Ontario's Long-Term Energy Plan

Seeking Indigenous Perspectives

Indigenous Engagement Workbook

A Workbook and Companion to "Planning Ontario's Energy Future, a Discussion Guide to start the Conversation"

Ministry of Energy

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1.0 Introduction

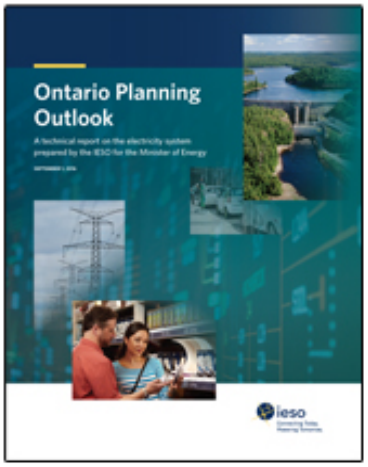
People living in Ontario want energy that is reliable and affordable, and clean. Planning for this should include the voices of the people who live here and know the needs of their communities today and for the future.

The government engages on energy issues with people and communities across the province every day. In 2010, the government implemented a long-term energy planning process to ensure that a "Long-Term Energy Plan" (LTEP) was in place and updated regularly to reflect changing energy needs and priorities. The LTEP is a road map that sets out the direction for Ontario's energy future for the next 20 years.

Ontario's first LTEP was completed in 2010, and focused on electricity. LTEP 2010 forecasted Ontario's expected electricity needs until 2030, and established what the most efficient ways were to meet these needs. The development of the 2013 LTEP involved the most comprehensive engagement process the Ministry of Energy has ever undertaken, including 10 Indigenous sessions with approximately 250 participants. Representatives from nearly 100 Indigenous communities and organizations attended those meetings.

Given the importance of this work, the government recently passed legislation to ensure the LTEP is developed in a transparent way that ensures Indigenous engagement is built into the process. The *Energy Statute Law Amendment Act, 2016*, ensures that electricity planning takes a transparent and pragmatic approach, and that future LTEPs consider cost-effectiveness, reliability, clean energy, community and Indigenous engagement.

To better understand the technical considerations for energy planning for the next LTEP, the government asked its agency, the Independent Electricity System Operator (IESO), to develop a public technical report, *the Ontario Planning Outlook*, that provides a 10-year review and a 20-year outlook for Ontario's electricity system. This report was provided to the Minster of Energy on September 1, 2016. The government also commissioned a consulting firm, Navigant, to write a *Fuels Technical Report* focused on current and forecasted supply and demand for fuels in the province such as oil and natural gas.



The Fuels Technical Report can be found online at http://www.energy.gov.on.ca/en/archive/fuels-technical-report/

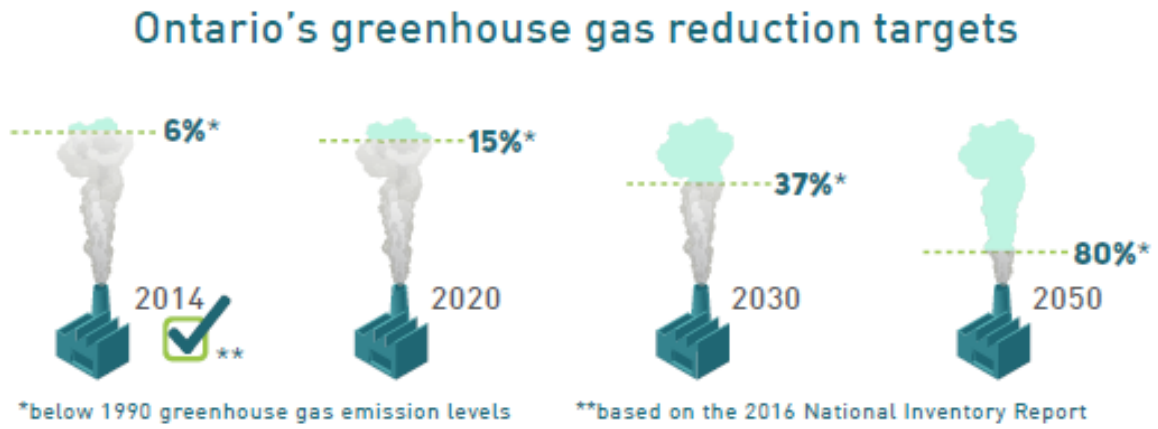
This ***Seeking Indigenous Perspectives: Indigenous Engagement Workbook,*** features information drawn from the Ontario Power Outlook and the Fuels Technical Report, as well as information about Ontario's energy system and the long term energy planning process. Most importantly, it also includes key discussion questions to guide the Ministry of Energy's engagements with First Nation and Métis communities as we update the LTEP. We hope to gather feedback from participants about their communities' energy needs, interests and priorities.

1.1 Energy Use and Climate Change

Ontario released a five-year *Climate Change Action Plan* (CCAP) in June 2016 to help address climate change. The CCAP outlines the approaches the government intends to take to reduce the province's carbon emissions. This plan could significantly affect how energy is used in our province by reducing

the use of fossil fuels, such as diesel, oil, gasoline and natural gas, through conservation, energy efficiency and fuel switching, while increasing the use of clean electricity, renewable energy, and clean fuels. The Ministry intends to consider climate change as part of Ontario's energy planning.

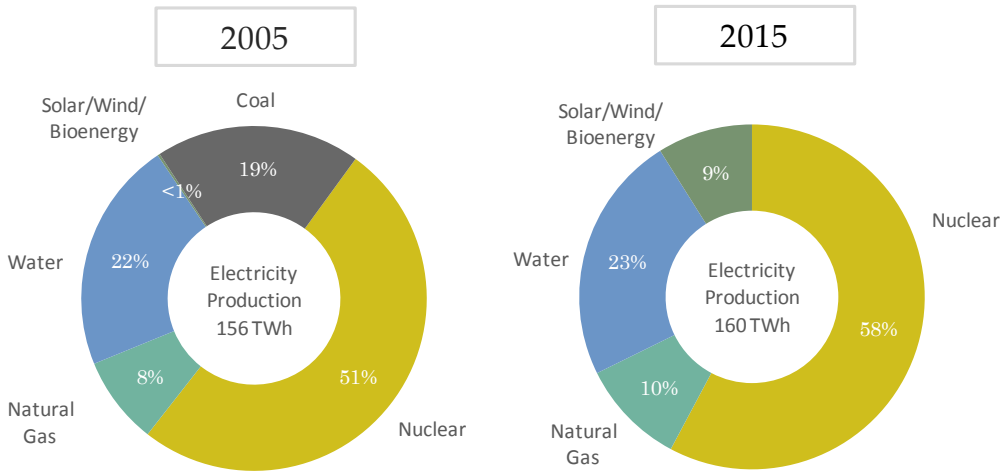
CCAP includes actions on energy planning with Indigenous communities, such as opportunities related to energy transition to non-fossil fuels, connecting remote communities to the electricity grid, and/or developing microgrid solutions in communities.



1.2 Towards a Broader Energy Focus

The province relies on a number of sources to give it the secure and reliable supply of electricity it needs, including nuclear, natural gas and renewable generation such as hydroelectric, wind, solar and bioenergy. The province's supply mix must be flexible to respond to changing needs. In order to reduce the GHG emissions that cause climate change and improve Ontario's air quality, Ontario closed five coal-powered generating stations, and invested in new and refurbished generating facilities to replace the closed facilities.
In 2015, nuclear generation provided the biggest share of Ontario's electricity supply, producing 92.3 TWh of electricity. That was followed by hydroelectric generation which provided 37.3 TWh, natural gas which supplied 15.9 TWh,

and non-hydro renewables such as wind, solar and bioenergy that provided 14.2 TWh. Since the 2013 LTEP, the share of wind, solar and bioenergy in our supply mix has grown from 9% to over 18%.



Three-quarters of the energy used in Ontario comes from hydro-carbon based fuels such as oil and natural gas. For many northern communities not connected to the provincial electricity grid, diesel fuel is the main source of energy. These conventional fossil fuels need to be included in energy planning. Given the province's emission reduction goals, as outlined in the Climate Change Action Plan and its enabling legislation, the province intends to consider energy needs and how the uses of electricity and fossil fuels influence each other.

Additional Materials and Participation Opportunities

Ontario Planning Outlook:

www.ieso.ca/Documents/OPO/Ontario-Planning-Outlook-September2016.pdf

Fuels Technical Report:

http://www.energy.gov.on.ca/en/archive/fuels-technical-report/

Climate Change Action Plan:

www.ontario.ca/page/climate-change-action-plan

List of Stakeholder sessions, Public Open Houses, Telephone town hall sessions are available at www.ontario.ca/EnergyTalks

The online survey, talks tool and the power play interactive game are at

www.ontario.ca/EnergyTalks

2.0 Relationships

Ontario recognizes that Indigenous people have a special relationship to the land, including energy resources. There are over 150 First Nation and Métis communities in Ontario, many with credibly asserted or established Aboriginal and treaty rights. Energy activities potentially affect these rights, as well as the socio-economic wellbeing of communities. Indigenous communities across Ontario also face unique energy-related challenges, which often have complex historical, jurisdictional, geographic and regulatory contexts.

The First Nations-Ontario Political Accord, signed on August 24, 2015, created a formal bilateral relationship framed by the recognition of the treaty relationship. The Accord commits the parties to work together on issues of mutual interest, including resource benefits sharing and jurisdictional matters. The Ontario-Métis Nation Framework Agreement, signed in 2008, commits the parties to also work together to improve the cultural, economic and social well-being of Métis in Ontario.

The First Nations-Ontario Political Accord and the Ontario-Métis Nation Framework Agreement are two examples of the province's commitment to relations and reconciliation with Indigenous communities.

3.0 Indigenous Successes in the Energy Sector

The Ministry of Energy is committed to encouraging opportunities for First Nation and Métis communities to play an active role in the energy sector, with a focus on electricity sector initiatives such as conservation, generation and new, major transmission projects.

The following section provides an overview of recent electricity contracting initiatives with incentives for Indigenous community participation. It also outlines current support programming aimed at building community energy capacity and encouraging partnerships on electricity infrastructure projects.

3.1 Renewable Energy

There are now nearly 60 First Nation and Métis communities and groups involved in over 1,800 megawatts (MW of) wind, solar and hydroelectric projects across the province.

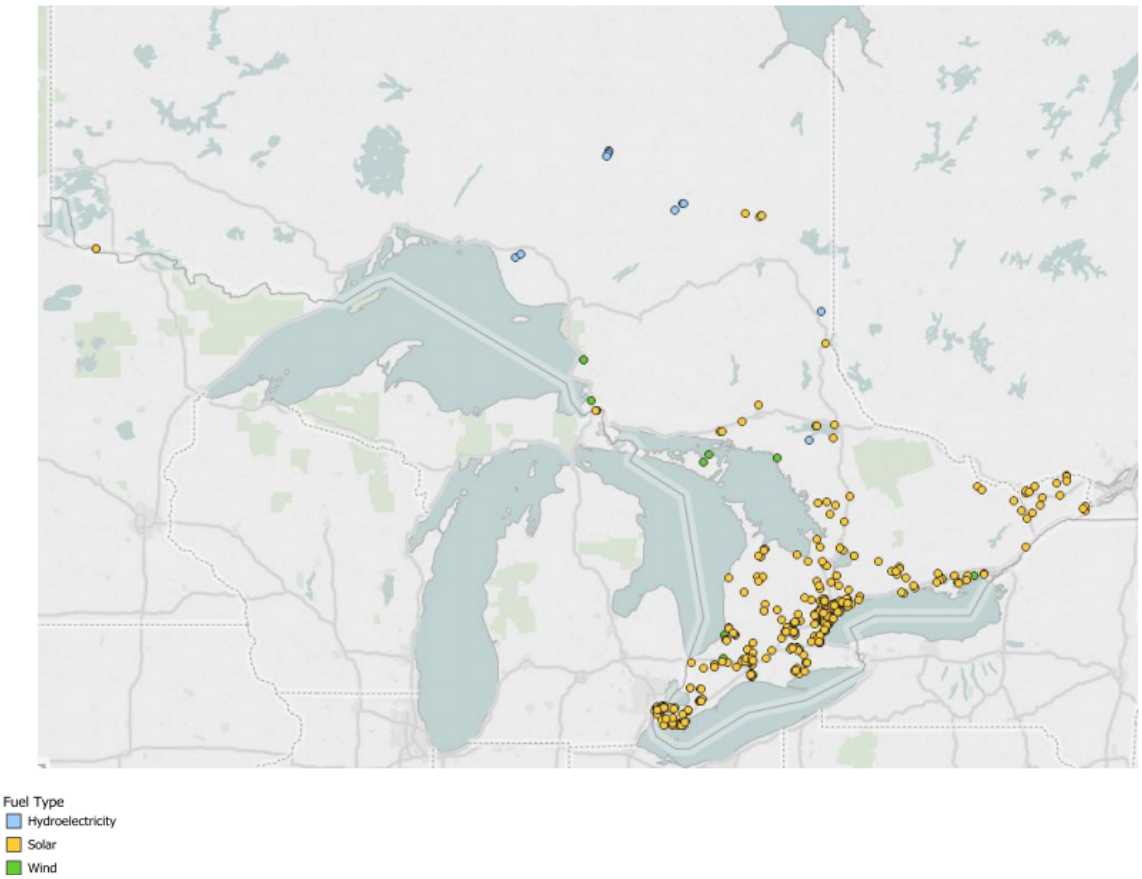
Feed-in Tariff (FIT) Program

The feed-in tariff or FIT was a standardized way to contract for renewable energy generation. It provided standardized program rules, prices and contracts. Ontario's FIT Program was one of North America's first comprehensive guaranteed pricing structures for renewable electricity production. It offered stable prices under long-term contracts for energy generated from renewable sources, including wind, solar photovoltaic (PV), waterpower and bioenergy.

Indigenous communities are key partners in making the province a clean energy leader. Over 550 FIT projects online or under development involve Indigenous groups. This represents over 850 MW of clean energy capacity. The FIT program has provided significant opportunity for First Nation and Métis to participate in, and benefit from, renewable energy projects by

prioritizing Indigenous community participation. Some examples of Indigenous communities participating in the FIT program include Alderville First Nation in the development of its 5MW 100% First Nation-owned solar farm and Aamjiwnaang First Nation and Bkejwanong Territory's partnership on the 100 MW Grand Bend Wind Farm.

For more information about the FIT program, visit: http://fit.powerauthority.on.ca.



Map of FIT projects with Indigenous community participation (by renewable fuel type). Source: IESO Report on Contracted Supply

Large Renewable Procurement

In 2013, the Minister of Energy directed the IESO to replace the large project stream of the FIT program with a competitive process for procuring large renewable energy projects, generally greater than 500 kilowatts in size – the Large Renewable Procurement (LRP) process.

The LRP process was designed to strike a balance between early community engagement and achieving value for ratepayers.

Like the FIT Program, the LRP also built in incentives for Indigenous community participation. This included rated criteria points for First Nation and Métis community participation, community engagement points for supporting resolutions or agreements with First Nation and Métis communities, and an Indigenous price adder. Projects located on First Nation reserve lands also have the option of an extended milestone commercial operation date.

On April 12, 2016, the IESO announced that of the 16 LRP contracts offered, 13 of these projects, representing 320 MW, involve First Nation community partners. First Nations hold more than a 50% economic interest in five of these 13 contracts.

Informed by the *Ontario Planning Outlook* report, on September 27, 2016, Ontario suspended the second round of its LRP process and the Energy-from-Waste Standard Offer Program, halting procurement of over 1,000 MW of solar, wind, hydroelectric, bioenergy and energy from waste projects.

This decision is expected to save up to $3.8 billion in electricity system costs relative to Ontario's 2013 LTEP forecast. This would save the typical residential electricity consumer an average of approximately $2.45 per month

on their electricity bill, relative to previous forecasts. No additional greenhouse gas emissions are being added to the electricity grid.

3.2 Funding Programs

Aboriginal Community Energy Plan Program

To date, 89 First Nation communities have accessed funding through the Aboriginal Community Energy Plan program to develop community-level energy plans.

Indigenous communities can access up to $90,000 to create a new community energy plan, or up to $25,000 to update an existing plan. Remote communities are eligible for an additional $5,000.

For more information about the ACEP program, visit: www.aboriginalenergy.ca/acep.

Aboriginal Renewable Energy Fund

Since 2010, over $8.5 million was committed under the Aboriginal Renewable Energy Fund (AREF) to help 45 different communities and groups explore opportunities to pursue renewable energy projects.

The AREF program is now closed, but funding for renewable energy partnerships and project development is still available through the new Energy Partnerships Program, outlined below.

Energy Partnerships Program

The new Energy Partnerships Program (EPP), administered by the IESO, is open to Indigenous communities, co-operatives, municipalities and public

sector entities, and includes both a Partnership Stream and a Project Development Stream.

For Indigenous communities:

- The Partnership Stream provides funding for the due diligence work required to assess and develop opportunities for participation in energy projects such as new priority transmission line projects.
- The Project Development Stream supports the soft costs associated with the development of renewable energy projects; it includes a sub-stream for the four remote First Nation communities where transmission connection is not identified in the IESO's Remote Community Connection Plan as economic.

IESO launched the EPP on June 27, 2016. Applications are accepted on an ongoing basis. For more information about the EPP, visit: www.ieso.ca/epp

Aboriginal Loan Guarantee Program (ALGP)

Delivered by the Ontario Financing Authority, the Aboriginal Loan Guarantee Program (ALGP) supports Indigenous communities' equity participation in renewable energy and transmission projects by providing a guarantee for up to 75% of the equity participation in a project, up to a maximum of $50 million.

To date, guarantees totalling over $200 million were approved. The program has been useful in ensuring Indigenous communities can access financing for large energy developments. Some examples of communities that have accessed the ALGP include the Saugeen Ojibway Nation for its equity participation in the Bruce to Milton transmission line and Moose Cree First Nation's participation in the Lower Mattagami hydro-electric facility.

For more information about the ALGP, visit: www.ofina.on.ca/algp

Aboriginal Conservation Program

Ontario has also provided support to encourage First Nation and Métis communities' participation in electricity conservation initiatives. The former saveONenergy Aboriginal Conservation Program, delivered by First Nations Engineering Services Limited (FNESL) under contract with the Independent Electricity System Operator, provided in-home energy assessments and energy-saving upgrades in 46 First Nation communities.

Under the 2015-2020 Conservation First Framework, overseen by the IESO, Ontario committed to enhance the delivery of energy efficiency and conservation programs for on-reserve Indigenous customers. This includes new conservation programs by Local Distribution Companies which are expected to launch in 2016, including Hydro One's First Nations Conservation Program.

3.3 Support for Remote Communities

Ontario has made significant progress to advance the connection of remote First Nation communities to the provincial electricity grid.

On July 29, 2016, Ontario announced that Wataynikaneyap Power was selected as the transmitter to undertake the grid connection of remote diesel-reliant First Nations that are within its partnership, and enabling infrastructure such as the line to Pickle Lake.

Wataynikaneyap Power is an unprecedented partnership of First Nation communities and a transmission partner, Fortis Ontario and RES Canada. The Province has also formally designated this project as a priority for the

purpose of the Ontario Energy Board's approvals. This will ensure that the OEB accepts the project as "needed" when it evaluates its Leave to Construct approval.

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In addition, regulatory amendments have been passed that will provide a mechanism for transmitters to recover a portion of the costs associated with connecting remote communities from the rate base. Ontario is currently engaging with the federal government to identify an appropriate level of contribution to fully fund the project.

On March 17, 2016, Ontario announced support for advanced microgrid solutions in remote First Nation communities through the new Green Investment Fund. The Ministry of Energy is leading this $6 million investment.

Through a collaboration with Ontario Power Generation, Gull Bay is pursuing $2M in funding from the Smart Grid Fund / Green Investment Fund to support

a microgrid project with solar PV, storage and smart controls to reduce the community's reliance on diesel.

3.4 Support for Indigenous Household Electricity Costs

Ontario Electricity Support Program

The government recognizes that First Nation and Métis consumers face unique challenges with respect to electricity affordability.

To mitigate this, the Ministry of Energy tasked the Ontario Energy Board to create a program that helps consumers to manage their electricity prices. Input from First Nation and Métis communities was a key element of program design. Gathering feedback from the public was critical to designing a program that addressed the needs of all customers, including those in most need of support.

The Ontario Electricity Support Program (OESP) came into effect on January 1, 2016, and includes elements to support First Nation and Métis consumers:

- Eligible First Nation and Métis applicants will receive an enhanced monthly, on-bill payment of $45 to $75.
- If tax returns have not been filed within the last two years, intake agencies are available to help complete applications.
- The Ontario Native Welfare Administrators Association are available to provide assistance to First Nation customers. Six Nations of the Grand River and Can Am Urban Native Homes – Windsor also provide this service.

- Efforts to raise awareness of the program included targeted advertising to First Nations, supporting resource people to help with applications in communities, and translating program information into four different First Nation languages.

To date, the Ontario Energy Board has received over 10,000 applications from First Nation and Métis customers. We hope to see this number grow as there are more eligible First Nation and Métis customers.

For more information about the OESP, please visit: https://ontarioelectricitysupport.ca/

First Nations Rate

Many First Nation reserves are located far from high density areas of the province. As a result, they often pay higher distribution costs than customers in more populated areas. In June 2016, the Ministry of Energy asked the Ontario Energy Board to examine and provide advice on electricity rates for on-reserve First Nations electricity consumers. As part of the examination the Ontario Energy Board will undertake outreach and engagement with First Nation communities and organizations. The Ontario Energy Board will report back to the Ministry in early 2017.

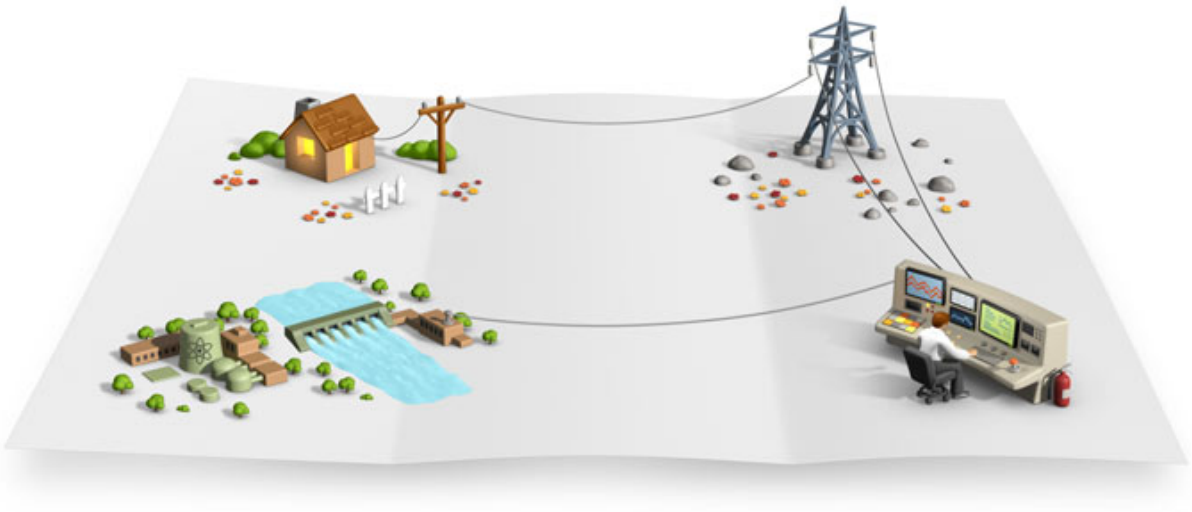
4.0 Let's Talk

What are your community's energy priorities? Hearing the unique ideas and voices of Indigenous people who live in Ontario is critical in developing the next LTEP. This section highlights different energy topics and includes energy-related questions for your input.

You can also share your ideas and responses in person by participating in various LTEP meetings scheduled this fall (locations listed at Ontario.ca/Energy Talks).

4.1 Electricity Transmission

The electricity transmission system is a network of high voltage lines that form the backbone of Ontario's electricity system. These lines carry large amounts of power from generators to demand centres over long distances. Maintaining system reliability is a top system priority. Since 2003, approximately $15 billion has been invested to enhance and renew Hydro One's systems, including upgrades to over 15,000 kilometres of power lines (including both transmission and distribution lines).



The 2010 and 2013 Long-Term Energy Plans identified a number of priority projects for electricity transmission improvements in Northwestern Ontario, including:

- The Northwest Bulk Transmission Line to increase supply and reliability to the area west of Thunder Bay

- The East-West Tie line, reinforcing the networks between Wawa and Thunder Bay

- The connection of remote northwestern First Nation communities to the electricity grid, including a new line to Pickle Lake that is required to support these connections.

Any electricity transmission system upgrades required to meet specific customer needs, such as a new mining project, must be paid for by the customer. Ontario currently applies a ‘user pays’ principle to ensure the direct beneficiary is responsible for the costs, rather than having them paid for by all ratepayers. By the same principle, transmitters do not expand the transmission system to attract new customers.

How should Ontario continue to strengthen electricity system reliability in all regions of the province?

Is the current ‘user pays’ model an effective way to meet Ontario’s needs? Does it appropriately balance the goals of economic development and protecting ratepayers?

4.2 Energy Innovation and Microgrids

Focusing on innovation and grid modernization can make energy more reliable, environmentally friendly, and cost-effective. Ontario has actively promoted energy innovation by supporting technologies like energy storage and smart grids. Ontario is also supporting companies looking to advance these technologies and bring them to communities. For example, Ontario created a “Smart Grid Fund” to support the research and development of technology to improve customer control, system flexibility and the adaptability of infrastructure.

Microgrids come out of an interesting convergence between innovation, renewable generation, and new economic opportunities. Ontario is a big place with many rural and remote communities. These have traditionally been connected to single power lines, sometimes over long distances, and this can hurt the reliability of their supply. Other communities aren't connected at all and rely on diesel generation. In both circumstances, an advanced microgrid may be a solution. Ontario is establishing itself as a top innovator with this technology.

A microgrid is a miniature version of the main grid. A microgrid can be part of the broader energy system, but can disconnect – also known as "islanding" – while still providing power to those within the microgrid. A microgrid also describes the systems in remote, off-grid communities, a network that integrates electricity resources such as solar panels, energy storage, or a combined heat and power plant and distributes it to homes and community buildings and businesses.

Microgrids can be fairly simple – for example, a diesel system providing power in a remote First nation community. There are also advanced microgrids that combine "smart" technology, renewable energy, and storage systems. Smart technologies include sensors and software that automatically react to changes in energy generation and local energy use. By electronically adjusting to changing local conditions, advanced microgrids can provide greater reliability for remote communities.

Advanced microgrids that use renewables and energy storage technology could help remote, off-grid communities reduce their reliance on diesel generators. The government's Climate Change Action Plan says that we will work to support this type of project in remote communities.

Which technologies offer the greatest benefit to your community and the energy system as a whole? Some examples include wind, solar PV, solar-thermal, geo-thermal, and home energy saving solutions.

What additional steps can Ontario take to encourage energy innovation in Indigenous communities?

How could the government help remote communities to develop microgrid projects?

What are the main barriers to remote communities developing this type of project?_____

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4.3 Renewable Electricity

Ontario is well on its way to meeting the 2013 LTEP goal of bringing 10,700 MW of wind, solar and bioenergy on line, as well as 9,300 MW of hydroelectricity by 2025. This will help offset our reliance on fossil fuels and reduce the province's greenhouse gas emissions. Ontario is a leader in North America in the development, use, and manufacturing of clean renewable energy.

Anticipating a more distributed energy future, Ontario is winding down the microFIT and FIT programs and implementing an updated and streamlined net metering program. Net metering is a billing arrangement that allows customers to generate on-site renewable energy for their own use, and to receive credits on their bill for surplus electricity sent to the grid.

What role should distributed renewable energy generation, such as a rooftop solar project, play in Ontario's electricity system?

What types of renewable energy technologies is your community most interested in?

4.4 Fuels and Pipelines

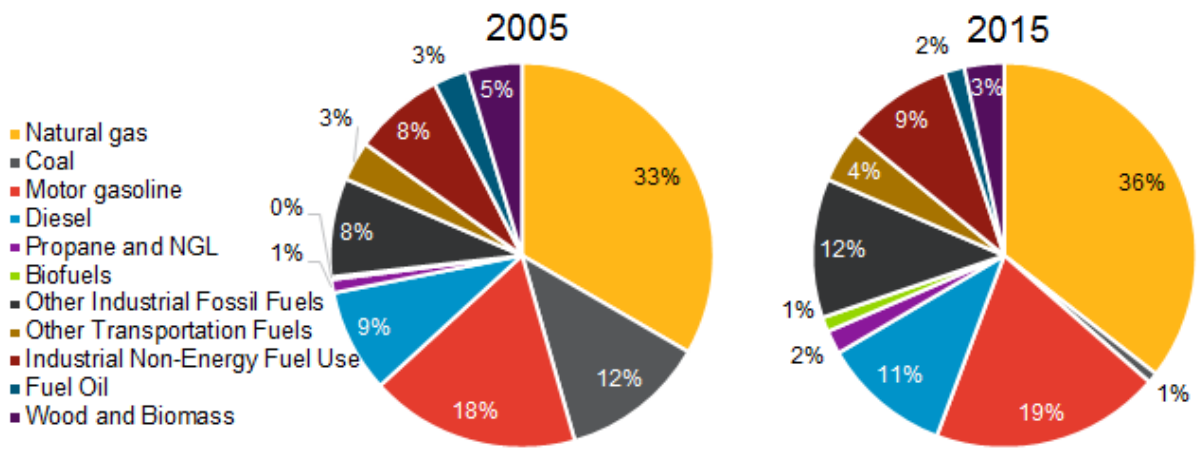
Oil and natural gas supply three-quarters of the province's primary energy requirements and should be included in any long-term energy plan. Through the 2013 LTEP, Ontario established a set of principles to evaluate oil and natural gas pipeline projects.

The 2013 Long-Term Energy Plan (2013 LTEP) set out six principles for how Ontario will evaluate oil and natural gas energy pipeline projects:

- Pipelines must meet the highest available technical standards for public safety and environmental protection;
- Pipelines must have world-leading contingency planning and emergency response programs;
- Proponents and governments must fulfill their duty to consult obligations with Indigenous communities;
- Local municipalities must be consulted;

Almost all oil and natural gas used in Ontario comes from outside the province and is delivered by interprovincial and international pipelines, which are under federal jurisdiction and regulated by the National Energy Board. For federally regulated pipelines, the federal government owes the duty to consult and accommodate.

Fuels such as diesel, oil and natural gas play an important role in our daily lives. However, with an increased focus on climate change and lowering the use of conventional fossil fuels, Ontario will look to switch from oil and natural gas to more efficient electric technologies such as air-source heat pumps and to development of alternative renewable fuels.



Energy East is a project led by Trans Canada involving the building of a crude oil pipeline to move 1.1 million barrels per day of crude oil from Western Canada to refineries in Quebec and Atlantic Canada and an export terminal in New Brunswick. As Energy East will be a federally regulated pipeline, the duty to consult and accommodate rests with the federal government.

Ontario will participate in the National Energy Board's regulatory process for Energy East using principles outlined in LTEP 2013. This includes the stipulation that "Proponents and governments must fulfill their duty to consult obligations with Aboriginal communities".

In November 2013, the province asked the Ontario Energy Board to review the Energy East project's application to the federal government. The Board report, released August 13, 2015, highlighted the need for balance between economic and environmental risks and expected benefits to Ontario.

As part of this Energy East review, the Ontario Energy Board met with Indigenous communities along the proposed pipeline route. The results of the Ontario Energy Board's two-year engagement and review of Energy East offer a starting point for Ontario's understanding of First Nations and Métis views on the Energy East project.

What actions could the government take to support the adoption of alternative fuels?

Should Ontario set provincial conservation targets for other fuel types such as natural gas, oil and propane?

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4.5 Climate Change

Ontario has taken steps to address climate change, including investing in green energy and eliminating the use of coal. As a result, about 90% of the electricity generated in Ontario in 2015 came from emissions-free sources such as water, nuclear, wind and solar. Between 2005 and 2014, carbon dioxide from Ontario's electricity system was reduced by 80%. The province also released a five-year *Climate Change Action Plan* (CCAP) in June 2016, as discussed in Section 1.

What are your priorities with respect to climate change and energy, and what kind of support is required to address your community needs?

What are your views on clean energy sources such as renewable energy and nuclear power's role in meeting Ontario's climate change targets?

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4.6 Conservation

In the 2013 LTEP, the government adopted a policy of putting conservation first before building new energy infrastructure, wherever cost effective. Conserving energy helps people and communities manage their energy bills. It also means fewer energy projects need to be built, thus preserving natural resources.

Electricity conservation programs are delivered by local electricity distributors under the 2015-2020 Conservation First Framework. In addition to saveONenergy residential and business programs which provide energy services and incentives to help with the cost of electricity through savings measures like lighting, heating, cooling and ventilation, the IESO approved a local First Nations Conservation Program (residential) to be delivered in Hydro One service territory. The IESO has also approved Conservation and Demand Management Plans for three First Nation-owned power corporations (Fort Albany, Kashechewan, and Attawapiskat).

Natural gas conservation programs are delivered by Enbridge Gas Distribution and Union Gas under the 2015-2020 Demand Side Management Framework. In addition to residential and business programs, the Ontario Energy Board has approved a Union Gas weatherisation and furnace change out program for Indigenous communities in Union Gas' service territory.

With funding from Ontario's Climate Change Strategy Green Investment Fund, existing home energy audits and retrofit programs delivered by Enbridge Gas Distribution and Union Gas Limited are being enhanced. Homeowners across Ontario, who use natural gas, oil, propane or wood to heat their homes can apply for rebates towards home energy audits and efficiency retrofits.

What are your community's energy conservation priorities?

Does your community have an energy plan?

How can we continue to empower and engage energy consumers, including Indigenous communities in conservation?

4.7 Energy Costs

Energy costs add to the economic challenges many Indigenous communities face in Ontario, and energy affordability is an issue consistently raised by Indigenous leaders and communities.

The government is working with its energy agencies to improve efficiency and manage energy costs. The issue of energy affordability is supported through programs such as Ontario Electricity Support Program, the Low-Income Energy Assistance Program and Rural and Remote Rate Protection. More information on these programs is in the Appendix of this work book.

What is the best way to address energy costs?

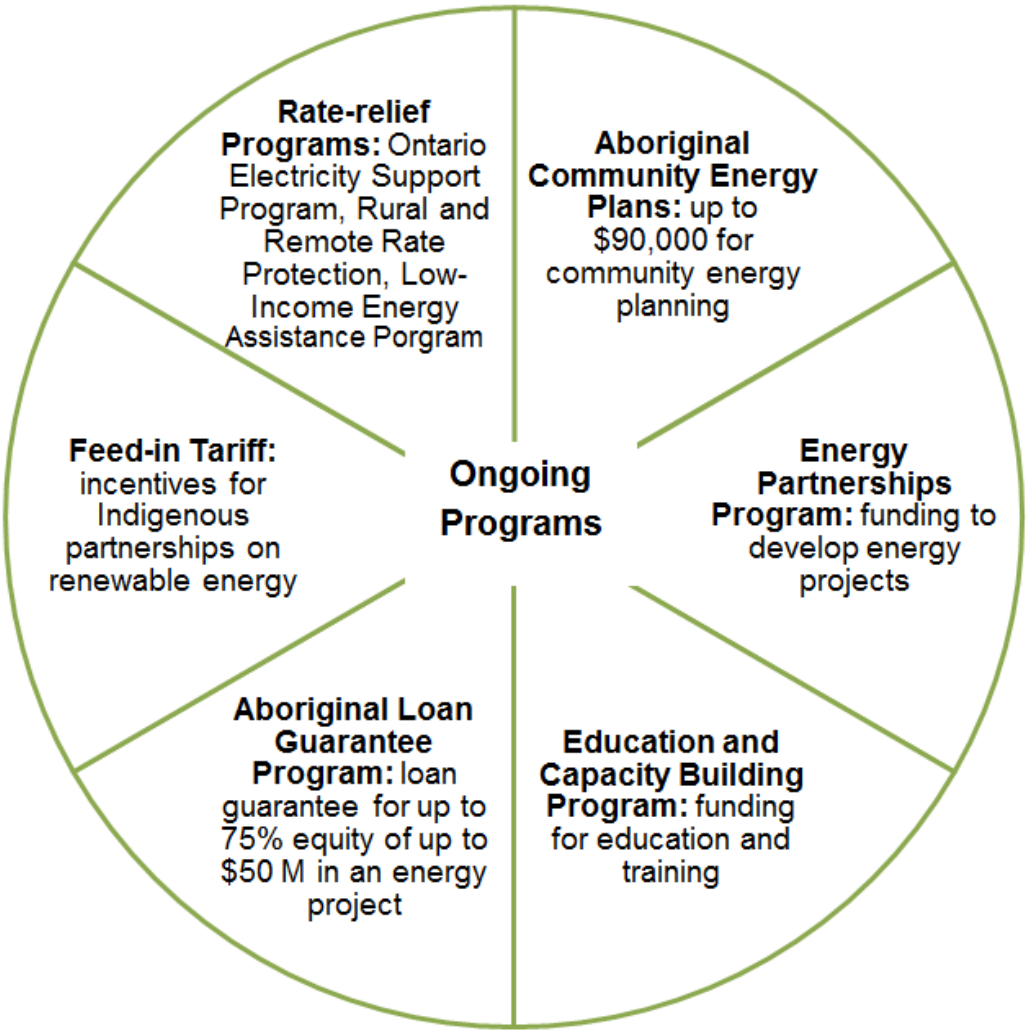
What is the best way to share information about programs designed to help people manage their energy bills?

4.8 Policy and Program Supports

As discussed in section three of this guide, Ontario developed several policies and programs to encourage Indigenous participation in the energy sector. These policies and supports included input from Indigenous communities and groups, and incorporate feedback received from the last LTEP.

Policies guide the government's actions, including the actions of government agencies such as the IESO. Policies also lead to new approaches that will encourage Indigenous involvement.

Current Energy Programs



What are the most important tools to support Indigenous community participation and leadership in Ontario's energy sector going forward?

How should Ontario best work with and engage First Nation and Metis communities, Indigenous political territorial organizations, tribal councils and other key partners to support continued Indigenous participation and leadership in the energy sector?

What is the best way to share information about new programs?

Other energy-related questions or comments

5.0 Next Steps

In addition to completing this workbook and sharing your responses with the province, there are other ways you can provide input into provincial energy policy and participate in the development of the LTEP. For example, you can attend in-person meetings and telephone town hall sessions, dates and locations are listed on www.energy.gov.on.ca/en/ltep. Or you can also participate in the online survey and "Talks Tool" found on www.Ontario.ca/EnergyTalks. Once the province has completed its in-person meetings, and reviewed the input received by phone, email, mail, as well as the online comment registry, it will begin drafting the next Long-Term Energy Plan. The ministry expects to release the LTEP in 2017. Based on the technical reports and input received from First Nations, Métis, members of the public, businesses, industry and other groups, the next LTEP document will guide the province's future energy decisions. It will also provide a base for the province's ongoing energy-related conversations in the years to come.

Appendix A: Programs and Resources

Resources

Ontario Programs

- Energy Partnerships Program (IESO) www.ieso.ca/epp
- Aboriginal Community Energy Plan program (IESO) www.aboriginalenergy.ca/acep
- Municipal Energy Plan Program (Ministry of Energy) http://www.energy.gov.on.ca/en/municipal-energy/
- Education and Capacity Building Program (IESO) www.ieso.ca/ecb
- Smart Grid Fund (Ministry of Energy) http://www.energy.gov.on.ca/en/smart-grid-fund/
- Save On Energy Programs (IESO) www.saveonenergy.ca
- Union Gas *Save Money and Energy* programs www.uniongas.com
- Enbridge Gas Distribution *Manage Your Energy Use* and *Energy Management* programs www.enbridgegas.com
- Ontario Electricity Support Program (Ontario Energy Board) www.ontarioelectricitysupport.ca
- Low-Income Energy Assistance Program (Ontario Energy Board) http://www.ontarioenergyboard.ca/oeb/Consumers/Consumer%20Protection/Help%20for%20Low-Income%20Energy%20Consumers/Low-Income%20Energy%20Assistance%20Program%20%28LEAP%29

Electricity Information Resources

- Conservation Videos (Ministry of Energy): http://www.energy.gov.on.ca/en/empowerme/videos/
- Electricity Bill Tutorial (Ministry of Energy): http://www.energy.gov.on.ca/en/empowerme/bill/
- Energy Trivia (Ministry of Energy): http://www.energy.gov.on.ca/en/empowerme/energy-trivia/
- Power Play – Make your Electricity Mix (Ministry of Energy): http://www.energy.gov.on.ca/en/empowerme/powerplay/
- Kids' Corner (Save on Energy): http://kids.saveonenergy.ca/en/index.html

Appendix B: Glossary

Aboriginal Rights – Rights held by some Indigenous peoples of Canada that are acquired though long-standing use and occupancy of the land, and are protected under Section 35 of the *Constitution Act, 1982*.

Baseload Generation – Sources of electricity that operate continuously day and night and through all the seasons of the year. Baseload generation is usually provided by nuclear and large hydro-electric generating stations.

Bioenergy and Bio-diesel – Energy produced from plants or animals. Sources for bioenergy generation can include agricultural residues, food-process by-products, animal manure, waste wood and kitchen waste.

Cap and Trade – A program to reduce climate change. The "cap" puts a limit on the amount of greenhouse gases that can be discharged. If a company releases more than that amount, it can purchase credits from a company that reduced its GHG emissions levels to below the cap.

Capacity Auction – A competitive market that commits a supplier to meet possible demand for electricity for a future period of time. .

Clean Energy – Energy that is produced without the emission of greenhouse gases

Clean Imports – Imports of hydro-electricity from neighboring provinces such as Quebec, Manitoba or Newfoundland.

Climate Change Action Plan – A five-year Ontario plan aimed at fighting climate change over the long-term. The current *Climate Change Action Plan* will be replaced by a revised plan, when it expires in 2020.

Climate Change Mitigation and Low Carbon Economy Act, 2016 – Ontario legislation, that among other things, established legal framework for Ontario's cap and trade program.

Conservation First – *Conservation First* is Ontario's policy making conservation the first resource considered, wherever cost-effective, in planning to meet the province's energy needs.

Conservation First Framework – Launched January 1, 2015, the six-year Conservation First Framework (2015-2020), overseen by the IESO, governs the delivery of electricity conservation and energy efficiency programs in Ontario and provides the funding, guidelines and certainty needed for electricity distributors to deliver conservation and energy efficiency programs to their customers.

Decarbonizing – The removal of carbon from sources of energy, done to reduce the discharge of greenhouse gases.

Demand Side Management (DSM) Framework – Launched December 22, 2014, the six-year DSM Framework (2015-2020), overseen by the OEB, governs the delivery of natural gas conservation and energy efficiency programs in Ontario and provides the funding, guidelines and certainty needed for natural gas distributors to deliver energy efficiency programs to their customers.

Demand Response – Provides price or financial incentives to residential and business users to shift or reduce their electricity usage away from peak periods of consumption.

Distributed Generation – Energy produced by small, decentralized generators, such as wind turbines and solar panels.

Distribution System - A distribution system that takes electricity from a high-voltage transmission system, reduces the voltage and delivers it to residents.

Electricity Act 1998 – Ontario legislation to ensure the adequacy, safety, sustainability and reliability of electricity supply in the province.

Energy East – A proposal from TransCanada Corporation to convert a natural gas pipeline to carry crude oil from Western Canada for export and use by eastern Canadian refineries.

Energy Audit – A process to determine where, when, why and how energy is being used by energy-consuming systems, such as buildings. The

information can then be used to identify opportunities to improve efficiency, decrease energy costs and reduce GHGs.

Energy Retrofit – The process of upgrading a building's energy consuming systems. Retrofitting may involve improving or replacing lighting fixtures, ventilation systems, or windows and doors, or adding insulation where it makes economic sense. Retrofitting also means including energy efficiency measures in all renovation and repair activities

Energy Storage – Equipment or technology that collects energy so it can be used at a later date. Examples include batteries and hydro-electric dams.

Environmental Registry – An online database where Ontario ministries post environmentally significant proposals or decisions, and invite comments from the public.

Ethanol – A renewable fuel made from plants such as corn, sugar cane and grasses. Its use can reduce greenhouse gases.

Fossil Fuels - Fuels that contain high percentages of carbon and emit greenhouses gases. Fossil fuels include coal, oil and natural gas, and derivatives such as gasoline, kerosene and propane.

Fuels Technical Report (FTR) – A report prepared for the Ontario Ministry of Energy that reviews the current supply and demand for fossil fuels in Ontario, and the possible changes that could occur through to 2036.

Green Button – A data standard that gives customers the ability to access and share their utility data in an electronic, standardized and secure way. Customers can share their data with innovative software applications that allow them to view and manage their energy and water use.

Greenhouse Gases (GHG) – Gases that contribute to climate change. The most prominent GHG, carbon dioxide, is released by the burning of fossil fuels such as coal, oil or natural gas.

Heat Pumps – Technology that heats or cools buildings by absorbing heat from a cold space and releasing it to a warmer one. Heat pumps can replace the need for furnaces and air conditioners.

Independent Electricity System Operator (IESO) – The provincial agency that ensures there is always enough electricity to meet the province's energy needs. It is also responsible for planning and securing electricity to meet future needs, and overseeing delivery of programs under the *Conservation First* framework.

Indigenous – Another term for Canada's First Nation, Métis and Inuit peoples.

Infrastructure – Equipment that generates the energy used by consumers, including nuclear power plants, hydroelectric dams and solar panels and delivers it through wires, pipelines.

Integrated Regional Resource Plan – A plan that identifies the appropriate mix of investments in conservation and demand management, generation, transmission facilities or distribution facilities, needed to address the electricity needs of a region in the near- (up to 5 years), mid- (5 to 10 years), and long-term (more than 10 and up to 20 years).

Kilowatt (kW) – A unit of electricity equal to 1,000 watts (W). A residential home may use up to a few kilowatts of electricity at any one time.

Local Advisory Committee – A committee of local community representatives that provides advice on local priorities and makes recommendations on the development of regional electricity plans. It is comprised of up to 18 members, representing municipalities, First Nation and Métis communities, consumers and citizens, the business community, and environmental and conservation groups.

Local Distribution Company (LDC) – A public or private corporation that owns the wires, poles transformers and pipelines that deliver electricity or natural gas to local consumers.

Long-Term Energy Plan (LTEP) – A blueprint setting out the projected supply and demand for energy for the next 20 years in Ontario. It is updated every few years.

Megatonnes (mt) – One million metric tons.

Megawatt – A unit of electricity equal to 1,000 kilowatts (kW) or one million watts (W). A large residential or commercial building may use several megawatts of electricity at any time.

Megawatt Hour (MWh) – A measure of the energy produced by a generating station over time: a one MW generator, operating for 24 hours, generates 24 MWh of energy.

Methane – A greenhouse gas that is the primary component of natural gas.

Microgrid – A local electricity network linking smaller sources of electricity with nearby users such as homes, business and institutions. In the event of a failure of the larger network, a microgrid can seal itself off and continue to provide power locally.

National Energy Board – The federal agency that regulates the international and inter-provincial operations of oil and gas pipelines and electricity transmitters.

Net Metering – A billing arrangement allowing customers to generate their own electricity on site for their personal use, and receive bill credits for any surplus electricity sent to the local distribution system.

Net-zero Energy Buildings – A building that annually produces at least as much energy as it consumes.

Off-ramps – Specific decision points that give the government the ability to stop the refurbishment of the Bruce or Darlington nuclear reactors.

Ontario Energy Board (OEB) – A provincial agency that sets the prices for natural gas and electricity in Ontario. It also regulates the activities of generators, transmitters, distributors, and the wholesalers and retailers of electricity and natural gas.

Ontario Planning Outlook (OPO) – A report that reviews the past ten years of activity in the electricity system, and provides a series of future scenarios for the next 20 years.

Peak Demand – The period of time in which significantly more natural gas or electricity is needed by consumers.

Petajoules – One petajoule is roughly equivalent to the energy produced by one billion cubic feet of natural gas.

Political Accord – An agreement between the Government of Ontario and the Chiefs of Ontario that will guide the relationship between First Nations and the province.

Regional Infrastructure Plan – A plan, developed by the local transmitter as part of the regional infrastructure planning process. It identifies investments in transmission and distribution facilities that should be developed and implemented on a coordinated basis to meet the electricity infrastructure needs within a region.

Regulated Price Plan – A time-of-use pricing plan, revised every six months by the OEB, that sets the prices for electricity during peak, off-peak, and mid-peak periods of the day

Regulatory Registry – An online database where Ontario ministries post proposed regulations, and invite comments from the public.

Reliability – The ability to deliver electricity to consumers on demand, in accordance with industry standards. For example, standards that set parameters for power quality, availability, or restoration times in case of an outage.

Resiliency – The ability to withstand impacts from climate change, including changes in demand, disruption in supply, and damage to infrastructure.

Renewable Natural Gas (RNG) – A form of methane that comes from organic sources, such as landfill gas, agricultural residues and wastes from

food and beverage manufacturing. RNG is a "carbon neutral" fuel as it is produced from renewable resources.

Rural and Remote Rate Protection Program – Provides financial assistance to eligible customers of certain local distribution companies located in rural or remote areas. This program helps offset the higher cost of providing service to consumers in these areas.

Smart Grid – A Smart Grid uses digital computerized equipment with two-way communications to deliver electricity and control applications in consumers' homes and business. Equipment using the Smart Grid can save energy, reduce costs and increase reliability and transparency.

Smart, or Programmable Thermostat – A smart thermostat learns the temperature preferences of a building's occupants and automatically turns itself down when the building occupants are away. It can typically be controlled remotely from a phone, tablet or laptop.

Social Benchmarking – A program that provides customers with information about their energy usage, and compares it to the usage of their neighbours or peers.

Terawatt Hours (TWh) – One billion kilowatt hours (kWh). A kWh is the same as one kilowatt (1 kW) of power being used for one hour.

Time-Of-Use – Prices for electricity that vary according to the demands put on the system. Under a time-of-use plan, prices are higher during periods of peak consumption when it costs more to generate electricity. Conversely, prices are lower during off-peak periods, when the cost of electricity is less.

Transmission – The movement of electricity or natural gas, usually over long distance, from generation sites to consumers and local distributions systems. Transmission of electricity is done at high voltages.

Vancouver Declaration – An agreement-in-principle by Canada's First Ministers to work toward a national climate change plan and develop of a price on carbon.

Watt (W) – A unit of electricity that measures how much electrical power is being generated or used at any one time.

Whole Home – An holistic approach to conservation and energy efficiency that looks at improvements in the use of electricity, natural gas and water throughout a home to achieve the most efficient results.