

City of Ottawa Energy Planning and Wasteplant Cogeneration Upgrades

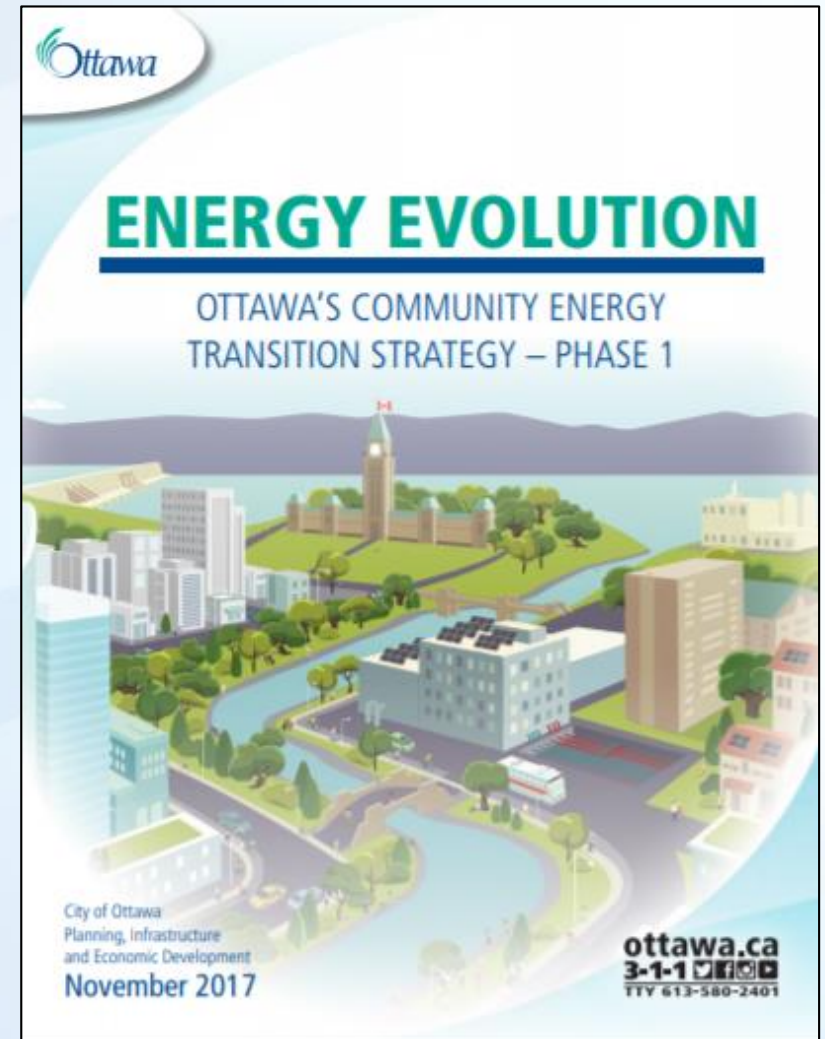
IESO Regional Forum



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Municipal Energy Planning

- All energy is considered in a Municipal Energy Plan (MEP)
- In Ottawa's plan, the targets and actions are all driven by a community wide greenhouse gas reduction target
- Although many required actions are outside the control or influence of a municipality, they are never the less considered
- Arguably, MEP's are the most integrated energy plans in Canada



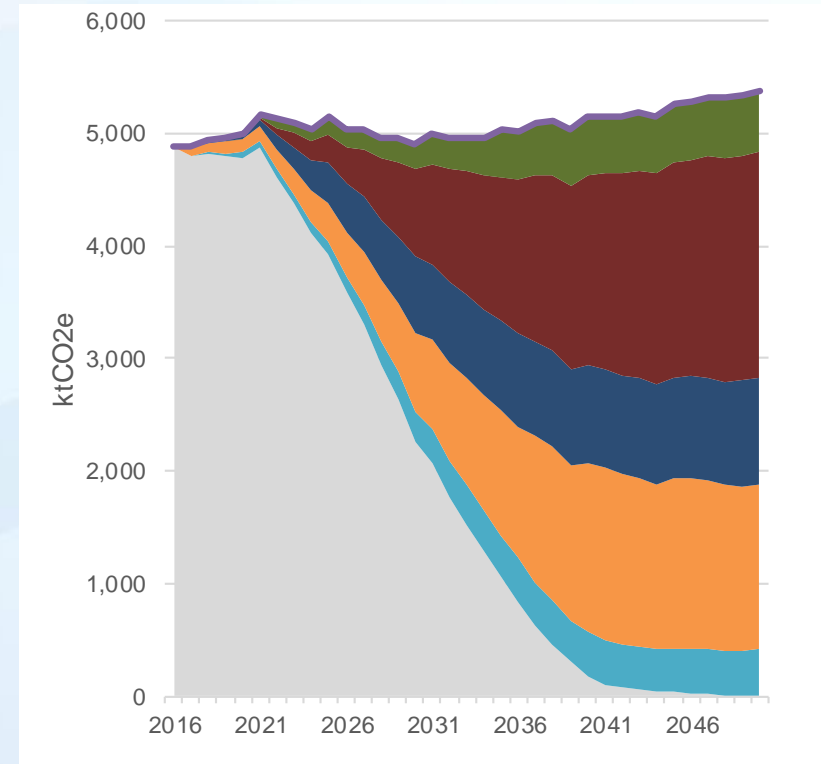
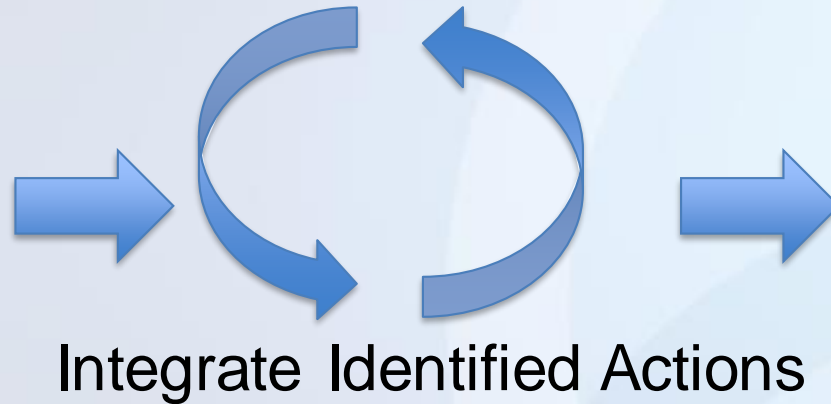
MEP: The Process

- Study and Consult



Pathways:

- **Generation**
- **Better Buildings**
- **Transit**
- **Biogas**
- **Waste**
- **Etc**

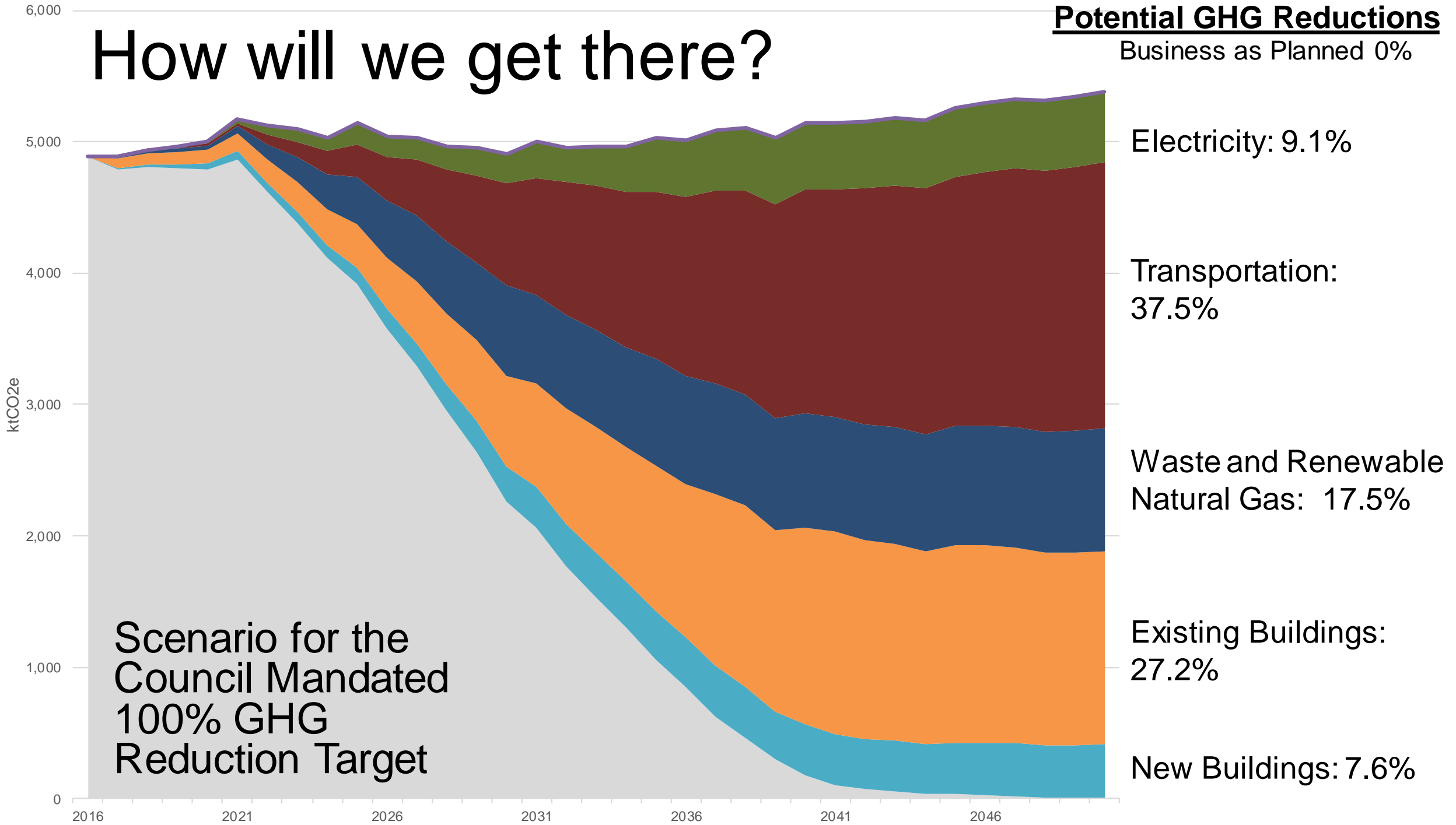


Produce the Model

How will we get there?

Potential GHG Reductions

Business as Planned 0%



Electricity: 9.1%

Transportation:
37.5%

Waste and Renewable
Natural Gas: 17.5%

Existing Buildings:
27.2%

New Buildings: 7.6%

Scenario for the
Council Mandated
100% GHG
Reduction Target

The MEP and Electricity

- To reach the 100% GHG reduction target, electricity must be carbon free. This requires renewable generation to offset the GHG content forecasted to be in the provincial bulk supply. To achieve this, the model calls for the following capacity for Ottawa:
 - 3.2 GW of wind
 - 1.1 GW of solar
 - Some additional hydro power
 - 0.7 GW of storage configured to enable renewables
- To supply transportation and heating, electricity demands of the City double by 2050

Project: Cogen Redevelopment at the Wastewater Treatment Facility

- The Cogen redevelopment was concurrent with the development of the MEP, we made sure the two plans were harmonized
- Reason for project:
 - Existing Co-gen engines reaching and electrical infrastructure reaching end of life
 - Existing Co-gen and boiler were becoming undersized with some biogas flaring
- Paid from reserves from the Water Services rate base



Cogen Redevelopment – Benefits and Plans

- The Cogen re-development allows our sewage treatment plant to electrically island almost indefinitely, thereby preventing a release of partially treated sewage during a power failure
- Has a 14.5 year simple payback and good reductions in GHG's
- The site has scope for further development, so a Biogas Optimization Study is under way:
 - Ideas to increase gas production: feedstock, importing local biogas, power to gas
 - Ideas to optimize production
 - Uses for Biogas (RNG to gas grid, on site use, vehicles etc.)

For more information

Energy Evolution

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