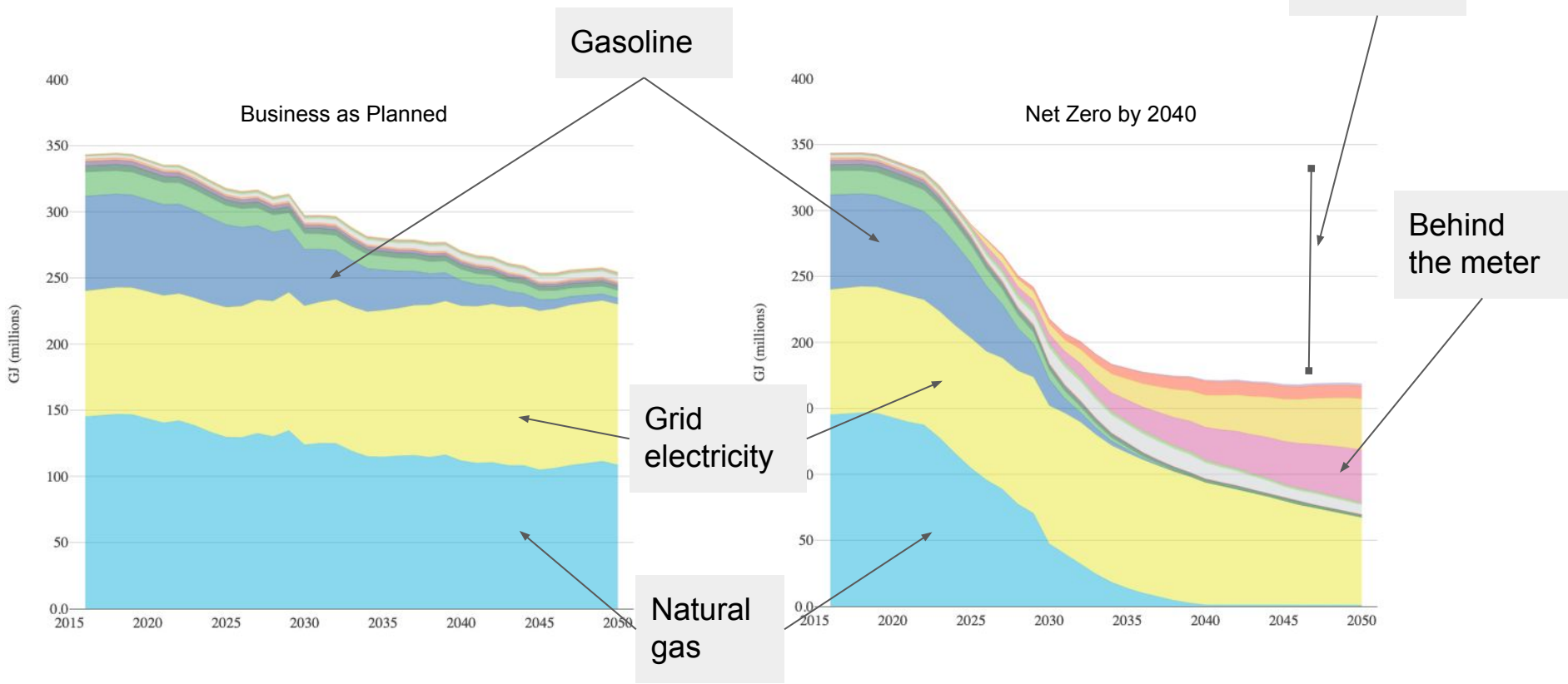
2005-2007

Gap: 163 TWh by 2010; 169 TWh by 2015; 177 TWh by 2020. Gas plant approvals expedited. No gap materialized. Demand hovering around 150 TWh 15 years later.

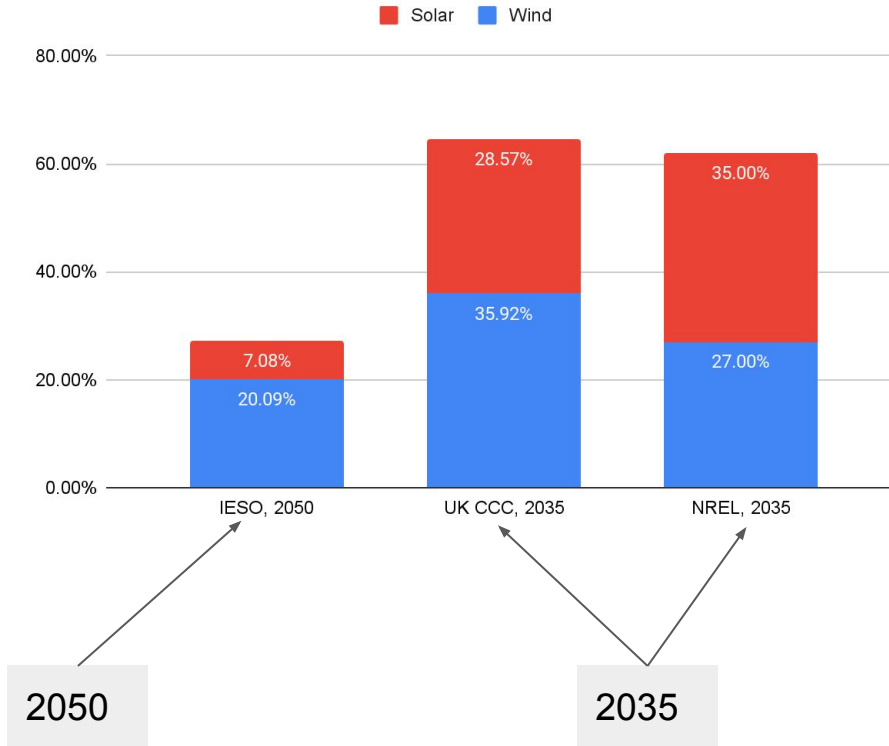
1989

Gap: 9,700 MW by 2005 and 21,300 MW by 2014. Environmental assessment commenced but was cancelled when Hydro withdrew the plan in 1991. The gap never materialized and none of the plants were built.

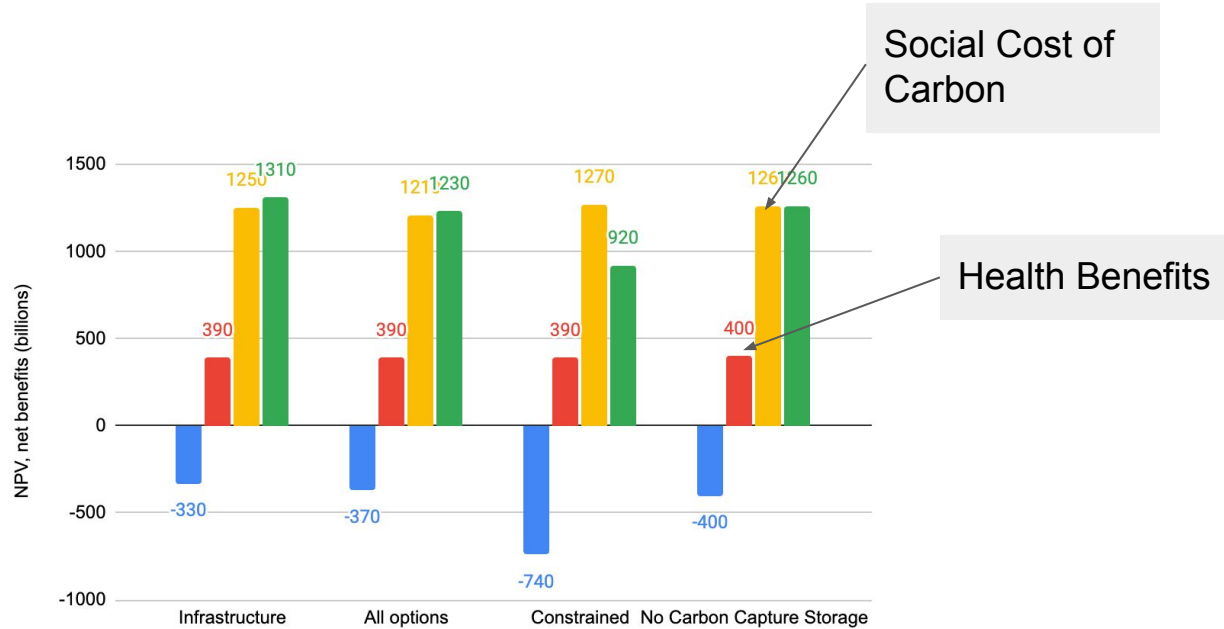
EFFICIENCY, LOCAL GENERATION



MORE WIND? AND SOLAR?



TOTAL COSTS AND BENEFITS



System Costs

Social Cost of Carbon

Health Benefits

RECOMMENDATIONS

11 points for alignment, opportunity
and hope

1.

More Scenarios

Please!

2.

An Integrated Energy Systems Analysis

Demand and supply,
bottom up

3.

Review the IESO Mandate

Align the mandate with a response to dangerous climate change



4.

Regional Disaggregation

What are the impacts on communities?

5.

Climate Change Impacts

Climate change is transforming the energy system

6.

Transparency

Make modelling assumptions
transparent

7.

Economic Analysis

Include all the costs and benefits

8.

Risk Analysis

What is the impact of stranded assets?

9.

GHG Accounting

Align reporting of GHGs

10.

Distribution Transformation

Assess the new realities of distribution

11.

Localised Energy Planning

Build an electricity system
from the bottom up