



MINISTRY OF ECONOMIC DEVELOPMENT, EMPLOYMENT & INFRASTRUCTURE



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2013 Energy Consumption and Greenhouse Gas Emission Report

Data Tables

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Ministry of Infrastructure / Infrastructure Ontario Five Year Energy Conservation Strategy (2013 to 2017) & Enterprise-Wide Summary (2011 to 2012)

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1.0 MINISTRY OF INFRASTRUCTURE PORTFOLIO OVERVIEW & SUMMARY

In 2009, the Provincial Government made a commitment to reduce its greenhouse gas (GHG) emissions; specifically:

- A 19% reduction by end of 2014 over 2006 baseline; and
- A 27% reduction by end of 2020 over 2006 baseline.

The Ministry of Infrastructure (MOI)-owned real estate portfolio, managed by Infrastructure Ontario (IO), makes up the majority of the targeted provincial GHG emissions; and as such, assumes a significant responsibility in achieving the targeted reductions.

2011-2012 Energy Consumption and GHG Emission Plan [Energy Plan]:

IO and Ministries are required to post an Energy Plan on an annual basis. The first Energy Plan covered the 2006 baseline year through 2010. The second Energy Plan (current plan) covers the 2011 & 2012 data. Beginning in 2014, each reporting ministry will post an Energy Plan on an annual basis, representative of energy data from the previous year only. This schedule is reflected in Figure 1-1 below.

Figure 1-1

- 2012
Energy Consumption and GHG Emission Plan
- 2013
Energy Consumption and GHG Emission Plan
- 2014 and onward Energy Consumption and GHG Emission Plan
- 2006 Data
- 2007 Data
- 2008 Data
- 2009 Data
- 2010 Data

- 2011 Data
- 2012 Data
- Previous Year

The objective of the Energy Plan is to:

- Outline progress and strategies to meet and exceed Ontario Public Service (OPS) GHG reduction targets across the MOI owned built environment;
- Establish a baseline, methodology and a framework to achieve energy conservation targets across the IO managed portfolio; and
- Achieve GHG emission reduction goals set for 2014 and 2020.

IO is faced with the challenge of reducing emissions while maintaining performance and customer satisfaction within its managed portfolio. This strategy will focus on activities and actions designed to improve operational efficiency that will result in reductions in electricity, fuel and steam consumption, which will ultimately lower GHG emissions and utility costs.

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2.0 Buildings Overview

IO's total managed real estate portfolio includes approximately 50 million square feet of buildings and structures, encompassing approximately 850 core buildings. IO has identified that its buildings with the highest energy use constitute a comparatively small subset of its managed portfolio. Specifically, 20% of buildings are responsible for 80% of total energy consumption in IO's managed portfolio.

IO's managed portfolio is spread across the province, consisting of various building usage types, including but not limited to the following:

- Courthouse - Buildings consisting of courtrooms, holding cells and office space.
- Service Detachment - Emergency operations and policing home base facilities.
- Data Centre - Where at least 80% of the facility is used for extensive technology in an environmentally controlled and secured area.
- Laboratory - Buildings used for experimental studies and/or testing and/or research requiring special purpose improvements.
- Office - General administration of program delivery.
- Other – Buildings used for a variety of purposes. The Ontario Science Centre is an example of a building in this category.

Figure 2-1 represents approximate total energy consumption by building use across the entire managed portfolio for 2006.

Figure 2-1

Total Energy Consumption (ekWh) By Building Use - 2006
Medical - 1% Storage A - 1% Miscellaneous - 1%
Assembly - 2% Office C - 2% Museum - 3% Classroom - 3% Detachment - 5% Laboratory - 14% Office B - 14%
Courthouse - 15% Office A - 39% 5% 14% 14% 39% 15%

Figure 2-2 represents approximate total energy consumption by building use across the entire managed portfolio for 2012.

Figure 2-2

Total Energy Consumption (ekWh) By Building Use - 2012
Medical - 1% Miscellaneous - 1% Office C - 1%
Classroom - 1% Museum - 2% Detachment - 3% Assembly - 6% Laboratory - 7% Office B - 14%
Courthouse - 17% Office A - 47% 6% 7% 14% 47% 17%

Age:

More than 50% of the assets in IO's portfolio are over 40 years old. These assets require significant capital investment in order to adequately maintain operations. In addition, these assets are more likely to be high energy users, with aging structures and equipment, employing outdated materials, methods and technologies. Many of IO's older buildings are important for heritage and cultural reasons, adding additional layers of management complexity.

Program Use and Operations:

Each building type operates differently, thereby presenting unique energy efficiency challenges. For example, courthouses operate during the day with rigid operating requirements, while data centres operate around the clock. Further, courthouses have high security implications, while office buildings are influenced by occupant and program requirements.

Building Equipment:

Among operational equipment, each building has its own unique HVAC equipment, fuel, automation systems, etc. that create a challenge for program-wide initiatives. An office building in Ottawa could use natural gas to generate heat, whereas Queen's Park uses district steam. Some sites could use propane while others consume fuel oil. Electricity could be consumed by thousands of pieces of equipment at a single site.

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3.0 Target and Reporting Baseline

Overview of the 2006 Baseline

Of all MOI owned assets managed by IO, 455 buildings were selected as the 2006 reporting baseline. This represents 96% of the total energy consumption within MOI's total owned portfolio.

Methodology:

The list of buildings selected for the 2006 GHG baseline (attached in the appendix) was established based on differentiation between target vs. non-target class facilities. MOI, in collaboration with IO and ministries, identified both target class facilities and non-target class facilities within the directive. The non-target class facilities category was created to exclude government operations where conserving energy in facilities poses a direct health and safety risk to the public, impacts essential services, or where no opportunities of scale exist (for example, communication towers).

Fuel Types:

The Directive reports GHG emissions (in tonnes eCO₂). For IO, emissions are derived from a variety of energy fuel types, such as:

- Electricity
- Natural gas
- Fuel oil (2)
- Propane
- Steam
- Hot water
- Chilled water

Each fuel type produces different levels of emissions. Some fuel types burn cleaner than others. Some are burned on-site (such as natural gas) while others, like electricity, are generated remotely and distributed to the site. Although it is impossible to accurately depict the direct emissions for each individual site, Environment Canada provides guidance in the form of Emission Factors (EF) that can be used to estimate a building's emissions on fuel consumption. IO has a diverse portfolio which reports on all of these fuel types. Note: Diesel is not considered part of the directive and is not included in the final emission reporting.

Figure 3-1 illustrates target class building energy consumption, by energy source during the 2006 baseline year. Electricity remains the largest energy type consumed, followed by natural gas and steam. The other energy sources individually represent less than 1% of the total portfolio energy consumption.

Figure 3-1

Consumption by Utility (kWh_{eq}) - 2006
Hot Water 0.20% Chilled Water 0.31% Propane 0.47% Fuel Oil 0.52% Steam 10.95% Natural Gas 35.14% Electricity 52.40%
11% 35.2% 52.3%

Comparatively, Figure 3-2 below illustrates the same target class buildings by energy source during the 2012 reporting year. Electricity remains the largest energy type consumed, followed by natural gas and steam. The other energy sources individually represent less than 1% of the total portfolio energy consumption.

Figure 3-2

Consumption by Utility (ekWh) - 2012
Propane - 0.36% Hot water - 0.41% Chilled Water - 0.51% Fuel Oil - 0.62%
Steam - 11.82% Natural Gas - 40.15% Electricity - 46.13% 11.8% 46.1% 40.1%

GHG Calculations:

Energy use by a building results in the emission of GHGs. Each of the energy types has a defined amount of GHGs that is released per unit of energy consumed. In the case of a fuel that is consumed within the building (such as burning natural gas or fuel oil to heat a building), carbon dioxide (and other greenhouse gases) are released as a direct output of the combustion process. In the case of energy that is sourced from the electricity grid or from a district energy plant (hot water and steam), it is the processes that are used in the creation and transmission of those utilities that release GHG. This GHG output is expressed as an emission factor for that particular utility or energy type.

IO's emission factors come from the National Inventory Report (NIR) produced by Environment Canada on a yearly basis. The NIR data has a two-year lag (e.g. 2010 data is reporting in 2012). As a proxy, IO will use a preliminary Ontario electricity emission factor for the previous year (supplied by the Ministry of Energy). As the NIR emission factors are updated, the proxy emission factors will be reconciled.

To calculate GHG, the consumption needs to be first converted to the common unit for the energy type. Once this has been done, the consumption is multiplied by the emission factor to get the resulting GHG.

Utility Consumption x Emission Factor = GHG emissions

Example

To calculate GHGs for 25 gallons of fuel oil:

Step 1: Convert to common unit (optional). The common unit of fuel oil is liters.
25 gallons of fuel oil x 3.78541178 litres/gallon = 94.64 litres

Step 2: Calculate GHG emissions.
94.64 litres x 0.002912 t eCO2/litre = 0.2756 t eCO2

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4.0 Portfolio and Performance Benchmarking

MOI / IO Target Class Facility Progress Report:

		GHG Reporting			
IO	2006 Yearly GHG	2011 Yearly GHG	2012 Yearly GHG	%	

	Emissions (total)	Emissions (total)	Emissions (total)	Change
Electricity	62,447	26,861	26,422	(58)
Natural Gas	39,843	44,452	41,210	3
Fuel Oil	830	1,091	896	8
Chilled Water	15	19	22	47
Propane	639	519	435	(32)
Steam	18,131	19,451	17,972	(1)
Hot Water	283	673	531	88
Total	122,188	93,606	87,489	(28)

* Baseline adjustments made to reflect updates to Steam and Hot Water Emissions Factors

MOI / IO Target Class Facility Progress Report:

IO	Consumption by Utility			% Change
	Total Energy Consumed 2006 (ekWh)	Total Energy Consumed 2011 (ekWh)	Total Energy Consumed 2012 (ekWh)	
Electricity	326,707,245	273,701,026	264,219,139	(19)
Natural Gas	219,065,505	248,046,911	229,958,853	5
Fuel Oil	3,221,390	4,313,674	3,544,902	10
Chilled Water	1,956,641	2,436,135	2,902,929	48
Propane	2,936,024	2,487,974	2,086,053	(29)
Steam	68,283,720	7,3271,653	67,701,999	(1)
Hot Water	1,262,590	3,004,781	2,369,408	88
Total	623,433,115	607,262,154	572,783,283	(8)

Identifying performance trends requires reviewing both emissions and consumption related to each fuel type. Overall, IO managed facilities have achieved a 28% total reduction in GHGs between 2006 and 2012. IO and CBRE's conservation efforts, coupled with favourable weather conditions, have contributed to reduced energy consumption across the managed portfolio during 2012 as compared to 2011. Additional contributing factors include:

1. **The government's electricity reduction target:** The provincial government set a target for IO (formerly Ontario Realty Corporation) to reduce electricity consumption across its managed portfolio by 20% between 2002 and 2012. During this time MOI has allocated a green budget for IO to implement strategies and programs to achieve this target.
2. **Greener electricity grid (coal-fired generation phase-out):** The provincial government has been phasing out all of the coal-fired generation for the province. Other forms of low GHG emission generators such as hydro, wind, nuclear, etc. have made up the difference. The lower emission factor is applied to IO's electricity consumption. The other fuel types have a relatively stable emission factor as compared to electricity.

Fuel types, such as natural gas, are targeted in IO's long-term strategy (example, HVAC improvements, and Building Automation System upgrades).

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5.0 Conservation Strategies

In addition to ongoing continuous improvement and adaptive program identification, the strategies discussed in this report are generally derived from IO's Energy Master Plan (EMP). Created in 2010, the EMP establishes IO's short and long-term energy objectives over a 10 year strategy. Focal activities include:

- Setting goals and targets
- Energy efficiency
- Procurement
- Renewable energy
- Awareness programs
- Data management
- Measurement and verification
- Reporting

These programs, standards, and policies are delivered through the help of IO's service provider, CB Richard Ellis (CBRE). CBRE is an integral partner with IO in order to implement these strategies across the portfolio.

Energy Conservation Strategy Highlights

Capital Focused Strategies

Capital improvement projects and programs across the IO managed portfolio are implemented through IO's Capital Infrastructure Plan. This includes:

- **Capital Repair:** A 10-year replacement plan for capital reaching the end of its useful life. Energy efficiency will remain a prominent focus in replacement activities;
- **Energy Management:** A three-year plan to ensure long-term environmental sustainability of MOI-owned assets, including addressing climate change issues. Energy Management project requirements and opportunities are identified for occupied government-owned buildings, which are identified as either permanent retention or long-term Ministry Program use with low probability of disposition.
- **Renewable Energy:** A three-year plan to showcase renewable energy activities and show commitment to the Green Energy Act within MOI-owned property.

Capital projects can be a challenge within IO's aging infrastructure. Many of the buildings have old HVAC technology and poor thermal envelopes. Applying modern technology standards to these facilities will greatly improve performance.

Examples of technology items that remain an ongoing focus include:

- Reducing heating loop temperature requirements and installing condensing boilers;
- Installing part-load efficient chillers (Variable Frequency Drives [VFD], Modular, Magnetic Bearing, CO2);
- Recovering heat from chillers (heat recovery chiller) and data centers;
- Using heat pumps for heat recovery from exhaust streams where appropriate;
- Using advanced lighting options (e.g. Daylighting, Dimming, Occupancy Sensors);
- Installing VFD on main HVAC fans, pumps and cooling towers;
- Modernizing or adding sensors and controls;
- Minimizing unnecessary outdoor air; and
- Minimizing simultaneous heating/cooling.

Program Focused Strategies

Since the 2010/11 fiscal year, IO has been implementing its EMP, with the following principal goals:

- To establish and support the management processes required to achieve IO's energy reduction targets, and to help the Government of Ontario reduce greenhouse gas emissions from its operations.
- To set and describe data collection, management and reporting processes for energy to enable IO to meet new requirements under the Green Energy Act and associated directives.
- To provide an energy management framework for managing its property and land management services (PLMS), provided by CBRE in accordance with the Master Services Agreement.

By virtue of the EMP, in addition to annually derived energy strategies, IO has identified and continues to develop both short and longer-term energy conservation initiatives.

Short Term Energy Action Plan (2013-15)	
Strategy	Actions to-date
• Target high energy consuming buildings (20% of portfolio consumes 80% of total energy), and buildings with increased consumption over last year	• Benchmarked internal portfolio energy performance to identify and target high consumers for each building type (Courthouse, Office, etc) for short-term remedial action. • Reference external performance benchmarks for each building type for comparison and perspective from peer group performance.
• Training communications, awareness programs collaborating and	• Monthly IO portfolio meetings with asset /area managers and service providers to discuss fine-

communicating best practices, successes and challenges	tuning achievements, and implementation of energy conservation measures.
- Fully commission and provide access to existing utility sub-metering system to asset/area managers and service providers - Apply customized fine-tuning settings on Mechanical & Electrical building systems - Perform Building Automation System (BAS) maintenance using service contractor. - Implement operational low-cost / no-cost energy conservation measures (ECMs) identified within energy audits and re/retro-commissioning projects - Develop and deploy building equipment performance standards - Green Building Program (New & Existing) - Measurement and Verification (M&V)	- Identification of metering issues (software and connectivity issues). - Complete commissioning of existing sub meters across portfolio - Buildings evaluated, prioritized and targeted for operational fine tuning program - A checklist for building systems fine tuning has been prepared and a building automation maintenance program has been designed and implemented for service provider implementation - A 5-year targeted retro-commissioning program established and implemented in 2012. - Buildings evaluated, prioritized and targeted for 5-year implementation plan 9 buildings underwent retro commissioning exercise in 2012. - Energy auditing program continues on high opportunity facilities to identify potential energy conservation measures (ECMs). - ECMs continue to be implemented through energy management capital program - Retro-commissioning ECMs identified as a result of 2012 retro commissioning work, projects to be implemented in 2013 through energy management capital program - IO has developed minimum high performance energy standards for all ongoing capital investment - These standards will be reviewed and updated bi-annually as required. - IO delivers new construction projects on behalf of OPS to a minimum LEED certified. - Since 2008, IO has certified 77 existing buildings to BOMA BEST standards. - IO is finalizing a formal ongoing multi-year M&V program to support both the Capital Repair and Energy Management program spend. - This program will help ensure optimal commissioning of all implemented energy projects; in addition to quantifying successful projects for broader portfolio implementation.

Long-Term Energy Action Plan (2013-ongoing):

IO's long-term energy action plan continues to focus on its Smart Green Portfolio initiative (Enhanced Building Automation Systems). IO is organizing and initiating the program, along with supportive projects to integrate all existing Building Automation Systems (BAS) to be connected to the internet via a common communication protocol. All of the BAS systems within the managed portfolio would then be accessible from a centralized location, where trained operators can consistently monitor for operational exceptions or problems, and notify onsite building management for corrective action.

The Smart Green Portfolio initiative will:

- Reduce O&M costs;
- Support government initiatives and targets (GHG reduction);
- Improve building efficiency (lower energy costs);
- Enhance the performance of all the buildings; and
- Improve the operational performance over a building's life-cycle.

Stakeholder Engagement Strategies

The participation of various stakeholders will be crucial to the realization of IO's energy efficiency goals. By positively influencing behaviours and practices, the OPS will collectively achieve further energy savings and contribute towards achieving broader GHG reduction goals.

The principal goals of stakeholder engagement are to:

- Promote awareness of, and responsibility for, energy internally and externally within IO's managed portfolio;
- Increase awareness of IO's energy management programs; and
- Increase energy savings through behavioural changes.

IO is currently and will continue to be engaged in a number of stakeholder engagement practices for a variety of initiatives and purposes. The following outlines many of the current and expanding tools used:

- **Forums and Councils:** This is one of the primary ways in which IO communicates with its customers. The main outlets are the Chief Administrative Officer Forum and the Greening Government Task Force. These forums all hold regular meetings in which IO participates.
- **Posters, Newsletters and Building Lobby Display:** Usage of signs, newsletters, emails and other forms of building-wide communication with tenants let them know when building changes take place and how they can help save energy. "Lobby News" is a newsletter released quarterly to tenants occupying IO managed property. It remains heavily focused on occupant energy saving strategies, along with updates on energy savings initiatives delivered or planned by IO/CBRE. More recently, IO has piloted the use of lobby display screens in select buildings across the portfolio. This initiative is designed to allow real time messaging of building energy performance directly to building tenants. In addition it allows a forum to convey energy savings tips and options to engage building occupants in energy conserving actions of their own.
- **Events and Awards:** Along with the OPS, IO continues to introduce and participate in energy awareness campaigns involving the managed portfolio and the tenants within; examples include Earth Hour and WWF National Sweater Day.
- **Building User Committees:** The Building User Committee (BUC) includes Operators, Facility Managers, and tenant representatives at a given facility. Quarterly meetings allow discussion around goal setting and solutions that balance technical strategies with the needs of people within the building. BUCs can assist by:
 - Identifying environmental goals and targets for the building;
 - Developing a building specific action plan;
 - Implementing environmentally beneficial measures;
 - Understanding, supporting and implement building operating practices.

6.0 Ontario Facilities Energy Consumption Directive - Enterprise-Wide Summary 2011-2012

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Overview

In the Green Energy Act, 2009 (GEA), the Government of Ontario committed to ensuring that the Government conserve energy and use energy efficiently in conducting its affairs. In addition, it highlights government's role in promoting and expanding energy conservation by all Ontarians and in encouraging all Ontarians to use energy efficiently.

To address these commitments, the GEA sets out a number of principles, including:

1. Requiring ministries responsible for government owned facilities to report to the Minister of Infrastructure on energy consumption and GHG emissions associated with the facilities; and
2. Specifying other requirements as the Minister considers appropriate relating to energy and water conservation, energy efficiency, the adoption of renewable energy technologies and the adoption of technologies and services that promote the efficient use of water and reduce negative impacts on Ontario's water resources.

Greenhouse Gas Emission Reporting

On January 1, 2013 the Ontario Facilities Energy Consumption Directive came into effect to outline reporting requirements on GHG emissions. The directive will illustrate how the government's energy consumption is tracking against its GHG targets (19% reduction by end of 2014 and 27% reduction by end of 2020 over 2006 baseline).

The requirements of the Directive demonstrate the following fundamental principles:

- Ministries make accountable choices for energy use, ensuring value for money;
- Ministries conserve energy and use energy efficiently; and
- Information is managed efficiently and effectively across ministries.

7.0 Enterprise Progress 2011 and 2012 Report - GHG Emissions

Reporting Entity	2006 Yearly GHG Emissions Tonnes (total)	2011 Yearly GHG Emissions Tonnes (total)	2012 Yearly GHG Emissions Tonnes (total)	% Change in Emissions 2006-2012
IO	122188	93066	87489	(28)
MCSCS	34394	27946	25712	(25)
MCYS	5411	5595	5113	(6)
MNR	3750	3273	3206	(15)
MTO	302	312	290	(4)
EDU	9,477	8832	8044	(15)
IO AFP		2512	4153	
Total	173,601	147,896	134007	(24)

With the above reported dataset, the Enterprise-wide 2012 GHG emission reductions are 24% against the 19% 2014 target.

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8.0 Roles and Repsonsibilities

Most government operations are accommodated in facilities which are comprised of land, parking areas, landscaping, structures and buildings. For the purpose of the Directive, all energy consumption utilized at a facility will be allocated to buildings, with the exception of provincial parks which will be tracked at the facility (or park) level. This will be reported on an annual basis.

A rolling five-year Energy Consumption and GHG Emissions Report will be required from IO and each custodial ministry related to the government-owned facilities over which they have direct operational control.

Infrastructure Ontario

IO manages the majority of the province's portfolio on behalf of MOI. IO is a crown agency that oversees the day-to-day operations of the real-estate portfolio and implements Ministry policies for buildings, lands, and leases.

IO has three separate responsibilities outlined within the Directive:

- Reporting emissions publicly for MOI-owned facilities, this includes:
 - IO-Managed
 - Alternative Financing Procurement (AFP)
- Reporting on OPS Enterprise-wide status
- A 5-year energy conservation strategy

Infrastructure Ontario – Alternative Financing Procurement

The AFP model brings together private and public sector expertise in a unique structure that transfers the risk of project cost increases and scheduling delays typically associated with traditional project delivery.

For the Directive, AFP sites are required to report their GHG emissions; however, IO does not have direct operational control of the facilities (managed by private service providers). The reporting result is a separate line item to track IO's AFP sector progress.

Custodial Ministries

Custodial ministries have day-to-day operational control over their own facilities. These ministries include:

- Ministry of Transportation (MTO),
- Ministry of Education (EDU),
- Ministry of Child and Youth Services (MCYS),
- Ministry of Community Safety and Correctional Services (MCSCS), and
- The Ministry of Natural Resources (MNR).

Custodial Ministries have two primary responsibilities outlined within the Directive:

- Reporting emissions publicly for facilities managed on a day-to-day basis; and
- A 5-year energy conservation strategy (for each Custodial Ministry).

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9.0 Methodology

World Resource Institute Protocol (WRI)

WRI is an international protocol for GHG accounting. IO will follow this accounting standard in its reporting of the enterprise GHG baseline. Examples of applied principles outlined within the WRI protocol include: tracking inventories, buying, selling, demolishing, and adding buildings.

Target Class vs. Non-Target Class Facilities

MOI/IO with input from ministries defined which buildings would be reported on.

Target Class Facilities are a subset of all government-owned facilities that have been identified as having energy conservation potential. The energy consumption at Target Class Facilities is required to be reported to both MOI and publicly as a requirement of the Directive. Reporting is to be done at the building level within each facility. This accounts for 96% of the total energy consumed by government-owned facilities.

Non-Target Class Facilities include leased and other government-owned facilities. These are facilities where the government does not have direct operational control of the facility or it may be difficult to conserve energy due to safety considerations or programmatic impacts and constraints. Although energy consumption associated with these facilities/buildings is not required to be reported, ministries are encouraged to include any success stories associated with conservation efforts at Non-Target Class facilities through annual reporting cycles, where appropriate. This accounts for only 4% of government-owned facilities.

Custodial Target and Non-Target Class Facilities		
Ministry	Custodial Target Class Facilities	Custodial Non-Target Class Facilities
MTO	Truck Inspection Stations	Patrol Yards, remote Airports, Street Lights
MNR	Parks	Fish Hatcheries, Ranger Camps, Forest Fire Stations
EDU	Provincial Schools	none - all facilities included
MCSCS	Adult Detention Centres	none - all facilities included
MCYS	Youth Detention Centre	none - all facilities included
MOI	Offices, Courts, OPP Detachments, Data Centres	Communication Towers, Exhibits, Storage

Data Reporting Purpose

Preparation of Energy Consumption and GHG Emissions Plans will help articulate the government's energy conservation progress. Publication of the reports will provide a model and benchmark for the broader public sector. Reports also facilitate sharing of best practices and continuous improvement. Reports will include energy consumption in government-owned facilities, proposed measures to increase conservation efforts, and progress since the previous Report.

The ministries that are impacted by the Directive are ministries that have direct operational control over government owned facilities.

Data Set: Notes & Comments per Ministry for 2011 – 2012 Reporting Period

MCSCS: 29 sites reported.

MCYS: 12 sites reported. 4 sites have come into operation after the 2006 Baseline year. 5 sites are agency operated.

EDU: 4 sites reported. Jules Leger Centre is included in IO-Managed data set.

MNR: 69 parks reported. Aggregated and reported on at a site level.

MTO: 31 sites reported.

IO - AFP: 19 sites reported. IO does not have operational control of these buildings, but maintains a responsibility to report on them.

- AFP sites are not required to report emissions on their hospitals.
- For the 2011 - 2012 report, fifteen AFP sites have come online through the OPP modernization initiative
- AFP sites will register zero consumption for the 2006 Baseline year and will only add to the Enterprise-wide emission inventories as more sites are added (regardless of how energy efficient).

IO-Managed: 96% of IO's fully managed building consumption is reported. This represents just over 450 buildings which range from large laboratories to small office buildings. All IO data post-2009 are tracked and supported by CB Richard Ellis (CBRE). CBRE is IO's property management and land service provider. Among CBRE's responsibilities include capturing and tracking inventories which directly support IO's GHG reporting requirements.

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