

Chapter 4

Progress on Conservation Targets

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Abstract

This chapter describes the province's progress in meeting any targets it has established for reducing the use or making more efficient use of electricity, natural gas, propane, oil and transportation fuels. The ECO considers "government-established targets" to result from either a formal government policy or a Minister directing activities that specify an amount of energy to be conserved.¹

The tables in this section provide an overview of progress towards government-established energy targets for the 2015-2016 reporting year.

Progress on all targets is reported as of December 31, 2015, unless otherwise indicated.

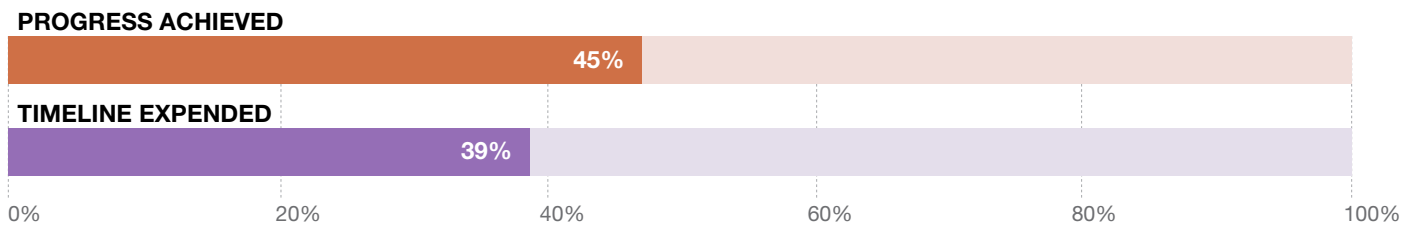
Note: Several targets reviewed last year are not included in this year's review because:

- The target period is completed (i.e., old electricity utility targets, energy storage)
- The target was superseded (i.e., the low carbon fuel standard, 1 in 20 vehicles driven to be EVs)
- The target was abandoned (i.e., the Premier's agreement at the 2008 Council of the Federation)
- It is not a target (i.e., the Ministry of Education's energy use database)

4.1 Electricity Conservation Targets

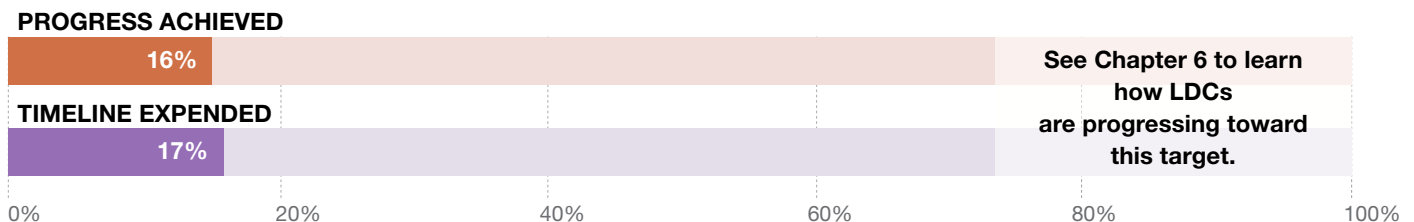
4.1.1 Long-Term Energy Plan Target

Target	30 TWh reduction of electricity demand in 2032, due to conservation efforts from 2005 onwards
Source	Long-Term Energy Plan 2013
Responsibility to Address	Ministry of Energy / Independent Electricity System Operator
Update²	13,530 TWh of electricity savings in 2015, not all of which will persist until 2032 (from: utility run conservation programs, codes and standards, pricing policies, and other programs not delivered by LDCs and the IESO)



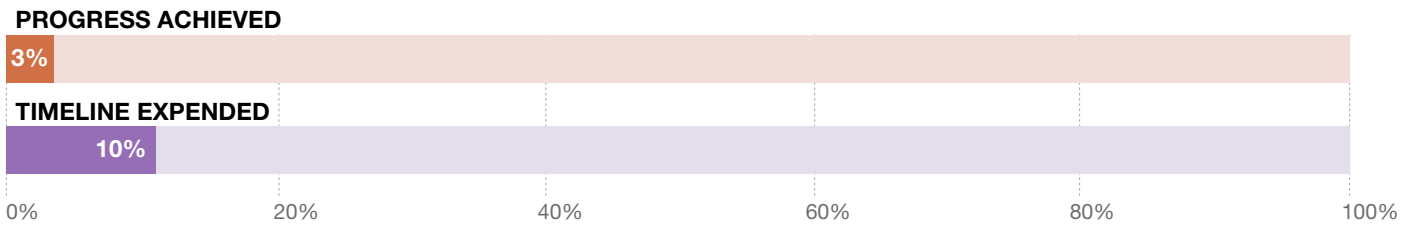
4.1.2 Electricity Conservation Programs (Utility-Run)

Target	7 TWh reduction of electricity demand in 2020, due to conservation activities by distribution utilities between 2015-2020
Source	2015-2020 Conservation First Framework (Ministry of Energy Direction to the Independent Electricity System Operator (IESO)) ³
Responsibility to Address	Local Distribution Companies, with oversight by IESO
Update	In 2015, conservation savings that will persist until 2020 were 1.1 TWh ⁴
Relationship with other Conservation Targets	Achievements contribute to the province's conservation target of 30 TWh by 2032, as set out in the 2013 Long-Term Energy Plan



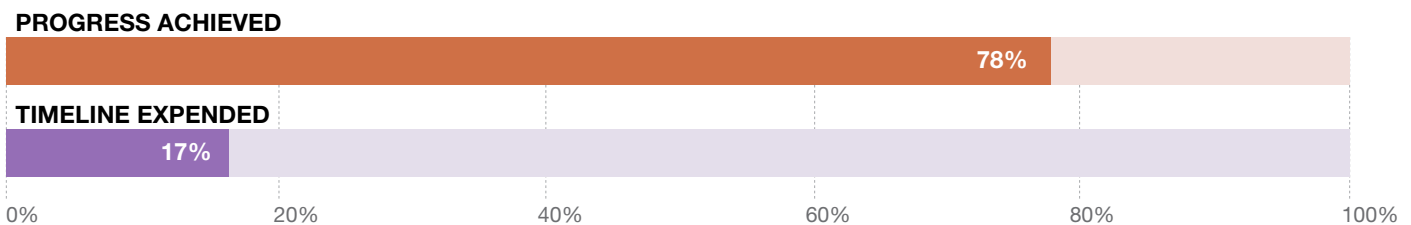
4.1.3 Transmission-Connected Customer Savings

Target	1.7 TWh reduction in annual electricity demand from transmission-connected customers, from projects approved by the end of 2020
Source	Ministry of Energy direction to the Independent Electricity System Operator
Responsibility to Address	Independent Electricity System Operator
Update	The latest verified results, as of the end of 2015, indicate the Industrial Accelerator Program has achieved 49 GWh (3%) of the 1.7 TWh target 2015 results are expected to increase slightly due to adjustments ⁵



4.1.4 Electricity Demand Response Savings

Target	Demand Response to meet 10% of peak demand in 2025 (2,400 MW under current forecasts)
Source	2013 Long-Term Energy Plan
Responsibility to Address	Ministry of Energy / Independent Electricity System Operator
Details	<p>Progress towards this target results from the following programs:⁶</p> <ul style="list-style-type: none"> • Time-of-use (TOU) pricing strategies • The Industrial Conservation Initiative (ICI) • The Capacity-Based Demand Response (CBDR) program⁷ • Dispatchable Load • The Demand Response Pilot program⁸ • Peaksaver residential Demand Response program⁹ • Demand Response Auction¹⁰
Update	<p>1,840.8 MW peak demand reduction in 2015 due to:</p> <ul style="list-style-type: none"> • ICI 1,075 MW • TOU 58.7 MW • CBDR 526.2 MW¹¹ • Peaksaver 180.9 MW



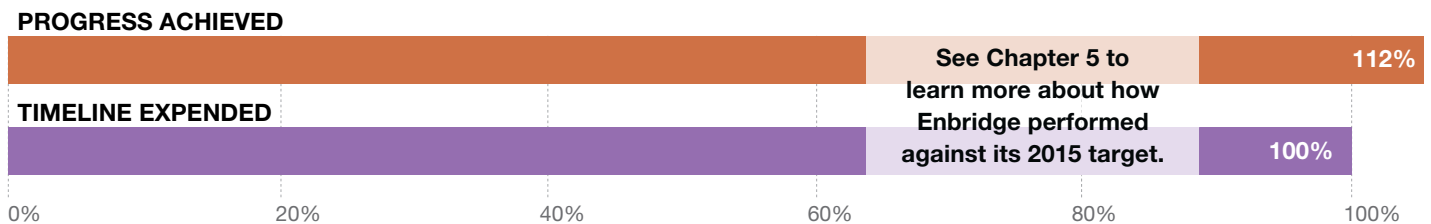
4.2 Natural Gas Conservation Targets

Ontario’s two large natural gas utilities (Enbridge Gas Distribution and Union Gas) have annual performance targets for their conservation activities. These targets and their reported results must be approved by the Ontario Energy Board (OEB). Depending on their verified results, the gas utilities receive varying amounts of financial incentives.

While these targets are not “government-established targets,” the ECO also reports on them to provide a more complete understanding of the state of energy conservation in Ontario.

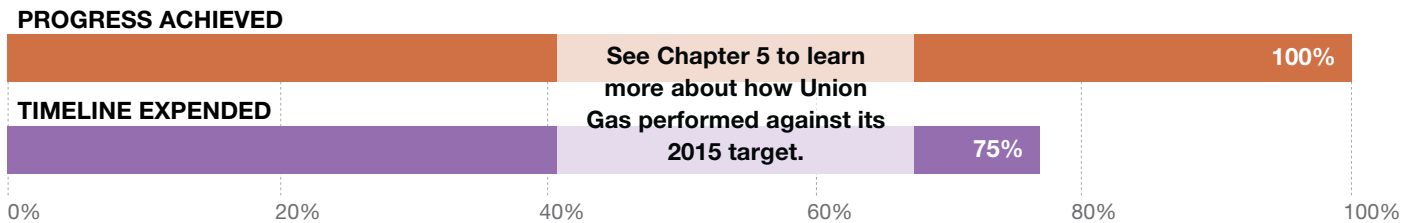
4.2.1 Enbridge Conservation Target

Target	0.77 billion m³ cumulative natural gas savings from 2015 programs
Source	Enbridge’s <i>2015-2020 Demand Side Management Plan</i> ¹² in response to OEB’s <i>2015-2020 Natural Gas DSM Framework</i> ¹³
Responsibility to Address	Enbridge Gas Distribution
Update	<p>2015 Cumulative Savings: 0.866 billion m³¹⁴</p> <p>Proposed 2020 conservation target: 6.36 billion m³ cumulative natural gas savings due to conservation activities between 2015-2020¹⁵</p> <p>OEB’s decision in response to the proposed savings targets for 2016-2020 calls for a 10% increase to Enbridge’s proposed 2016 target, followed by an adjustment mechanism for each subsequent year based on verified savings¹⁶</p>



4.2.2 Union Gas Conservation Target

Target	2.1 billion m³ of cumulative natural gas savings from 2015 programs
Source	Union Gas, <i>2015 Demand Side Management Draft Annual Report</i> ¹⁷
Responsibility to Address	Union Gas
Update	<p>2015 Cumulative Savings: 1.57 billion m³¹⁸</p> <p>Proposed 2020 conservation target: 6.16 billion m³ cumulative natural gas savings due to conservation activities between 2016-2020 (Union Gas' <i>2015-2020 Demand Side Management Plan</i>¹⁹, in response to OEB's <i>2015-2020 Natural Gas DSM Framework</i>²⁰)</p> <p>OEB's decision in response to the proposed savings targets for 2016-2020 calls for a 10% increase to Union's proposed 2016 target, followed by an adjustment mechanism for each subsequent year based on verified savings²¹</p>



4.3 Transportation Fuel Conservation Targets

The transportation fuel targets reported here involve fuel switching away from petroleum fuels (gasoline and diesel). As this fuel switching reduces the use of

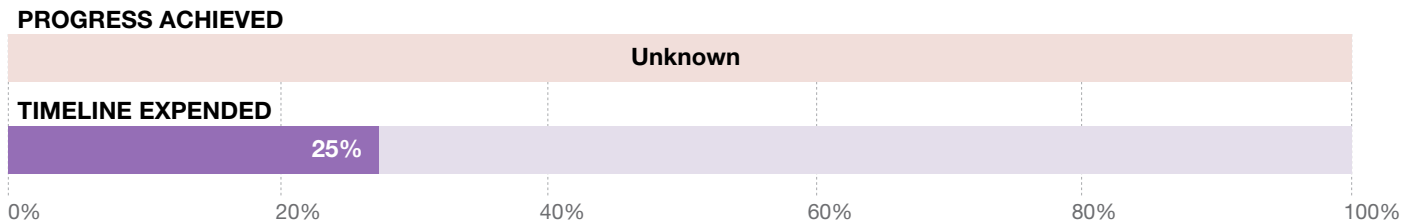
petroleum fuels and may also improve energy efficiency (particularly for electric vehicles), these targets are considered to fall within the ECO's reporting mandate.

4.3.1 Renewable Fuel Standard for Gasoline

Target	Reduce greenhouse gas emissions from gasoline by 5% by 2020 via Renewable Fuels Standard for gasoline
Source	Climate Change Action Plan, 2016
Responsibility to Address	Ministry of the Environment and Climate Change (MOECC)
Update (as of July 2017)	<p>A Renewable Fuels Standard for gasoline was proposed on the Environmental Registry (# 012-7923) on January 11, 2017. As of the time of writing, no decision has been posted. This target appears to supersede Ontario's pre-existing commitment to establish a low carbon fuel standard; a target that was never acted upon.</p>

4.3.2 Increase Number of Electric and Hydrogen Vehicles

Target	5% of passenger vehicle sales to be electric or hydrogen in 2020 <i>(Supersedes previous target: 1 in 20 vehicles driven in Ontario to be electric (EV) by 2020)</i>
Source	Climate Change Action Plan, 2016
Responsibility to Address	Ministries responsible for initiatives that will help the government achieve its target: Transportation: EV incentives and charging infrastructure Energy: EV overnight charging Environment and Climate Change: vehicle replacement Finance: working with federal government to eliminate HST on battery-EVs Infrastructure: EV charging at government facilities Municipal Affairs: Building Code amendments
Update	The Ministry of Transportation does not have data on vehicle sales in Ontario, and as a result is unable to report on progress towards this target.



4.4 Propane, Oil, and Other Fuels Conservation Targets

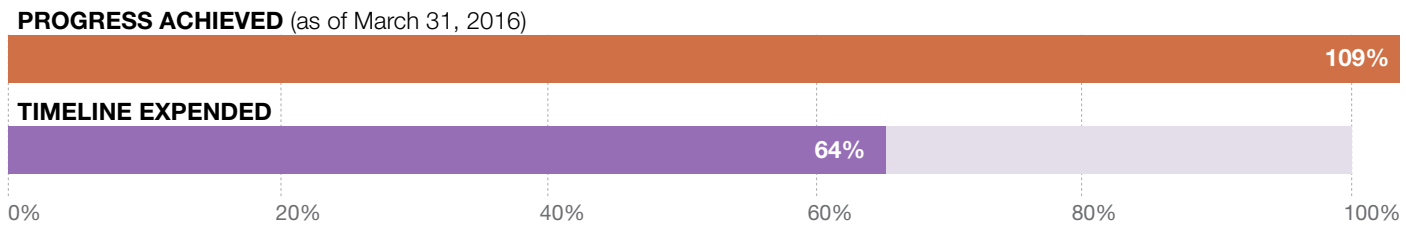
The Ministry of Energy’s 2017 Long-Term Energy Plan discussion guide, *Planning Ontario’s Energy Future*, poses the question “should Ontario set conservation targets for other fuel types, such as oil and propane.”²²

The ECO has urged the government to do just that in two recent reports: *Developing the 2017 Long-Term Energy Plan* (December 2016), and *Conservation: Let’s Get Serious* (May 2016).²³ No decision has yet been made by the Ministry.

4.5 Ontario Public Service Energy Use Reduction Targets

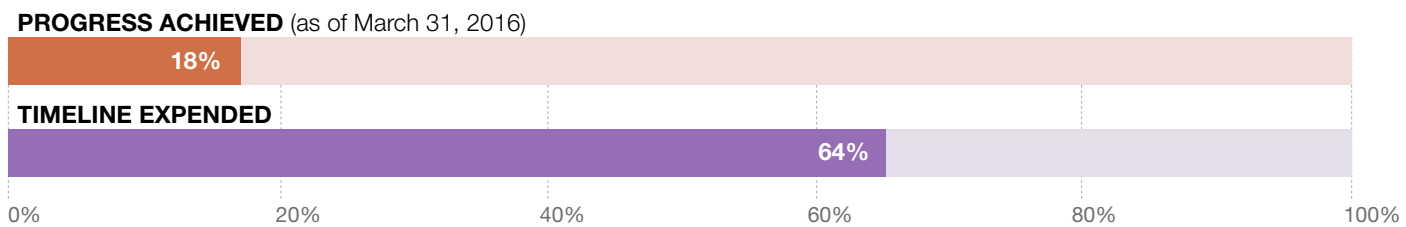
4.5.1. Ontario Public Service Greenhouse Gas Reduction Target

Target	Reduce greenhouse gas emissions from the Ontario Public Service by 27% by 2020/2021, compared against the 2006 baseline
Source	2009
Responsibility to Address	Treasury Board Secretariat (as of 2017, MOECC is responsible for this target)
Update (as of March 31, 2016)	<p>GHG emissions reduced by an estimated 81.7 kt (-29.5% from the 2006 baseline)²⁴</p> <p>Vehicle fuel consumption: -26.7% CO₂e Air travel: -8.0% CO₂e Energy use in government-buildings: -31.8% CO₂e*</p> <p><i>* a large part of the drop in emissions from building energy use is caused by the lower emissions profile of the electricity grid in 2015.</i></p>



4.5.2 Ontario Public Service Electric Vehicle Target

Target	Add 500 electric vehicles to Ontario Public Service fleet by 2020
Source	2009
Responsibility to Address	Treasury Board Secretariat (as of 2017, MOECC is responsible for this target)
Update (as of March 2016)	The OPS vehicle fleet includes 1,412 hybrid vehicles and 90 electric vehicles, up significantly from just 103 hybrid vehicles in 2006



Endnotes

1. Although not stated, the ECO assumes, unless otherwise indicated, that the quantity of energy specified represents net savings (i.e., adjusted for free riders and other factors).
2. Independent Electricity System Operator, information provided to the ECO in response to ECO inquiry (21 March 2017).
3. Direction from Ontario Minister of Energy to Ontario Power Authority, Re: 2015-2020 Conservation First Framework (31 March 2014).
4. In July 2017, the IESO released 2016 results and also updated 2015 results to incorporate late data. According to the IESO, 2015 and 2016 results total 2.6 TWh of savings that will persist to 2020 (38% of target). Independent Electricity System Operator, IESO Bulletin (6 July 2017).
5. By factoring in unverified 2015 adjustments (accounting for projects completed in 2015, but not reported in time for 2015 verification processes) and 2016 reported results, both of which are currently undergoing verification processes, the Industrial Accelerator Program has achieved 196 GW of the 1.7 TWh target (12%) as of December 31, 2016. If considering savings currently under contract, 616 GWh energy savings or 36% of the Industrial Accelerator Program target has been contracted as of May 31, 2017.
6. **Time-of-use (TOU) pricing:** the observed impact of TOU meters during system peaks; **Industrial Conservation Initiative (ICI):** the observed impact of ICI over the high-five peaks days based on eligible participants; **Capacity-Based Demand Response (CBDR):** the quantity of capacity participating in the CBDR program; **Dispatchable Load:** the observed quantity of dispatchable load available during system peak, adjusted for participation in ICI, DR Auction and DR Pilot in order to avoid double counting; **DR Pilot:** the quantity of DR Pilot resources procured, adjusted for participation in the DR Auction in order to avoid double counting; **Peaksaver:** the effective capacity of Peaksaver resources; **DR Auction Target Capacity:** the quantity of capacity the Independent Electricity System Operator seeks to procure through the DR Auction. The quantity is not adjusted for non-performance.
7. The Independent Electricity System Operator transitioned the Demand Response 2 and Demand Response 3 programs to the Capacity Based Demand Response Program in March 2015.
8. Developed by Independent Electricity System Operator in May 2016.
9. The Independent Electricity System Operator (IESO) is in the process of transitioning the Peaksaver PLUS program into an IESO administered market based structure. There was one system wide Peaksaver Plus curtailment event in 2015: July 29th between 2 and 6 pm.
10. A 7% year-over-year growth in the DR Auction target capacity has been instituted in order to meet the target in the 2013 LTEP. (Demand Response Working Group, "Update on Target Capacity and Commitment Period", 30 September 2016)
11. Contracts held by the IESO under a previous Ontario Power Authority Program called Demand Response 3 contracts began to be moved to a transitional market called the Capacity-Based Demand Response (CBDR) program in April 2015. The CBDR program is evolving into a competitive procurement process for demand response capacity using an auction. There is currently 159 MW enrolled in the CBDR program, and the transition schedule is:
 - 37 MW will expire on April 30, 2018, leaving 122 MW in the program;
 - 122 MW will expire on October 31, 2018, after which there will be no capacity enrolled in the CBDR program.
12. Enbridge Gas Distribution, *Multi-Year Demand Side Management Plan (2015 to 2020) Corrected Evidence*, Ontario Energy Board EB-2015-0049 (Scarborough: EGD, 26 June 2015) Exhibit B, Tab 1, Schedule 2, at 3.
13. Ontario Energy Board, *Demand Side Management Framework for Natural Gas Distributors (2015 -2020)*, Report of the Board EB-2014-0134 (Toronto: OEB, 22 December 2014) at 11-12.
14. Enbridge Gas Distribution, *2015 Demand Side Management Draft Annual Report* (Scarborough: EGD, 22 April 2016) Table 3.9.
15. Enbridge Gas Distribution, *Multi-Year Demand Side Management Plan (2015 to 2020) Corrected Evidence*, Ontario Energy Board EB-2015-0049 (Scarborough: EGD, 26 June 2015) Exhibit B, Tab 1, Schedule 2, at 3.
16. Ontario Energy Board, *Union Gas Limited and Enbridge Gas Distribution, Applications for Approval of 2015-29020 Demand Side Management Plans*, Decision and Order EB-2015-0029/EB-2015-0049 (Toronto: OEB, 20 January 2016) at 68, 69.
17. Union Gas, *2015 Demand Side Management Draft Annual Report* (Chatham: UG, 22 April 2016) at 70-71.
18. *Ibid* at Table 3.9.
19. Union Gas, *2015-2020 Demand Side Management Plan* (Chatham: UG, 1 April 2015) EB-2015-0029, Exhibit A, Tab 3, at 12.
20. Ontario Energy Board, *Demand Side Management Framework for Natural Gas Distributors (2015 -2020)*, Report of the Board EB-2014-0134 (Toronto: OEB, 22 December 2014) at 11-12.
21. Ontario Energy Board, *Union Gas Limited and Enbridge Gas Distribution, Applications for Approval of 2015-29020 Demand Side Management Plans*, Decision and Order EB-2015-0029/EB-2015-0049 (Toronto: OEB, 20 January 2016) at 68, 69.
22. Ministry of Energy, 2017 Long-Term Energy Plan discussion guide, *Planning Ontario's Energy Future* (Toronto: MENG, 2016) at 37.
23. Environmental Commissioner of Ontario, *Developing the 2017 Long-Term Energy Plan* (Toronto: ECO, 6 December 2016) at 18; Environmental Commissioner of Ontario, *Conservation: Let's Get Serious, Annual Energy Conservation Progress Report – 2015/2016* (Toronto: ECO, 31 May 2016) at 151.

24. Treasury Board Secretariat, information provided to the ECO in response to an ECO information request (24 April 2017):

	Baseline Energy Amount (2006/07)	Energy Consumption in 2009/10	Energy Consumption in 2014/15 (Target Year)	Energy Consumption in 2015/16	% GHG Reduction from Baseline						
					09/10	10/11	11/12	12/13	13/14	14/15	15/16
Vehicle Fuel [Litres and kt CO ₂ e (GHG)]	41,365,508 L 98.3 kt CO ₂ e	37,638,885 L 89.4 kt CO ₂ e	32,188,324 L 76.5 kt CO ₂ e	30,328,473 L 72.0 kt CO₂e	9.1% CO ₂ e	8.3% CO ₂ e	10.9% CO ₂ e	16.2% CO ₂ e	18.1% CO ₂ e	22.2% CO ₂ e	26.7% CO₂e
Air Travel [km and kt CO ₂ e (GHG)]	46,978,380 km 5.6 kt CO ₂ e	38,184,928 km 4.6 kt CO ₂ e	39,848,087 km 4.8 kt CO ₂ e	43,210,992 km 5.2 kt CO₂e	18.7% CO ₂ e	15.8% CO ₂ e	19.9% CO ₂ e	25.6% CO ₂ e	18.5% CO ₂ e	15.2% CO ₂ e	8.0% CO₂e
Emissions in Facilities*** (provided by MOI) [kt CO ₂ e (GHG)]	<u>2006 Baseline</u> *173.246 kt CO₂e	<u>2009 Calendar Year</u>	<u>2014 Calendar Year</u> **124.417 kt CO₂e	<u>2015 Calendar Year</u> **118.199 kt CO₂e	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u> 28.2% CO₂e from baseline	<u>2015</u> 31.8% CO₂e from baseline
Total: OPS Environmental Footprint [kt CO ₂ e (GHG)]	277.146 kt CO₂e			195.399 kt CO₂e							29.5%

* Baseline will change as a result of changing real estate portfolio. For guidance, the WRI standard for corporate reporting is used as guidance in making baseline adjustments.

**Current reporting year is based on estimate emission factor data supplied by the Ministry of Energy. Data will be trued-up in the next annual report.

***Energy in Facilities data is presented in calendar not fiscal years and includes consumption from the following energy sources: electricity, natural gas, district steam, fuel oil, district hot water, propane and district chilled water.