

2017 LTEP QA

<u>KEY MESSAGES</u>	2
<u>WHAT'S NEW - 2017 LTEP KEY CHANGES</u>	3
<u>QUESTIONS AND ANSWERS</u>	4
<u>Electricity Price Outlook – Residential Consumers</u>	4
<u>Comparison to Preliminary Forecasts</u>	9
<u>Electricity Price Outlook – Large Industrial Consumers</u>	9
<u>Supply/Demand</u>	10
<u>Conservation</u>	10
<u>Electricity Sector GHG Emissions Outlook - GHG forecast</u>	11
<u>Consumer Protection</u>	12
<u>Affordability, Flexibility and Innovation</u>	13
<u>General LTEP Questions</u>	16
<u>Bill Redesign:</u>	20
<u>Net Metering:</u>	21
<u>Improving value for customers:</u>	21
<u>Smart Meters and Time-of-Use (TOU):</u>	22

KEY MESSAGES

- The 2017 Long-Term Energy Plan (LTEP), *Delivering Fairness and Choice*, focusses on energy affordability, innovation and customer choice.
- The 2017 LTEP is a road map that sets out the direction for Ontario's energy future. The Province engaged with Ontarians to develop the plan. During engagement, Ontarians said that affordability is a top priority and that consumers wanted more control and choice over how they use and pay for electricity.
- Nearly \$70 billion has been invested in Ontario's electricity system since 2003 to ensure it is clean and reliable.
- The government phased out coal-fired generating stations.
- In 2016, Ontario's electricity generation was more than 90 per cent free of greenhouse gas emissions that cause climate change.
- As of July 1, 2017, Ontario's Fair Hydro Plan reduced electricity bills by 25 per cent on average for residential consumers and as many as half a million small businesses and farms across the province. As part of the plan, any increases to bills will be held to the rate of inflation for four years.
- Following this, the 2017 LTEP confirms that electricity prices are forecast to remain below the level projected in the 2013 LTEP.
- While rates will rise gradually over time, the government remains committed to avoiding sharp increases through initiatives outlined in the Long-Term Energy Plan.

WHAT'S NEW - 2017 LTEP KEY CHANGES

- Electricity is more affordable. Ontario's Fair Hydro Plan has lowered electricity bills by 25 per cent on average for residential consumers, and will hold increases to the rate of inflation for four years.
 - Following this, the 2017 LTEP confirms that electricity prices are forecast to remain below the level projected in the 2013 LTEP.
 - While rates will rise gradually over time, the government remains committed to avoiding sharp increases through initiatives outlined in the Long-Term Energy Plan.
- The Ministry will work with its agency partners to enable utilities to modernize their businesses and electricity grids, with the goal of creating greater efficiency, reducing costs, and providing customers with more choice.
- The net metering program will be enhanced to empower customers to participate in generating their own clean, renewable electricity and receive a credit on their electricity bills for any extra power they send back to the grid.
- The Province intends to expand Green Button province-wide, so that consumers can take control of their energy consumption by sharing their energy data with apps and energy management tools of their choice, which can help them identify conservation and energy efficiency opportunities.
- Enhanced consumer protection by giving the Ontario Energy Board (OEB) increased regulatory authority over the 326,000 individually-metered condo and apartment units in the province.
- Eligible on-reserve residential customers will receive a First Nations Delivery Credit, giving them back 100 per cent of their delivery line; typically an \$85 per month savings.

QUESTIONS AND ANSWERS

Electricity Price Outlook – Residential Consumers

Q. The average monthly residential electricity bill is projected to increase by \$12 from 2023 to 2024 alone. The LTEP is titled Fairness & Choice; how is this remotely fair? Doesn't this just prove that the Fair Hydro Plan is a scheme to buy the 2018 election, at the expense of future generations?

Over the last several years electricity prices had increased too much, too quickly.

And that's why we took strong and decisive action this past Spring, in launching Ontario's Fair Hydro Plan.

And ever since we launched our plan, we've been clear with the people of Ontario that it would cost more, and take longer to pay off.

But this generation of Ontario ratepayers had invested nearly \$70 billion in much needed improvements to the province's electricity system, as a result of neglect from previous governments of all stripes.

These investments to create a clean and reliable electricity system and eliminate dirty coal-fired generation, will last for generations to come, and it's only fair that more than the current generation pays for them.

And for Ontario's most vulnerable electricity consumers and those in eligible rural and Northern communities with the highest delivery rates, our government will continue to support these families with the expanded Ontario Electricity Support Program and the enhanced Rural or Remote Rate Protection Programs.

If pressed on residential electricity bills being back to 2016/2017 levels by 2023/2024:

Over the last several years people told us that electricity prices had increased too much, too quickly.

And that's why we took strong and decisive action this past spring, by launching Ontario's Fair Hydro Plan.

The plan holds reduces bills by 25 per cent on average and holds any increases to the rate of inflation for four years.

But our plan doesn't stop there. The 2017 LTEP outlines new initiatives that are taking further costs out of the system.

While it's true that rates will rise gradually over time, our government remains committed to avoiding sharp increases in prices over the long term.

We have a track record of taking costs out of the system and we will continue to do so, wherever prudent.

In 2010, the Government's first Long-Term Energy Plan projected that in 2020 the average residential bill would be more than \$200 per month.

Today's Plan now projects that in 2020 the average monthly bill will be under \$130 per month.

Deferring the construction of new nuclear; renegotiating the Samsung Agreement; cutting back on targets for utility-scale renewable generation are just a few examples that have reduced forecast costs by billions of dollars.

This now includes moving forward with Market Renewal initiatives to redesign our electricity markets. This undertaking is expected to save up to \$5.2 billion between 2021 and 2030 and forms a key component of our Plan to ensure the affordability of electricity for Ontario ratepayers.

As part of Market Renewal, the Independent Electricity System Operator (IESO) is developing an incremental capacity auction that will use competition to secure the electricity resources the Province needs, regardless of the technology.

If pressed on the Fair Hydro Plan:

The Global Adjustment (GA) has been an important factor in providing stable prices while ensuring that sufficient generating capacity is in place to deliver a reliable supply of electricity.

GA pays for the bulk of the recent investments in the electricity system. The majority of the province's electricity generators operate under 20-year contracts. Third-party experts have confirmed that many of these generators will be able to continue to operate beyond the end of their contract. This means that generating assets are expected to have ongoing useful life and benefit future ratepayers by reducing the need to finance the development of new generating assets.

Refinancing the GA is providing significant and immediate rate relief by spreading the cost of electricity investments over the expected lifecycle of the infrastructure that has been built. This more fairly shares the cost of our investments across the generations of electricity ratepayers who will benefit from them.

Ontario's Fair Hydro Plan acts much like taking out a new mortgage – providing much-needed relief now by spreading costs across the life of our assets. Current ratepayers are paying less now, and future ratepayers will in turn help to pay for their fair share of the significant investments that we've made in a clean and reliable electricity system. This more fairly shares the cost of our investments across the generations of electricity ratepayers who will benefit from them.

Over time, it will cost a bit more. And it will take longer to pay off.

But it is fairer – because it doesn't ask this generation of hydro customers alone to pay the freight for everyone before and after.

If pressed on Ontario's Fair Hydro Plan Accounting Practices:

In developing the policy to refinance the Global Adjustment (GA), the government considered a range of implementation options and consulted with legal, accounting, financial and energy sector third-party experts to provide advice and ensure due diligence was completed.

Ontario's Fair Hydro Plan operates under a financial and accounting framework that is appropriate for the intended purpose and in accordance with Public Sector Accounting Standards (PSAS) and ensures that the fairness goals underlying the program are achieved in a cost-effective manner.

In the development of Ontario's Fair Hydro Plan (OFHP), the government made the policy decision that deferred electricity system costs should be borne by the rate-base and not the tax-base.

Based on this policy decision, it was decided that the debt obligation would be recognized as a regulatory asset that would be sold and securitized. This design appropriately aligns the costs and benefits within the group of eligible consumers.

Ontario Power Generation (OPG) was identified as the Financial Services Manager responsible for the financing plans and the financing entity (i.e., Fair Hydro Plan Trust) that will manage the debt obligations OPG has the necessary financing and commercial expertise to assist with refinancing the GA and will ensure that it is done in an efficient and cost-effective manner.

The Independent Electricity System Operator (IESO) will reflect the impact of the GA refinancing using rate-regulated accounting. Rate-regulated accounting better reflects the economic substance of IESO's operations and enhances the relevance, transparency and accountability of its financial reporting. Rate-regulated accounting is well understood in the electricity sector, and the recognition of regulatory assets brings IESO in line with 6 other independent system operators in North America.

IESO's management, IESO's Audit Committee, IESO's Board of Directors, IESO's external auditor and the Office of the Provincial Controller all support the use of rate-regulated accounting by IESO.

KPMG issued a clean opinion in the audit of IESO's December 31, 2016 financial statements that included recognition of rate-regulated assets and market accounts. Deloitte was also consulted and confirmed that an entity reporting under PSAS could have regulatory assets if rate-regulated.

Q. Is it true that if you just financed Ontario's Fair Hydro Plan through the Province's books that the cost curve would've increased less over the out years of the Plan? But now there is an extra \$4 billion for ratepayers to cover, because you've 'cooked the books'. How is this fair?

In the development of Ontario's Fair Hydro Plan, the government made the policy decision that deferred electricity system costs should be borne by the rate-base and not the tax-base.

Ontario's Fair Hydro Plan (OFHP) acts much like taking out a new mortgage – providing much-needed relief now by spreading costs across the life of our assets. Current ratepayers are paying less now, and future ratepayers will in turn help to pay for their fair share of the significant investments that we've made to build a clean and reliable electricity system. This more fairly shares the cost of our investments across the generations of electricity ratepayers who will benefit from them.

Ontario Power Generation (OPG) was identified as the Financial Services Manager responsible for the financing plans and the financing entity (i.e., Fair Hydro Plan Trust) that will manage the debt obligations. OPG has the necessary financing and commercial expertise to assist with refinancing the Global Adjustment (GA) and will ensure that it is done in an efficient and cost-effective manner.

OPG has a demonstrated track record in the financial markets with its Corporate Debt platform, private placement of insurance linked bonds, participation in securitization program and highly successful project debt issuances tied to new hydroelectric developments. The innovative, cost saving and precedent setting aspects of these structures have resulted in international recognition.

With respect to the \$4 billion figure referenced by the Financial Accountability Office (FAO) in its May 2017 report, it should be noted that the FAO's report was based on initial Ministry of Energy estimates from March 2017. Subsequent analysis conducted by the Ministry of Energy refined a number of variables, including the cost of borrowing and electricity system cost forecasts.

Total borrowing estimates over the thirty year life of Ontario's Fair Hydro Plan (OFHP) have been revised down substantially by the government since the FAO released its report in May 2017, and borrowing costs are now forecast to be substantially lower than original estimates. Current government estimates forecast that the peak debt over the thirty year life of the Fair Hydro Plan will be below \$20 billion. The preliminary estimate from March 2017 was about \$28 billion.

A number of variables, including interest rates, electricity demand and electricity costs, will vary over the thirty year life of OFHP and cost estimates will continue to be revised to reflect these changing conditions. The total estimated cost of the program has already been revised downwards substantially to reflect revised inputs.

If pressed on the details of the revised peak debt number:

Peak debt for OFHP has been revised down substantially from March 2017, from about \$28

billion to below \$20 billion. The higher March 2017 estimate was used by the FAO in its May 2017 report.

If pressed on interest costs:

The government estimates of total interest cost also decreased from \$25 billion to below \$20 billion.

Q. In the development of Ontario's Fair Hydro Plan, did the government set up the financing structure intentionally to keep it off government books?

No. Global Adjustment (GA) refinancing is designed so that deferred costs are borne by the rate-base, as the beneficiaries of the electricity system, and not the tax-base.

GA refinancing operates under a financial and accounting framework that is appropriate for the intended purpose and in accordance with Public Sector Accounting Standards (PSAS) and ensures that the fairness goals underlying the program are achieved in a cost-effective manner.

Q. I thought we were receiving a 25% reduction on our electricity bills? Why does the 2017 LTEP price forecast indicate that the reduction is only 20%?

Ontario's Fair Hydro Plan (OFHP) has lowered electricity bills by 25 per cent for a typical residential consumer and will hold increases to the rate of inflation for four years. The reduction reflects a number of initiatives, including the refinancing of a portion of the Global Adjustment (GA), the shifting of cost recovery for electricity support programs from electricity bills to provincial revenues, and the 8 per cent rebate introduced in January.

As a result of the reduction, total electricity bills for the proxy consumer are 25 per cent lower relative to what they would have been as of July 2017 without the initiatives that are part of Ontario's Fair Hydro Plan. The residential electricity price outlook in the 2017 LTEP represents annual average bills for the proxy consumer. There was a decrease of 20 per cent from the 2016 average bill to the 2017 average bill.

The impacts of GA refinancing are calculated based on a proxy consumer with the following characteristics:

- Consumes 750 kWh of electricity per month, the average household consumption used by the Ontario Energy Board (OEB);
- Charged time-of-use rates under the OEB's Regulated Price Plan (RPP) with a standard load shape of 65 per cent off-peak, 17 per cent mid-peak, and 18 per cent on-peak, representing the current average profile as used by the OEB;
- Customer of Toronto Hydro; consistent with the proxy consumer used in the 2010 Long-Term Energy Plan, the 2013 Long-Term Energy Plan and the 2016 Ontario Planning Outlook.

Actual impacts are above or below the level determined for the proxy, depending on how much electricity is used and the rates charged by specific local distribution companies.

Q. The 2017 LTEP data table says that the bill reduction was only 20 per cent? Is that true?

The 20 per cent decrease shown in the 2017 LTEP data tables represents an annual average of monthly bills for each calendar year and therefore includes 2017 rates before the introduction of Ontario's Fair Hydro Plan.

Under the *Ontario Fair Hydro Plan Act, 2017* (and related regulations), the Ontario Energy Board (OEB) was required to set new Regulated Price Plan (RPP) rates as of July 1, 2017 that would reduce typical residential bills by 25 per cent.

The OEB will reset RPP rates effective May 1, 2018.

If pressed

The table note in the 2017 LTEP indicates that the OEB determined rates effective July 1, 2017 under OFHP that resulted in an average bill of \$121, which is 25 per cent lower than the \$162 bill that would have been in place absent the OFHP.

Comparison to Preliminary Forecasts

Q. How does the residential electricity price forecast in the 2017 Long-Term Energy Plan (2017 LTEP) compare to the March 2017 forecast?

The residential bill forecast in the 2017 LTEP is lower by an average of 7 per cent compared to the preliminary March 2017 forecast.

If pressed on the updates to the ENERGY modelling

The revised estimates are the result of the following factors:

- The Independent Electricity System Operator (IESO) updated its long-term cost projections for the electricity system and residential bills;
- The Ontario Energy Board (OEB) provided "actual data" with respect to residential bills for the May 1, 2017 to April 30, 2018 period; and
- Navigant Consulting provided updated estimates for the Fair Allocation Amount (FAA) based on an assumed interest rate of 4.5%.

Electricity Price Outlook – Large Industrial Consumers

Q. Your forecasting shows continued increases on the province's job creators. Are you creating a crisis on businesses that will need to be solved in a manner similar to the Fair Hydro Plan?

Ontario recognizes the importance of electricity prices for industry. Keeping electricity affordable

is part of our plan to create jobs, grow the economy, and help people in their everyday lives.

The 2017 LTEP electricity price outlook for large industrial consumers reflects average increases in line with inflation over the forecast period. Currently, the electricity price for industrial electricity consumers in Ontario is lower than the average price in the Great Lakes region as reported by the U.S. Energy Information Administration.

As part of Ontario's Fair Hydro Plan, we expanded the Industrial Conservation Initiative (ICI) to include smaller manufacturers and greenhouses with average monthly peak demand greater than 500 kilowatts (kW). ICI participants can lower their bills by an average of one-third by reducing consumption during peak hours.

Consumers of all sizes are benefitting from the shifting of cost recovery for electricity support programs from electricity bills to provincial revenues, lowering regulatory charges paid by all Ontario ratepayers by approximately \$3/MWh;

In addition, Ontario is looking for new ways to provide electricity rate assistance to consumers that are too large to be eligible for the OEB's Regulated Price Plan (RPP) and too small to be eligible for the Industrial Conservation Initiative (ICI), known as non-RPP Class B consumers.

If pressed on Class B consumers:

For these consumers, the GA is a fixed charge that is the same regardless of the time that they consume electricity. A GA charge that varies with the time of use could lower prices for some Class B consumers, while incenting more efficient consumption patterns.

The government will also continue to look for other opportunities to reduce costs for these consumers.

Supply/Demand

Q. Government policies resulted in an oversupply, particularly of high-priced renewable energy, that greatly increased prices. How will the 2017 LTEP address this?

Nearly \$70 billion has been invested in Ontario's electricity system to ensure it is clean and reliable. Over the last decade the government has rebuilt our transmission and distribution grid, invested in clean generation and closed the last coal-fired power plant. Ontario's electricity system is now 90 per cent free of greenhouse gas (GHG) emissions that cause climate change.

While we currently have an adequate supply of electricity, a shortfall in capacity is expected beginning in the early-to-mid 2020s as the Pickering Nuclear Generating Station reaches its end of life, and nuclear units at Darlington and Bruce are temporarily removed from service for refurbishment. This need for additional capacity will be met through initiatives under IESO's Market Renewal, ensuring a more flexible, cost-effective and competitive procurement process that better reflects system needs.

These investments enable the government to focus on reducing system costs to put downward

pressure on electricity prices over the longer term. Our robust energy supply puts us in a good position to improve efficiency, increase transparency and enhance opportunities for innovation and competition to further reduce system costs.

For example, the Independent Electricity System Operator's (IESO) Market Renewal initiative will result in a more efficient marketplace with competitive and transparent mechanisms that will meet future system needs at the lowest cost. The project is expected to save up to \$5.2 billion over a 10-year period and forms a key component of Ontario's plan to ensure the affordability of electricity in the longer term.

As part of Market Renewal, IESO and its stakeholders are designing competitive mechanisms to procure new supply resources, including a capacity auction. A capacity auction would allow existing and new clean generation facilities to compete in a robust market with clean imports, demand-side initiatives and new emerging technologies.

Conservation

Q. The goal of your Conservation First Framework and Industrial Accelerator Program is a total reduction of 8.7 TWh of electricity consumption by the end of 2020.

1.7 TWh is to be achieved through conservation projects with transmission-connected customers under the Industrial Accelerator Program, and 7 TWh from conservation programs delivered by LDCs to residential and business customers across the province.

Are you on track to meet this ambitious target?

Through the 2015-2020 Conservation First Framework and the Industrial Accelerator Program we are to achieve 8.7 TWh of combined electricity savings by the end of 2020. We are on track to meeting this goal.

Verified results from 2015 and 2016 programs indicate that about 3.1 TWh of electricity savings have been achieved through the Conservation First Framework and the Industrial Accelerator Program, which is about 36% of the 8.7 TWh goal.

In addition, we are on track to meeting our long-term conservation target of 30 TWh in 2032. Between 2006 and 2015 Ontarians conserved 13.53 TWh of electricity through programs and improved codes and standards – enough to power the cities of London, Kingston, Brantford, Ottawa and Peterborough in 2015.

The Independent Electricity System Operator is currently conducting a mid-term review of the Conservation First Framework and the Industrial Accelerator Program. The review is looking at distributor budgets and targets, how programs are meeting customer needs, and alignment with the province's climate change objectives.

Electricity Sector GHG Emissions Outlook - GHG forecast

Q. Your government has a Climate Change Action Plan (CCAP) with lofty targets to hit when it comes to reducing GHG emissions.

How do you circle the square of meeting your emissions reductions, when your own Long-Term Energy Plan forecasts GHG emissions to increase over the next 20 years?

Ontario is taking a leading role in the global fight against climate change. By 2014, Ontario had eliminated coal-fired generation and in 2016 our electricity generation was more than 90 per cent free of emissions that cause climate change.

Ontario remains committed to an electricity system that includes renewable energy generation and supports the goals of the Province's CCAP. The Ministry of Energy worked closely with the Ministry of the Environment and Climate Change throughout the development of the 2017 LTEP to ensure the consideration of Ontario's emissions reduction targets.

The 2017 LTEP forecast of electricity sector GHG emissions remains well below historical levels and is relatively flat over the planning period.

Ontario will use proceeds from the province's cap-and-trade program to fund actions to reduce GHG emissions, such as supporting Ontarians in shifting away from fossil fuels and investing in emerging clean technologies. Proceeds are projected to be \$1.8 billion in 2017-18 and \$1.4 billion annually, starting in 2018-19. These funds will help to fight climate change, reduce greenhouse gas emissions and transition Ontario to a low-carbon economy.

Initiatives to address the climate challenge in the energy sector include:

- Ontario will encourage the construction of near net zero and net zero energy and carbon emission homes and buildings to reduce emissions in the building sector.
- Ontario is expanding the options for net metering to give building owners more opportunities to integrate renewable energy generation and energy storage technologies.
- Ontario will continue to work with industry partners to introduce renewable natural gas into the province's natural gas supply and expand the use of lower-carbon fuels for transportation.
- Ontario will strengthen the ability of the energy industry to anticipate the effects of climate change and integrate its impacts into its operational and infrastructure planning.

Consumer Protection

Q. Does the 2017 Long-Term Energy Plan improve consumer protection?

We have already given the Ontario Energy Board (OEB) the authority to prohibit disconnections during certain periods of time when customers are more vulnerable, such as over the winter months.

We will now give added protection to consumers living in condominiums and other multi-unit residential buildings whose units are metered and billed for electricity by private companies who

provide metering services to their unit. These consumers will benefit from increased oversight from the OEB over fees charged by those providers.

Consumers will also benefit from the OEB's new Consumer Charter, which ensures all energy consumers have the right to a fair, reasonable and timely process for resolving their complaints.

Q. What are the next steps?

The development of *Delivering Fairness and Choice* followed a new legislated long-term energy planning process. The process included the development of electricity and fuels technical reports, a comprehensive engagement process with Ontarians and the issuance of implementation directives to the OEB and IESO.

The next step is for the OEB and IESO to submit implementation plans to the Minister of Energy, which will outline the steps these agencies will take to implement the policies and programs in the implementation directives. The development of these implementation plans will also lay out how the agencies will engage with the public, Indigenous communities and councils, and key stakeholders.

[Affordability, Flexibility and Innovation](#)

Q. How will the 2017 LTEP make Ontario's energy more affordable and accessible?

Electricity

Residential electricity prices over the 2017 LTEP outlook period are forecast to remain below the level forecast in the 2013 LTEP, thanks to Ontario's Fair Hydro Plan and a number of other measures aimed at reducing costs for customers.

Ontario's' Fair Hydro Plan:

- Lowers electricity bills by 25 per cent for a typical residential consumer, and will hold increases to the rate of inflation for four years. As many as half a million small businesses and farms are also benefiting from the reduction;
 - The reduction reflects a number of initiatives, including the refinancing of a portion of the GA, the shifting of cost recovery for electricity support programs from electricity bills to provincial revenues and the 8 per cent rebate that took effect on January 1, 2017;
- Expands the Ontario Electricity Support Program (OESP) by increasing the on-bill credits by 50 per cent and making more Ontarians eligible for the program;
- Provides enhanced distribution rate protection for residential customers served by the local distribution companies (LDCs) that have some of the highest rates. This will let eligible customers save as much as 40 or 50 per cent on their electricity bills. The enhanced distribution rate protection broadens the support provided under the existing Rural or Remote Rate Electricity Protection (RRRP);

- Reduces the monthly electricity bills for on-reserve First Nation residential customers of licensed distributors by giving the customers a 100 per cent credit on the delivery line or service charge of their bills. This provides them with an average monthly benefit of \$85;
- Shifts the funding of the OESP and most of the Rural or Remote Rate Electricity Protection (RRRP) program from electricity bills to provincial revenues. This will reduce the regulatory charges paid by all Ontario ratepayers by approximately \$3/MWh;
- Expands the Industrial Conservation Initiative (ICI) to include smaller manufacturers and greenhouses with average monthly peak demand greater than 500 kilowatts (kW). ICI participants can lower their bills by an average of one-third by reducing consumption during peak hours; and
- Establishes an Affordability Fund that helps Ontarians who don't qualify for low-income conservation programs to make energy efficiency improvements to their homes, improvements that couldn't otherwise be done without the support.

The 2017 Long-Term Energy Plan (LTEP) focusses on continuing to put downward pressure on electricity bills over the long term, building on the collaboration of the Independent Electricity System Operator (IESO) and the Ontario Energy Board (OEB). Our robust energy supply puts us in a good position to improve efficiency, increase transparency and enhance opportunities for innovation and competition to further reduce system costs.

For example, IESO's Market Renewal initiative will result in a more efficient marketplace with competitive and transparent mechanisms that will meet future system needs at the lowest cost. The project is expected to save up to \$5.2 billion over a 10-year period and forms a key component of Ontario's plan to ensure the affordability of electricity in the longer term.

As part of Market Renewal, IESO and its stakeholders are designing competitive mechanisms to procure new supply resources, including a capacity auction. A capacity auction would allow existing and new clean generation facilities to compete in a robust market with clean imports, demand-side initiatives and new emerging technologies.

While Ontario currently has an adequate supply of electricity, a shortfall in capacity is expected beginning in the early-to-mid 2020s as the Pickering Nuclear Generating Station reaches its end of life, and nuclear units at Darlington and Bruce are temporarily removed from service for refurbishment. This need for additional capacity will be met through initiatives under IESO's Market Renewal, ensuring a more flexible, cost-effective and competitive procurement process that better reflects system needs.

Natural Gas

- Ontario will continue to support expanded access to natural gas, giving customers greater choice and aiding in the economic development of their communities.

Q. How will the 2017 LTEP ensure Ontario's energy system is flexible enough to adapt to future changes in the sector?

Ontario's current robust electricity supply provides us with the opportunity to explore and efficiently implement new approaches to procuring electricity resources. These approaches will need to be designed to be flexible enough to ensure that Ontario is well positioned to accommodate and benefit from emerging energy technologies, while also ensuring that system needs are met at the lowest cost to ratepayers.

Ontario is moving away from relying on long-term electricity contracts and is enhancing its market-based approach to reduce electricity supply costs and increase flexibility. Electricity system operators in New England, New York and the Pennsylvania-New Jersey-Maryland Interconnection have successfully implemented this type of approach.

The Independent Electricity System Operator (IESO) has begun a Market Renewal initiative to redesign the province's electricity markets. This undertaking is expected to save up to \$5.2 billion over a 10-year period and forms a key component of Ontario's plan to ensure the affordability of electricity in the longer term.

As part of Market Renewal, IESO and its stakeholders are designing competitive mechanisms to procure new supply resources, including a capacity auction. A capacity auction would allow existing and new clean generation facilities to compete in a robust market with clean imports, demand-side initiatives and new emerging technologies.

While Ontario currently has an adequate supply of electricity, a shortfall in capacity is expected beginning in the early-to-mid 2020s as the Pickering Nuclear Generating Station reaches its end of life, and nuclear units at Darlington and Bruce are temporarily removed from service for refurbishment. This need for additional capacity will be met through initiatives under IESO's Market Renewal, ensuring a more flexible, cost-effective and competitive procurement process that better reflects system needs.

In addition, Ontario's cap and trade program will support efforts to decarbonize the energy sector while providing large emitters with flexibility to determine how to reduce their emissions.

While natural gas will continue to play a central role in the Province's energy supply mix, Ontario is looking at using renewable natural gas (RNG) to lower the carbon intensity of natural gas use. Renewable fuel alternatives do not incur cap and trade costs and, consequently, are expected to become relatively more attractive than carbon intensive fuels. This could increase the adoption and use of fuels such as RNG, which can use the existing natural gas distribution system to replace the use of conventional natural gas while simultaneously lowering GHG emissions.

Q. How will the 2017 LTEP ensure that consumers benefit from system innovation?

The Province will work with the OEB to provide customers greater choice in their electricity price plans.

The net metering framework will continue to be enhanced to give customers new ways to participate in renewable energy generation, while reducing their electricity bills and support innovative customer-utility relationships.

Barriers to the deployment of cost-effective energy storage will be reduced.

Utilities will be able to intelligently and cost-effectively integrate electric vehicles into their grids, including smart charging in homes.

The Province will articulate a vision for grid modernization in Ontario, and give local distribution companies (LDCs) more tools to overcome barriers and provide more customer choice and efficient, reliable and cost-effective services to customers.

Ontario will build on its success and renew and enhance the Smart Grid Fund. This will continue the Province's support of Ontario's innovation sector and help overcome other barriers to grid modernization.

The IESO will strategically deploy renewable distributed generation projects that demonstrate the value of innovative technologies to the system and to customers;

Ontario intends to fund international demonstration projects to help Ontario's innovative energy companies diversify to foreign markets.

The Province will collaborate with the federal government, universities and industry to support the province's nuclear sector.

Innovative uses for Ontario's natural gas distribution system will be pursued.

The province will work with the IESO to explore the development of a pilot project that explores the energy system benefits, and GHG emission reductions of electrolysis.

Market Renewal will transform Ontario's wholesale electricity markets and ultimately result in a more competitive and flexible marketplace, including a procurement approach that will better respond to the evolving electricity system. New approaches will be designed to be flexible enough to ensure that Ontario is well positioned to accommodate and benefit from emerging energy technologies, while also ensuring that system needs are met at the lowest cost to ratepayers.

Q. How will the 2017 LTEP make the energy sector more transparent and accountable to consumers?

The Province expects the OEB to continue to enhance its efforts to improve the performance of LDCs. The Province will look to the OEB to identify additional tools and powers that it could use to make utilities more accountable to their consumers, promote efficiencies and cost reductions, encourage partnerships, and ensure regulatory processes are cost-effective and streamlined while also accommodating changing utility business models.

Ontario will work with the OEB and LDCs to redesign the electricity bill to make it more useful for consumers in understanding and managing their energy costs.

The Province will look to the OEB to review the standards for reliability and quality of service for transmitters and distributors and recommend options for improving the standards. It will also ask the Independent Electricity System Operator (IESO) to review how its planning and policies can improve customer reliability.

The Province will direct the IESO to develop a competitive selection or procurement process for transmission, and to identify possible pilot projects.

Ontario will provide greater transparency for consumers on gasoline pricing through the OEB's transportation fuels review.

General LTEP Questions

Q. How was the Long Term Energy Plan (LTEP) developed?

The process is outlined in the *Electricity Act, 1998*. It starts with a technical report from the Independent Electricity System Operator (IESO), the provincial agency that delivers key services across the electricity sector, including administering Ontario's electricity markets. The technical report provides a 10-year review of the province's electricity system and assesses system requirements over a 20-year forecast period.

In 2016, the Ministry also retained a consultant to prepare a technical report to examine the fuels sector in Ontario.

The technical reports supported an extensive engagement process with the people of Ontario on Ontario's energy system. The Province took this input and incorporated it into the 2017 LTEP.

Alongside the release of the 2017 LTEP the Minister of Energy will be directing the IESO and the Ontario Energy Board (OEB), the agency that regulates the electricity sector, to develop implementation plans.

Once the Minister of Energy has approved implementation plans, the Province, the IESO and the OEB will begin to implement Plan-related programs and policies.

Q. How is the 2017 LTEP different from the 2013 LTEP?

Development of the 2017 LTEP followed a new process, enshrined in legislation last year. On July 1, 2016, the Energy Statute Law Amendment Act, 2016 came into force. It enshrines in legislation a long term energy planning framework that is transparent, efficient, and responsive to changing technology, policy and program needs.

This legislation ensures that energy planning takes a transparent and pragmatic approach, and that future LTEPs are developed consistent with the following objectives:

- Cost-effectiveness;
- Reliability;
- Clean energy;
- Community and Indigenous engagement; and
- Emphasis on conservation and demand management before building new generation.

The legislation also empowers the Independent Electricity System Operator (IESO) to undertake competitive selection or procurement of transmission when appropriate, and this competitive approach will ensure that ratepayers get the best value from infrastructure investments.

The 2017 LTEP is less prescriptive than its predecessors. Further implementation decisions are being left to sector experts at IESO and Ontario Energy Board (OEB).

The 2017 LTEP has also broadened its focus to include the fuels sector, in addition to electricity.

Q. How did you ensure the public's views are reflected in the new plan?

The engagement process for the 2017 LTEP took place between October 2016 and January 2017. The Ministry of Energy visited 17 communities for stakeholder and public sessions. There were also 17 parallel Indigenous engagement sessions.

The Ministry received over 1,500 submissions through the Environmental Registry, and over 2,500 submissions through the online Talks Tool, as well as other channels.

The written and verbal feedback was incorporated into the LTEP policy development process. Summaries of the feedback received from across the province is available on the Ministry's website.

Q. What did it cost to create the LTEP document?

The Ministry engaged an external company, selected from the VOR, to provide specialised graphic design and production of the Long-Term Energy Plan document, supporting materials, and materials for the engagement and consultation process (such as the discussion guide). An external printing firm was used to print the LTEP.

The Ministry engaged a writer through a competitive process to work on materials for the long-term energy planning process, including the discussion guide used for the engagement and consultation process and the LTEP document itself.

Costs for development are still to be finalized, as not all development costs have been processed at this point in time.

Q. Were any of the services outsourced? (writing, design, printing)?

The Ministry engaged an external company, selected from the VOR, to provide specialised graphic design and production of the Long-Term Energy Plan document, supporting materials, and materials for the engagement and consultation process (such as the discussion guide). An external printing firm was used to print the LTEP.

The Ministry engaged a writer through a competitive process to work on materials for the long-term energy planning process, including the discussion guide used for the engagement and consultation process and the LTEP document itself.

Q. How does the 2017 LTEP promote conservation and energy efficiency?

- Ontario is committed to putting conservation first, both as a resource for the energy system and as a tool for consumers to manage their energy costs.
- Conservation and energy efficiency require a sustained commitment if they are to achieve persistent savings over the long term.
- Ontario will work with its agencies to enhance our commitment to conservation by:
 - Continuing to assess the achievable potential for energy conservation, considering initiatives under Ontario's Climate Change Action Plan, and exploring options to enhance the value of our existing investments in conservation.
 - Continuing to set advanced efficiency standards for products and appliances, and exploring setting or updating energy efficiency standards for key electrical equipment in drinking water and wastewater treatment plants.
 - Encouraging LDCs to further pursue energy efficiency measures, such as measures that reduce line losses and optimize voltage on their distribution systems to achieve customer electricity and cost savings.
 - Expanding Green Button province-wide. Ontario intends to amend legislation that would, if passed, enable Ontario to require electricity and natural gas utilities to implement Green Button Download My Data and Connect My Data.
 - Exploring how to further integrate existing conservation and new low-carbon technology programs offered by the Green Ontario Fund for a streamlined, customer-centric approach.

Q. How does the 2017 LTEP support Ontario's Climate Change Action Plan (CCAP)?

Ontario is taking a leading role in the global fight against climate change. Coal went from 25% of Ontario's supply mix in 2003 to zero by the end of 2014. In 2016 our electricity generation was more than 90 per cent free of emissions that cause climate change.

Ontario remains committed to an electricity system that includes renewable energy generation and supports the goals of the Province's CCAP. The Ministry of Energy worked closely with the Ministry of the Environment and Climate Change throughout the development of the 2017 LTEP to ensure the consideration of Ontario's emissions reduction targets.

Ontario will use proceeds from the province's cap-and-trade program to fund actions to reduce GHG emissions, such as supporting Ontarians in shifting away from fossil fuels and investing in emerging clean technologies. Proceeds are projected to be \$1.8 billion in 2017-18 and \$1.4 billion annually, starting in 2018-19. These funds will help to fight climate change, reduce greenhouse gas emissions and transition Ontario to a low-carbon economy.

Initiatives to address the climate challenge in the energy sector include:

- Ontario will encourage the construction of near net zero and net zero energy and carbon emission homes and buildings to reduce emissions in the building sector.
- Ontario is expanding the options for net metering to give building owners more opportunities to integrate renewable energy generation and energy storage technologies.
- Ontario will continue to work with industry partners to introduce renewable natural gas into the province's natural gas supply and expand the use of lower-carbon fuels for transportation.
- Ontario will strengthen the ability of the energy industry to anticipate the effects of climate change and integrate its impacts into its operational and infrastructure planning.

Q. How will the 2017 LTEP support Indigenous leadership and participation in Ontario's energy sector?

Ontario will review current programs and evaluate how to improve the availability of conservation programs for First Nations and Métis, including communities served by Independent Power Authorities.

Ontario will continue to prioritize the connection of remote First Nation communities to the grid and continue to support the four First Nations where transmission connection is not economically feasible.

The Aboriginal Community Energy Plan program will be expanded to help communities implement their community energy plans and support Ontario's Climate Change Action Plan.

Ontario will engage with First Nations and Métis to explore options for supporting education and capacity building, the integration of small-scale renewable energy projects, net metering and other innovative solutions that address local or regional energy needs and interests.

Innovative financing models and support tools will be investigated to address barriers to the financing of projects led or partnered by First Nations or Métis.

Ontario will report back to First Nations and Métis between Long-Term Energy Plans to provide updates on the province's progress and seek ongoing feedback.

Ontario's Natural Gas Grant Program will support the expansion of natural gas access to First Nation communities.

Q. How will the 2017 LTEP address regional needs?

With the first cycle of regional planning completed, the Province is directing the IESO to review the regional planning process and report back with options and recommendations that address the challenges and opportunities that have emerged.

The Province will continue to work with its agencies to implement the Conservation First policy in regional and local energy planning processes.

Ontario's Climate Change Action Plan has reinforced the importance of community energy plans, and indicated Ontario's continued support for them.

Ontario has established seven pipeline principles to evaluate oil and natural gas pipelines, and is committed to public engagement when it undertakes reviews of major pipeline projects.

Bill Redesign:

Q. The LTEP mentions redesigning electricity bills. Is this just a ploy to hide information in people's bills or to include pats on the back for the government?

Response:

The Ministry recently introduced new invoicing requirements to support transparency and communication of the changes made under Ontario's Fair Hydro Plan (OFHP).

As of July 1, 2017, invoices are required to display standardized on-bill OFHP messaging, as well as include quarterly bill inserts to inform customers about OFHP initiatives.

The Ministry has also removed outdated messaging requirements from invoices (e.g., 8% provincial rebate, DRC exemption) in order to free-up space and avoid confusion.

Despite these recent changes, there is an opportunity to further revise the regulatory framework on invoicing to improve the value of electricity bills to all consumers; ensuring they get the most out of their bills.

In pursuit of this effort, the Ministry plans to launch a Redesign Action Plan (RAP) aimed at improving the appearance and comprehension of electricity invoices. LDC's are playing an important role in the redesign process, and any input they provide will play a vital role in the outcome of the project.

Net Metering:

Q. How does net metering actually help Ontarians save money on electricity? The capital costs, maintenance, etc., are going to be a huge risk burden on those who can even afford it. And what about those who can't?

And isn't this just shifting responsibility for electricity generation to the people of Ontario, rather than focusing on providing them with affordable electricity, which this government has failed to do?

Net metering is a billing arrangement between a Local Distribution Company (LDC) and a customer. Under a net metering arrangement, an electricity customer, such as a property owner

or business, can generate electricity from a renewable source for their own use while still drawing electricity from the local distribution grid when needed.

Each billing period, the LDC credits the customer's electricity bill for the value of the electricity they supplied to the grid, offsetting the cost of the electricity they consumed from the grid.

We are proposing to enhance Ontario's net metering framework as part of our commitment to transition the Feed-in Tariff (FIT) and microFIT programs from a generation purchasing program to a net metering based approach.

This would allow the province to continue to encourage new sources of renewable electricity supply without relying on the long-term contracts and fixed pricing of the FIT and microFIT programs.

We have also engaged stakeholders and Indigenous groups on these potential updates and incorporated their feedback as policy options are considered.

Improving value for customers:

Q. How is the OEB equipped to establish quality customer service across the province, when the gap between where we are and where we need to be is so massive?

Why won't the government step in, and table legislation that mandates LDCs to treat customers fairly, rather than inching forward making minimal progress?

The Government is committed to putting energy consumers first.

The OEB is an independent regulatory body. Its core mandate is to protect the interests of Ontario's energy consumers with respect to prices, adequacy, reliability and quality of electricity services.

The responsibilities of the OEB include licensing energy companies, setting rates and fees for regulated entities of the energy sector, and approving construction of transmission lines and pipelines.

The OEB also develops policies that directly affect Ontario's energy industry, through activities including:

- Stakeholder working groups
- Public consultations
- Research and review of practices in other provinces or countries

The Minister of Energy can request that OEB examine report and advise on specific energy issues or take steps to support government policies through ministerial directives.

Smart Meters and Time-of-Use (TOU):

Q. TOU pricing and other conservation efforts haven't been particularly effective. Isn't it true that the best way to make people conserve electricity is to make it more expensive? How does that work with policies outlined in the LTEP?

Smart meters provide environmental and system benefits, reduce costs over the long-term, and reward consumers who shift their consumption away from times when electricity is most costly to produce.

Over 4.8 million smart meters are installed across Ontario. Smart meters have enabled time-of-use (TOU) pricing – the price we pay for electricity now better reflects the cost of producing it at peak and off-peak times.

With TOU, customers have the ability to better manage their costs by reducing or shifting their consumption to off-peak times when electricity is less expensive to produce. Doing this reduces Ontario's overall peak demand which means we can defer or avoid costs to invest new generation infrastructure.

Smart meters are helping electric utilities pin-point and respond more quickly to outages. They are giving utilities the granular information they need to monitor, operate and plan the system more efficiently.

Smart meters facilitate participation in conservation and demand response programs which are designed to help consumers better manage their usage while simultaneously helping to manage demands on the system.

Smart meters are the foundation for a modern grid, which will enable Ontarians to realize the full value of emerging technologies and applications such as electric vehicles, electricity storage, and home energy automation systems.

Smart meters are only the first step in building a smart, modern grid for Ontario. The basic infrastructure delivering electricity to Ontarians has largely remained unchanged for decades.

- New smart grid technology is becoming available that can benefit consumers and distribution companies through better reliability, improved asset performance, and resiliency to external events.
- Grid modernization technologies – including sensors and communications infrastructure – can provide the data and information needed to encourage new business models and enable customer choice.
- The smart grid will enable Ontarians to realize the full value of emerging technologies and applications such as electric vehicles, electricity storage, and home energy automation systems.

These value propositions are enabled by our early investments in smart meters. They are a catalyst for modernizing our energy infrastructure and for providing customers with greater visibility and control of their energy use.