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# **May 26th, 2017**

# **Clean Air Council Meeting Notes**

# **Topic: Community Energy and Climate Action Plans**

**Presentations**

**Neetika Sathe, Alectra: Powerhouse Feasibility Study**

Goal is to understand how to harness the power generated from these homes and add it to the local grid. This would not have been possible if it were not for the presence of new technologies providing a two-way communication between behind the meter and the utility company. This program resulted in a two-fold benefit; as it is able to provide a clean energy source to the grid and acts as a buffer for peak demand hours.

* The feasibility study addresses technical needs, current technical capabilities, customer value to the provision of the technology, and cumulative net benefit of the proposed PowerHouse expansion.
* The completion of the first phase of the Powerhouse pilot occurred this past April 2017. This project was possible due to the financial support of IESO. The pilot consisted of 20 homes that contain solar panels on their roofs and a battery within the home, all matched according to the size of the home.

## Parameters of the Power House Report:

Geography: focusing in on the Markham/Richmond Hill area because of their foreseen population/energy load growth demands.

Data was collected over an 8-month period thus far

Timeframe: the report will encompass 15 years worth of information gathering (2016-2031): the average battery life runs for 10 years, and the solar panels have a lifespan of 15 years. Assumptions of battery degradation are taken into consideration.

Configuration: large homes contained a 5kW solar system and an 11.4 kWh lithium battery. Semi-detached and town homes had 3kW installed on the roofs and a 7.7 kWh battery. The energy/saving results may vary according to different models.

Financial Expectations: Customers pay an upfront cost and monthly payments; the model allowed customers to obtain a 5-year pay back period using market-based pricing, funding covered the remainder of the costs. Customers become interested in this model if the payback period was under a 7-year period. The ‘sweet spot’ is selling a payback period on investment between 3-5 years. Break even cost: estimated to occur in the year 2020.

Partnerships: IESO, Alectra, Sunverge (technology provider), RBI (Installer), and Savage Data Systems (Data Analytics Company).

Business-as-Usual Model: the project has the potential to reach an uptake of 30,000 solar panel units installed, equalling 140 MW of dependable energy capacity. As of now, there is a limited amount of solar panel installers, making it difficult to reach this target at this point in time—this will be an incremental uptake/process (s-curve type graph).

* To arrive at the business-as-usual energy capacity total, all possible known factors are taken into consideration: age and size of the roofs in the market, technical feasibility, how much the market is willing to invest, whether the participants own or rent their houses, and access to the internet)

Local dependable MW: uses basic math to estimate the duration of energy supply to a home according to the energy use (demand), the amount of energy stored in the battery (capacity), and the rate in which the energy is able to flow out of the battery for use (intensity). The total local dependable MWs is illustrated to incrementally increase over time (s-curve type graph).

Ride-through*:* the relationship between the rate at which the electricity is being released by the battery and the length of time the customer demands. This concept is necessary to understand if transformers are to be replaced by this model. It is agreed that the Ride-through should be at least 3 hours long (takes into consideration the duration of demand peak hours).

De-carbonized Economy Model: The implications of achieving a de-carbonized economy suggest that approximately 57,000 solar panels need to be installed—equalling a total amount of 261.4 MW dependable energy capacity by 2031. To arrive at the de-carbonized economy model energy capacity total, all previous factors mentioned in the business-as-usual model are taken into consideration, the additional factors considered for this calculation include: elasticity price sensitivity to the customer’s desired 3-5-year payback period.

Future Financial Consideration: Customer interest/awareness and regulatory changes have the potential to change the current customer upfront payment model; as well as, influence the popularity of this type of energy solution. Other financing opportunities are possible i.e. LIC, Utility Capital Cost Investment Model (where the utility owns and rents out the solar panels/battery to the customer for a monthly fee. The utility is responsible for the maintenance; this can also lead to a longer product life span)

Transmission Distribution Deferral (Tx/Dx): Is the amount of energy being stored in the batteries that have the potential to decrease energy demand load during grid peak hours. This type of energy provision decreases the stress placed on the grid when energy demand exceeds energy supply—Results indicate that lower energy load growth corresponds to a higher Transmission Distribution Deferral and vice versa.

Cumulative Net Benefits:

In the first 15 years, customers experience a negative Net Present Value (NPV) as they acquire and pay back their assets. After these 15 years, there is a slightly positive trend but not significant enough to start investing in projects similar to PowerHouse as of now.

Enabling/Limiting Factors for PowerHouse implementation:

Depends on regulative changes, the amount of money invested into the residential sector, levels of awareness/wiliness of the consumer, and the availability of installers/electricians. These all influence the overall trend in regards to NPV. Technical side: This pilot depends on an increase in technological incorporation (this highlights a potential focus for demand management strategies). This study also acknowledges that future technological costs will decrease over time making this energy model more feasible.

Next Steps:

This Powerhouse model should be considered in a Tool Kit for Utility/Municipal/Regional Planning in regards to asset management and the promotion of low growth planning.

How: There needs to be an increase in revenue for residential access to assist in helping pay for upfront costs, generating interest within the Ancillary Service Market; and, consider incorporating third party metering. This model and study promotes an integrated solution. **The full report can be found at** [**Alectra.com**](https://www.powerstream.ca/innovation/power-house.html)

**Work in Progress—Aspects not considered in the report but have the potential to improve the model:** thermal storage, building participating homes as Net-Zero certified, considering participating homes as ‘electrical hubs’ for electric vehicles, and using the solar energy for heating purposes. There is a potential to develop a PowerHouse+ standard that would incorporate heating, electricity, and transportation components into the overall design of the model. The presence of smart technology makes this integrated energy solution possible.

#### Is there a monetary value attached to the ‘reliability benefit’ associated the program’s long-term estimated NPV savings?

This business case was developed on a traditional cost, savings, revenue model but while co-benefits are recognized they were not quantified as such the NPV does not include GHG savings, onsite outage protection, and the newly released hydro plan implications—this report is prudent in its business case analysis to avoid discussions related to valuations put onto co-benefits.

**Ian McVey, TRCA: On the Path to Net Zero Communities: Integrating Land Use and Energy Planning in Ontario Municipalities (Video Presentation @ 1:15:25)**

* Funded by the Ministry of Municipal Affairs, this report provides a set of case studies that may influence new developments to consider Net Zero standards. This is the first installment put forth from the Community Energy Knowledge Action Partnership (CEKAP), which presents academic research to civil society and other governance partners.
* Ontario is interested in undertaking an energy transition away from intensive GHG emitting practices. There is a focus on the building sector as it has the biggest potential to reduce GHG emissions when compared to other sectors where energy and emissions are significantly more difficult and costly to reduce.
* Policies found within the Climate Change Action Plan and the Growth Plan for the Greater Horseshoe indicate an objective to promote net zero communities—a goal has been established to start developing net-zero homes, at a mass scale, by 2030. This implies a stronger leadership role for municipal land use planning and local energy utilities.

Objective: to provide a practical definition of net-zero that is applicable to Ontario and evaluate the role of municipal policy & planning in facilitating net-zero community development.

Methodology: Literature Review—five case studies are highlighted showcasing net-zero developments proposed or in-progress (Sheridan Davis Campus in Brampton, Port Lands in Toronto, West 5 in London, Zibi in Ottawa, and Guelph Innovation District in Guelph).

Net-Zero Definition: Net Zero must incorporate a balance between the production/consumption of energy/carbon/emissions; there are various variations as to how to offset these factors. Risk: Due to the plethora of net-zero definitions, this can result in a misunderstanding of what constitutes ‘Net-Zero;’ and therefore, make it more susceptible to false marketing claims.

The report establishes four criteria in which to organize all the current net-zero definitions based on:

* Prioritization: of either energy/carbon/emissions
* The scale of interest: focuses on the individual building level or at the community level i.e. electrical/thermal micro-grid;
* Scope: addresses the number of sectors being incorporated in the net-zero calculations;
* Boundaries: addresses geographical limitations put on site vs. source carbon emissions (local, regional, international).

### Municipal ‘Nested’ definition for Net-Zero:

**Priority:** energy-related GHG emissions

**Scale:** Community level

**Scope:** it will focus on municipal services (water/waste water services) and transportation services, using the Municipal Act, Planning Act & PPS

**Boundaries:** there would be a limited use of offsets, source-based emissions accounting (based on the energy generation, transmissions, distribution pathway implications) that will push municipalities to consider regional-scale implications, and boundaries would not include ’embodied energy’ associated with the creation of building materials.

Analysis of Energy and Land Use Planning Framework

Interconnections between the provincial energy planning system, the municipal land-use planning system, and the regional land-use planning system.

Results indicated that the definitions for Net-Zero within the framework is lacking: clarity of priorities, lacks consistency in regards to scale; and, lacks certainty, as PPS is not mentioned.

 The Municipal Planning Act (which is undergoing its third reading).

### London West 5:

**What:** Greenfield development that contains rooftop solar on top of the residential and commercial buildings and air sourced heat pumps. This solar power is connected to the grid and is able to supply energy during peak demand hours. During off peak periods, this energy supply is stored. This is a type of a microgrid solution focused on achieving Net-Zero Energy.

**Where:** at the edge of London

**Who**: The property developer initiated this project due to his interest in energy sustainability. They collaborated with an energy developer (S2E) and London Hydro.

**How:** The developer owns all the appliances and the homeowner pays a leasing fee every month for maintenance.

**Status:** A success. The developer took on a leadership role to spread awareness of the project within the community; they were able to influence planning bylaw amendments in their favor as well.

### Guelph’s Innovation District:

**What:** District Energy System

**Where:** East of the University of Guelph Campus

**Who:** Largely provincially owned by Infrastructure Ontario. This was a city-led initiative using a secondary plan, which endorsed a carbon-neutral objective.

**Status:** There has been some misalignment between Infrastructure Ontario and the City, as it is not certain whether Infrastructure Ontario will continue to support the net-zero objective in their land distribution process.

Brampton’s Sheridan College Davis Campus

**What:** College focused on revamping their natural gas powered steam district energy system in order to leverage their invested capital to extend its network to include new buildings, especially a newly developed community center.

**Where:** Southern edge of Brampton

**Who:** Energy manager of the campus, facility manager for the community center/ice rink, developer for high-rise buildings

**How:** College developed a Climate and Energy Master Plan with very ambitious energy targets

**Status:** The urban planner for the City of Brampton was not aware of the campus’s Climate and Energy Mater Plan and its implications. This highlights the lack of communication/coordination that tends to occurs between community stakeholders and different departments within the municipality. This is a replicable model as there is an increasing amount of universities have district energy projects and have the potential to expand outwards.

**Toronto Port Lands**

**What:** The net-zero objective was developed when the Toronto Waterfront area was created. The goal was to establish an area-wide district energy plan to promote throughout the Pan Am Games.

**Where:** Toronto Harbour front area

**Who:** The government of Ontario agreed to provide the capital investments but backed out in 2010. Since then, the City of Toronto has been in charge of funding.

**How:** Developed through a Community Energy Plan. There are also zoning by-laws in certain areas that require being connected to the district energy network for specific buildings that surpass a certain size.

**Status:** Since the province is not supporting the full-scale area-wide connection to district energy, there are small nodes being developed. This case study highlights the innovative pathways in which the City was able to get around promoting district energy at an individual building scale.

Ottawa’s Zibi

**What:** Developed on existing hydro and thermal networks that were established during the industrial era of the area. Now, it is primarily commercial and residential.

**Where:** Located on the Ottawa River—half in Gatineau and half in the City of Ottawa

**Who:** All three levels of government are involved, due to the municipal partnership with Hydro Ottawa.

Suggested Roles for Municipalities, Province and Development Community:

Municipal Role: support a high-level policy context, use the authority provided by the Planning Act and the Municipal Act to incent low carbon and net zero development, take advantage of major redevelopment area opportunities to promote policy and technological innovation, and support business model innovation.

Provincial Role: Incorporating the above-mentioned objectives into building code; enable municipalities to require beyond building code-minimum in new development and major development. Revise energy planning and regulatory framework to enable innovation within the Local Distribution Company (LDC) business models, invest in community energy solutions, promote multi-level collaboration, and focus efforts in improving workforce training and skills development.

Developer Role: engage in early adoption with key municipal stakeholders, demonstrate marketability of net-zero communities, and collaborate with utilities on micro-utility business models.

#### What would a Net-zero Energy path consist of?

There would be two models; one that incorporated High-performance buildings with renewable energy sources but without an opportunity to connect to a thermal network; a community based net-zero approach would have to incorporate more shared solutions and therefore build upon the initial model (thermal networks would be considered). The consequential benefits to the community-based approach would be the increased equity implications and energy-based resilience.

#### Within the Case studies, were there any municipalities that were two-tiered?

Yes, Brampton and London. The presence of a two-tiered model did not show any significant results in their capacity to influence development compared to municipalities that did not have this model.

#### During the Literature Review process, what role did density play in influencing the promotion of Net-Zero?

The literature review process for this report focused on the transportation sector and thermal energy solutions. There was an underlying assumption that the measurement of density determines thermal load, which would determine the viability of a district energy system. Densities were not analyzed beyond this assumption throughout the case studies mentioned.

#### Are there conversations revolving around how new construction of buildings could be motivating retrofit projects?

New construction buildings have the highest potential for achieving the highest performance of reduced energy/carbon emissions when compared to retrofit projects. As such the new buildings will have to outperform older buildings in order to help us achieve the ghg reduction targets that have been set for Ontario. It doesn’t address the need to address the reduction opportunities of the existing building stock where we know that there will have to be extensive work done to enable existing buildings to be able to reduce their ghg emissions. Well over 90% of buildings that will exist in 2030 are building that havealready been built. The economic and technical challenges of getting an existing house to be able to be net zero are far more than for a new house that can be designed and built for that at the start.

This is a very interesting question and one that is not considered in the report; it would be very interesting to see if there is such a trend.

**Daria Smeh, LoyalTeam: Covenant/Compact of Mayors - Successes, Challenges and Lessons Learnt from Canadian Municipalities (Video Presentation @ 1:49:23)**

* In January 2017, the COM merged with the EU Covenant of Mayors to become the Global Covenant of Mayors. Global Covenant of Mayors is a global political coalition founded on acquiring commitments from municipal political leaders to undergo the calculation of their GHG emissions in a standardized method; set targets/metrics for GHG reductions; and, develop an integrated Climate Action Plan that addresses how the adaptation and mitigation actions are to be implemented.
* LoyalTeam Environmental is a third party consulting organization in charge of reporting back to the Global Covenant of Mayors regarding the successes, challenges, and lessons learned from Ontario COM participants, during the initial stages of the program, in order to address areas that need improvement.
* The feedback gathered will be used to facilitate the processes associated with municipalities taking on more authority and leadership regarding climate change action—a growing trend not thoroughly analyzed and one that can be transferable between initiatives.
* All Ontario COM participants received a survey and was completed by December 2015. Fourteen out of twenty-one participated. A follow-up interview will be scheduled within this year to supplement the findings. Follow-up consultations with the Mayors is intended—It would be beneficial to consider how the initial commitment from the mayor increases the possibilities for the implementation of climate action to take place during the later stages of COM.
* Most participants have completed the inventory stage. The average time to complete the GHG inventory ranges from 6-12 months. The most common suggestion received by the survey to communicate to municipalities is to start GHG inventory as soon as possible since it is time intensive.

### Factors that influence the successful completion of the GHG inventory:

Human and technology capacities*:*

* 80% of municipalities have approximately 1-3 staff members that possess the capability to complete any phase of the COM.
	+ Findings illustrated that population size of the municipality did not determine their capacity to complete work.
* 64% of municipalities have 1-3 staff with technical skills to do work for all the phases of the COM.
	+ 87% of these municipalities are medium to large sized (+200,000-population size).

Hiring outside Assistance: Although municipalities have the capacity to use internal staff, most municipalities hire consultants to complete work.

* The highest demand for additional help occurs during the inventory development stage
* The second highest demand for additional help occurs during the development/implementation of the Integrated Climate Action Plan
* The stage that has the lowest demand for external assistance is the development of Adaption and Mitigation targets/metrics to implement.
* Analysis of data is not the main inhibitor of completing the inventory; instead, it is the time intensive process of gathering all the information together.

**The study did not take into account municipalities that signed the commitment but were not able to complete the requirements of the COM—a limited internal capacity to do all the work has been a mayor issue.**

Critique: People have liked this program but guidance is limited. Municipal participants have tried to contact COM but have not received any feedback on questions/concerns. Another major challenge that municipalities face is access to financial support.

Suggestion: Another method to complete COM is to have internal staff complete the GHG models and have them reviewed by professionals; this process was informative for the municipal members in charge of creating the models. This would be the most financially inexpensive method compared to having a consultant undertake the entire workload associated at each step.

#### Two online tools used for GHG modelling:

ICLEI’s tool provides a very basic model that can get discussions started—Ajax has used this tool and has had a positive experience. The CDP is another online tool, which is more labour-some to acquire results. The drawback to using various tools is resulting in various different types of models/output data, which can be confusing when presenting back to council.

## Inventory Successes

* + - Municipalities liked the global commitment approach
		- The program is very specific and municipalities are able to achieve their established targets more quickly.
		- Enables communication with participating COM members nationally and internationally.

## Inventory Challenges

* + - Time intensive
		- Participants felt frustrated, especially when there is limited guidance.
		- Duplication and/or differentiation between various Climate Action Programs (MEP, PCP, CDP, COM)
		- Re-elections of the municipal council: integrated planning needs is to be established to keep future mayors participating and on track. This would limit any political barriers that arise in consequence to changes in political focus.

## Next Steps

* + - COM should enable further communication with GPC to increase communication with municipal leaders around the world.

**The evaluation and feedback report for the COM report is to be released by the end of 2017.**

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**Vivian Chung, TAF: Building Energy Efficiency Policy Calculator (Video Presentation @ 2:19:54)**

TAF developed an Energy Efficient Calculator Tool for Buildings that provides a rudimentary analysis on municipal energy policy, in regards to:

* + - energy reductions
		- cost saving measures
		- Equity implications

The calculator is able to estimate the implications of grouped policies through comparative and sensitivity-based analysis—comparisons between policies highlight different levels of aggressiveness within a timeframe of 2018-2050. It is important to note that the Calculator does not take into account the cumulative effect of integrating various policies together. Computed assumptions are based on case studies documenting energy reductions, job creations, energy savings, and energy poverty.

**This Energy Efficient Calculator Tool is not compatible with any Mac/Apple software**

Goal: to start generating general discussions/dialogue regarding municipal energy concerns.

Scope: National level

Format: Excel file

Complimentary Documents:

1. How-to-Guide
2. The methodology of how energy and GHG emissions are calculated behind the scenes.

### Output Results:

* + - This Calculator is programmed to provide up to 18 different scenarios for one municipality at a time.
		- Users are able to save the results as a separate workbook file if a comparison between municipal scenarios is required.
		- The user is able to get results regarding energy reduction and adaptation roles on an annual basis.

## The layout of Energy and GHG Calculator:

Introduction/Overview: includes information regarding the interpretation of regulations relating to energy and GHG.

Main Page: the user is able to input parameters. Click on red flags to acquire more information i.e. access to policy summaries that highlight factors/parameters. It is important to input the year in which the policy would come into effect. Information that is required from the municipality consists of known floor area, utility rates, costs etc.

* If a municipality is not found in the drop down list provided on the main page, the user is able to fill in required information manually through a questionnaire provided on the main page of the calculator. There is also a possibility to update your own municipal profile/background information if there has been a recent update.

Summary Page: illustrates finance results, energy results, policy results in chart formats etc.—up to 9 different graphs. All graphs have a comparison with business-as-usual baselines and the policy scenario-based result.

Save File: there are two options to save the excel file; it should be saved as a macro book if you would like to continue adding different policy implications (recall that you are able to compute up to 18 different scenarios). If you just want the results saved and are done inputting different policy parameters, then saving the sheet as a regular excel file is sufficient.

Feedback: TAF is looking to analyze any results that have been generated by the calculator. Please send results by clicking the “send results to TAF” on the summary page. The results would be sent as a confidential email.

Next Steps

TAF is to lead a webinar consisting of answering any questions regarding the Building Energy Efficient Calculator Tool, and direct a dialogue around how to make this tool cumulative in regards to provincial and federal policies implications.

**Tim Short, Net Metering: How it Works, Challenges and Opportunities & Integrating GGH and Electricity Considerations**  **(Video Presentation @ 3:16:17)**

The basic understanding of Combined Heat and Power (CHP) is relevant to solar, storage and wind energy integration to the grid.

* CHP and Co-generation (Co-gen) are essentially the same concepts.
* The analogy to understand CHP/Co-gen: A car produces two types of energy—mechanical, the engine propels the car forward or backward; and thermal, waste heat emitted from the motor engine and provides heating for the passengers inside.
* Finding ways to capture and use waste heat as another energy source is central to CHP

## Comparison between CHP vs. Separate Heat and Power (SHP)

Separate Heat and Power generation consumes 30% more energy supplied by the energy source (natural gas) and uses this energy at an overall efficiency rate of 58% power.

A CHP generator consumes 30% less natural gas than an SHP, at an overall efficiency rate of 75% to power one combined electrical generator and boiler. This has significant implications as to the amount of initial natural gas burned to provide the same service (Heat and electricity).

There is a 12% difference in energy efficiency between an SHP and a CHP. **It is important to know the difference between average vs. incremental generation. In order to do this, a basic understanding of a Load Duration Curve is required.**

## Observations:

To understand the electricity sector, one needs to understand that the grid operators have to balance the energy supply with energy demand: when the energy market is off-balance, the grid becomes compromised.

* Nuclear provides the largest energy supply throughout the entire year. It is classified as a baseload energy source—approximately 12,500 MWh of energy for the year.
* Hydro is the second biggest baseload energy supplier to the grid. Together, nuclear and Hydro make up approximately 64% of all the energy supply to the grid.
* Coal production has been eliminated from the energy supply. If policies favor the continuation of Nuclear and Hydro energy supplies, this means that the consequential decrease in energy supply would have to come from the solar/wind/geothermal inputs.

#### Unknown Variables that hinder the Incorporation of CHP and Solar Energy

* Grid operators are not aware of where the construction of CHP generators are occurring; only the local utilities have this information.
* Signed contracted agreements between the CHP generating buildings and the local utility/grid operators are non-existent. This means that the CHP generating infrastructure is not obligated to supply a set amount of energy to the grid when required without any financial consequences for non-participation. Both these factors impose a huge risk to the overall integrity of the grid and this cannot be acceptable.
* Ontario has reached an electrical demand peek of 27,000 MW. The overall capacity for all the natural gas thermal supply in Ontario measures 80,000 MW. Air Source Heat Pumps combine both electric and thermal energy sources to power.
* Grid operators consider any solar and CHP installments as void and continue running the gas peaker plants. During sunny days, the solar installments will decrease energy demand but unless there is coordination with the overall central grid the natural gas plants will not be turned off—this could lead to unnecessary ghg emissions.

**Next Steps and Comments**

* Future development of CHP plants should be constructed to meet the required thermal load for the integrated building.
* Further integration of CHP and Solar energy sources are limited by institutional barriers:
* There is a learning curve and a resistance curve that is associated with a diversified system with distributed energy systems because this is a harder system to manage than just that central generation – grid transmitted system that has been in place for the last half century.
* This distributed energy system is possible as several European countries are successfully running their energy systems in this manner.
* Natural gas systems are going to play a significant role in providing energy as the Pickering Nuclear Power Plant eventually becomes decommissioned, and Bruce and Darlington Nuclear Power Plants undergo refurbishments. This will likely result in a increase in the ghg coefficient resulting from electricity production.
* An integrated energy approach should be implemented instead of depending on natural gas and nuclear energy supply in isolation.
* Conversations around incorporating renewable natural gas collection projects from municipally run wastewater treatment plants and green bin programs are being held.
* Enbridge is currently constructing a hydrogen/electrolysis plant. When there is a surplus in energy, the electricity splits the water molecule and the hydrogen gets stored to produce up to 2MW of electricity available on demand.
* Future considerations to mix the collected hydrogen with the C02 by-product of the wastewater treatment plants and the green bin program create a man-made natural gas fuel option—a viable alternative to the fossil fuel based natural gas.

**Ministry of the Environment and Climate Change:  Municipal Guidance and the Coordinated Provincial Plans Review and the Municipal Action Plan Program (MAAP) (Video Presentation @ 3:52:02)**

For at least this past year the provincial government has been reviewing the following Land Use Plans applicable for the Greater Golden Horseshoe area (It has been released this past Friday):

1. Green Belt Plan
2. Oak Ridges Moraine Conservation Plan
3. Growth Plan
4. Niagara Growth Plan

Section 4.2.10 of the Growth plan addresses the direction to address Climate Change by mandating municipalities to incorporate climate change adaptation and mitigation policies into already existing land use plans.

* Guidance for how to do this will focus on providing resources and best practices, areas of focus, outline performance measures, and establishing monitoring and funding mechanisms to assist municipalities along this process.
* Guidance Outline will be submitted by the consultants to the MOECC by June.
* The draft guideline will be available on the Environmental Registry for broader public consultation opportunities by September.
* Ontario’s Climate Change Action Plan released in June 2016 committed to supporting municipal climate change action and community energy plans; this is most commonly referred to as Municipal Action Plan Program.Its purpose is to target municipalities that do not have the above-mentioned plans to have all municipalities on board in establishing GHG inventories, GHG targets and selecting and acting on actions that contribute to that target.
* The province is still uncertain as to the level of detail municipal inventories should acquire (Convent of Mayors incorporates aviation into their scope, which is very advanced). More discussions need to occur with SSG in order to indicate the type of data municipalities would require.
* Monitoring programs regarding compliance of long-term and short-term climate change plans have not yet been developed.

## Updates:

* The Guidance does not specify what role upper tier and lower tier municipal bodies are responsible for.
* The Planning Act has been amended to mandate municipalities to incorporate Climate Change into their Official Plans.
* The Province will soon be amending The Planning Act to establish Climate Change as a Provincial interest.

## Funding:

**MAPP:** provide funding with detailed instruction on how to develop GHG inventories, targets, and plans to achieve targets (this funding is not to be used to update the Official Plan itself). It prepares municipalities to receive other forms of funding once completed.

**Municipal Challenge Fund**: organized into two main tiers: one tier will be available for municipalities that do have a Municipal Energy Plan and want to start the implementation process, the other tier will be available for municipalities that do not have an MEP. Municipalities that apply and receive funding for the first stream may also apply for funding for the second stream once they have successfully completed the MEP.

**Municipal Energy Plan Program:** 20 municipalities have signed up to participate seven have completed the MEPP to date. Plans are voluntary and focuses areas in the residential, commercial/industrial, and transportation sector. It revolves around the development/establishment of a GHG Inventory in order to support other supplementary energy/planning policies that incorporate climate change implications. The ministry is accepting applications on an ongoing basis.

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| --- | --- | --- | --- |
| **Funding Stream** | **Amount**  | **Program Requirements** | **Years to Complete** |
| Municipal Energy Plans | Up to 50% of eligible costs and up to a maximum of $90,000.00 per community. | -Stakeholder engagement -Gathering/analysis of baseline data-Creation of MEP | 2 years |
| Enhance Existing Energy Plan  | Up to 50% of eligible costs and up to a maximum of $25,000.00 per community. | -Plan related studies-New energy mapping-Initiatives supporting implementation-Additional public consultations | Up to a year |

**Links to the application materials:** [**http://www.energy.gov.on.ca/en/municipal-energy/**](http://www.energy.gov.on.ca/en/municipal-energy/)

**MEP program staff can be reached via email at** **MEP@ontario.ca****.** This type of funding can be compounded with other types of funds

* Do not wait to make a Plan. It takes two years to develop a Plan and it opens opportunities for further financial support by the province.
* Guidelines should be focused on achieving higher targets (like TransformTO example).
* Provincial proxy targets are not reflexive of municipalities regarding transportation, as they vary. This is important to note as this sector shows the greatest growth and as such the highest potential to reduce GHG emissions.
* There should be a focus on developing collective action; developing specific action plans to create one plan and a 5-year budget between various municipalities—Cohesion results in more impactful results.
* Federation of Canadian Municipalities provides up to $175,000 to promote municipalities to develop a community climate/energy plan.