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Ministry of Transportation Energy Consumption and Greenhouse Gas Emission Report

Truck Inspection Stations For the Period January 1, 2006 to December 31, 2010

Purpose

Through the Green Energy Act (GEA), the government intends to reduce Ontario's carbon footprint by demonstrating leadership in reducing greenhouse gasses and fostering a culture of conservation.

In order to facilitate this, energy consumption reporting is required for all Target Class Facilities on a facility by facility basis. Reporting is the responsibility of the Ministry that has operational control of the facility. Energy consumption reporting is not required for Non-Target Class Facilities.

Currently, the Government of Ontario has two energy targets for government-owned facilities:

- 20% electricity savings by 2012 over 2002/03 baseline
- 19% greenhouse gas (GHG) savings by 2014 over 2006 baseline

This report will be submitted to the Ministry of Infrastructure (MOI) on an annual basis to report on publicly committed targets for government-owned facilities. Ministries are also required to make this report available publicly.

Scope: This report will include consumption for all Truck Inspection Stations (referred to as Target Class facilities) for calendar years 2006 to 2010.

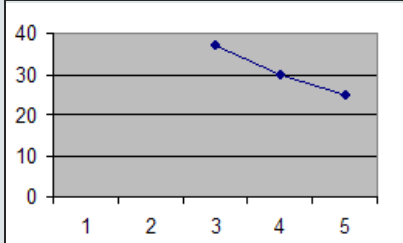
Energy Benchmarks (targets): The Ministry of Transportation (MTO) has not been assigned a target by the Ministry of Infrastructure.

Portfolio Overview

Target Class Facilities: Truck Inspection Stations have been identified by the Ministry of Infrastructure as Target Class facilities for the Ministry of Transportation. Truck Inspection Stations are located throughout the province on provincially-owned highway right-of-ways. These facilities are used by the Commercial Motor Vehicle Inspection Program, Road User Safety Division. This program monitors and inspects commercial motor vehicles and drivers through a network of fixed inspection facilities and mobile patrol units to ensure legislative compliance with highway safety standards. The focus of this program is on mechanical and driver fitness. Truck Inspection Stations typically have one building, with heated weigh scales and external lighting.

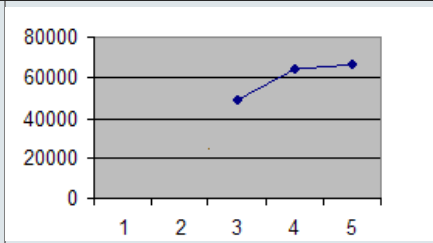
Non-Target Class Facilities: Highway Patrol Yards have been identified as Non-Target class facilities for the Ministry of Transportation and are therefore not within the scope of the required facility by facility reporting. Patrol Yards are located throughout the province and typically have one or two salt or sand domes, a garage building, storage facilities and external lighting. Patrol Yards are occupied and totally operated by private sector operators.

Energy Intensity Consumption Trends
(ekwh / Inspections)



Year

Total Number of Truck Safety Inspections
(ekwh / Inspections)



Year

Progress

In 2008, MTO inspected 48,996 trucks at our network of 34 Truck Inspection Stations throughout the province. The Greenhouse Gas (GHG) emissions per inspection were .0063 tonnes and the electricity consumed per inspection was 36.8 kilowatts.

In 2009, the number of inspections increased to 64,182 which was a 31% increase. However, the annual consumption of electricity only increased by less than one percent and the greenhouse gas emissions fell by more than 50%. The electricity per inspection fell by 25%.

In 2010, the downward trend continued while the number of inspections increased. There were 2,229 more inspections than in the previous year and the annual electricity consumption decreased by 286,620 kilowatts. Although greenhouse gases increased by 10%, this is due to an increase in the emissions factor used in the calculations – not in the actual kilowatts used. (Natural Resources Canada reviews and releases revised emissions factors each year.) The electricity used per inspection decreased for the third straight year – this time by an additional 22% and an overall decrease from 2008 by 55%.

Although the number of truck inspections conducted by the Ministry of Transportation has increased each year to keep Ontario's roads safe, the amount of electricity utilized has reduced for each year that statistics have been available. In 2008, it took 36.8 kilowatts of electricity per inspection – in 2010 this was reduced to 23.8 kilowatts per inspection.

Energy Conservation Measures (including renewables)

Target Class Facilities: In 2010 and 2011, MTO invested \$162,000 in renewable energy devices at two Truck Inspection Stations. In 2010, a 6 kw windmill/solar panel system was installed at the Sarnia Truck Inspection Station and in 2011 a 10kw rooftop solar panel system was installed at the Windsor Truck Inspection Station. These systems are designed to provide power to the Truck Inspection Station first, with any excess power fed into the provincial grid. At times when alternative power is not available for the facility's requirements; power is drawn from the grid. However, sometimes more power is generated than is needed, and this excess power is fed into Ontario's power grid lessening the province's need to generate power from less green sources.

Other initiatives implemented at Truck Inspection Stations include converting electric heat to natural gas or propane, applying solar film to windows, and installing timers on lighting devices.

New Truck Inspection Stations are being built with energy conservation features. The Putnam South Truck Inspection Station was constructed using energy efficient lighting, including LED lights with dimmer switches, fluorescent and compact fluorescent lamps. Separate switches were installed where possible to allow for maximum control of lighting intensity. There are no incandescent lamps in the facility. Heating and cooling is primarily obtained through the use of geothermal heat pumps. The building has been pre-ducted to allow for easy installation of solar panels in the future as funding permits. All entrances have doubled entry doors to improve heating and air conditioning efficiency.

Road User Safety Division, Central Region has established a 'Green Team' comprised of management representatives and employees who meet on a regular basis to identify new energy conservation ideas. An initiative currently under development is an energy savings competition between Truck Inspection Stations.

Non-Target Class Facilities: The Ministry of Transportation encourages the operators of the Patrol Yards to conserve energy. These contractors are required to obtain ISO registration. Demonstrated energy savings is one aspect of obtaining ISO certification.

Conservation Forecasting and Long Term Plan

This report has been prepared to retroactively report on energy consumption at Target Class facilities for the calendar years 2006 to 2010. As per the requirements of the Ontario Facilities Energy Reporting Directive, a second report will be prepared to report on energy consumption for 2011 and 2012. This subsequent report will also look forward to identify and document an action plan for the ministry to ensure it continues to make energy conservation progress in our facilities.

The ministry will continue to replace all appliances (i.e. refrigerators, heaters, air conditioners, etc.) at the end of their useful life with energy efficient options. As lighting sources are replaced, energy efficient bulbs and fixtures will be selected. We will continue our work to identify opportunities to install alternative energy devices at our facilities. Steps will continue to be taken throughout the ministry to increase awareness in order to change the behaviours of employees to further reduce energy consumption.

Communication and Awareness

The Ministry of Transportation has implemented a variety of communication methods to increase employee awareness of greening initiatives in its facilities. MTO has conducted seven annual

ministry-wide Energy Awareness Contests directed at increasing employee awareness of energy conservation. There are a number of 'Green Teams' established throughout the ministry to promote greening strategies and initiatives. Divisional newsletters have been used to promote various energy savings initiatives, including the installation of solar panels at a Truck Inspection Station. Organized learning sessions have been held throughout the province for staff, including Lunch and Learn sessions, private sector workshops and seminars. MTO is an active participant in Earth Day and has a formal documented inter-ministerial program named 'Sustainability inSight' which supports and encourages employee engagement in energy management.



6 kW Windmill -Solar device at Sarnia TIS



10 kW Solar device at Windsor TIS

[Download Report data - PDF](#) (24.0 KB)

Ministry of Transportation- Annual Energy Consumption

Year	Total # of Inspections	Current Emission Factor	Energy Type	Annual Total Consumption	Total Energy Consumed (ekWh)
2006	n/a	0.00019	Electricity	1538866	1538866
		0.001901	Natural Gas	4969	52423
		0.001544	Propane	0	0
			Water	50	
TOTALS:				n/a	1591289

Year	Total # of Inspections	Current Emission Factor	Energy Type	Annual Total Consumption	Total Energy Consumed (ekWh)
2007	n/a	0.00021	Electricity	1634139	1634139
		0.001901	Natural Gas	4607	49268
		0.001544	Propane	0	0
			Water	74	
TOTALS:				n/a	1683407

Year	Total # of Inspections	Current Emission Factor	Energy Type	Annual Total Consumption	Total Energy Consumed (ekWh)
2008	48996	0.00017	Electricity	1801842	1801842
		0.001901	Natural Gas	14807	156213
		0.001544	Propane	0	0
			Water	254	
TOTALS:				n/a	1958055

Year	Total # of Inspections	Current Emission Factor	Energy Type	Annual Total Consumption	Total Energy Consumed (ekWh)
2009	64182	0.0001	Electricity	1869949	1869949
		0.001901	Natural Gas	55043	580704
		0.001544	Propane	5816	42974
			Water	244	
TOTALS:				n/a	2493627

Year	Total # of Inspections	Current Emission Factor	Energy Type	Annual Total Consumption	Total Energy Consumed (ekWh)
2010	66411	0.00013	Electricity	1583328	1583328
		0.001901	Natural Gas	48385	510462
		0.001544	Propane	5815	42967
			Water	245	
TOTALS:				n/a	2136757

on Summary

GHG Emissions (total)	GHG Intensity (GHG/inspections)	Energy Intensity (ekwh/inspections)
292.38	n/a	n/a
9.45	n/a	n/a
0.00	n/a	n/a
301.83		

GHG Emissions (total)	GHG Intensity (GHG/inspections)	Energy Intensity (ekwh/inspections)
343.17	n/a	n/a
8.76	n/a	n/a
0.00	n/a	n/a

351.93

GHG Emissions (total)	GHG Intensity (GHG/inspections)	Energy Intensity (ekwh/inspections)
306.31	0.0063	36.7753
28.15	0.0006	0.0867
0.00	0.0000	0.0000
334.46	0.0068	36.8820

GHG Emissions (total)	GHG Intensity (GHG/inspections)	Energy Intensity (ekwh/inspections)
186.99	0.0029	29.1351
104.64	0.0016	0.3105
8.98	0.0001	0.6696
300.61	0.0047	30.1152

GHG Emissions (total)	GHG Intensity (GHG/inspections)	Energy Intensity (ekwh/inspections)
205.83	0.0031	30.4257
91.98	0.0014	0.3224
8.98	0.0001	0.6470
306.79	0.0046	24.8108