



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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December 19, 2012

Ms. Joyce Turner, Director  
Department of Enterprise Services  
PO Box 42445  
Olympia, WA 98504

**RE: Part of Reporting Under Executive Order 12-06**

Dear Director Turner,

I am pleased to submit the Department of Ecology's reporting documents for Executive Order 12-06. Ecology has a long history of tracking energy usage and undertaking cost effective efficiency improvements. We have just completed a comprehensive energy upgrade project using the Energy Performance Contracting process for all facilities owned by Ecology. This effort completes the work required by the Executive Order for these buildings. The result is approximately a 20% reduction in energy use in these buildings.

However, the agency is not stopping our efforts to reduce energy use and green house gas emissions. We are undertaking a new project that will replace end-of-life mechanical systems for heating and cooling at the Lacey headquarters building, replacing lighting fixtures with more energy efficient products across multiple buildings, if cost effective. Ecology is committed to monitoring and benchmarking energy usage to ensue our systems continue to operate efficiently. It is Ecology's goal to lead by example and help other agencies reduce energy and green house gas emissions.

Sincerely,

Ted Sturdevant  
Director

Enclosure

cc: Donna Albert, DES Energy Office



# Executive Order 12-06 Report

## ACHIEVING ENERGY EFFICIENCY IN STATE BUILDINGS

December 2012

<b>Agency Name:</b>	<b>Ecology</b>
<b>Agency Point of Contact:</b>	<b>Carol Fleskes</b>
<b>Point of Contact Title:</b>	<b>Administrative Services Director</b>
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**Describe benchmarking, metering, audits, and energy retrofits completed by the agency in 2012 to meet the requirements of EO 12-06:**

<p>At the Lacey headquarters building we performed the following energy conservation activities:</p>
<p>1) Throughout the facility, recessed down light fixtures are used to provide light in corridors and common areas. Some of the existing fixtures use compact fluorescent lamps and some fixtures use 70W metal halide fixtures. We retrofitted the existing recessed down lights with LED retrofit kits. Approximately 1400 kits were installed</p>
<p>2) Existing parking garage fixtures used metal halide lamps and had no individual fixture control capabilities. The existing garage fixtures were replaced with LED parking garage fixtures with integral occupancy sensors.</p>
<p>3) Existing parking lot fixtures used HPS. The existing fixtures were replaced with LED parking lot fixtures.</p>
<p>4) Existing egress/night lighting was uncontrolled. As a result, designated egress lighting fixtures operated 24 hours per day, even when the building was unoccupied. Emergency lighting control units were installed to provide active control over egress dedicated lighting fixtures. The control unit monitors the lighting circuit and automatically overrides local control during a loss of power. This allows the existing egress lighting fixtures to be turned off during unoccupied conditions.</p>
<p>5) Re-commissioned HVAC and lighting controls.</p>
<p>6) Installed necessary programming and hardware to implement Active Energy Management and Active Commissioning. Programming included enhanced, multipoint alarming for problems with economizers, DAT reset, condenser water reset, system reliability analysis, CO2 sensor calibration, demand limiting, time of day scheduling, overrides, VAV dampers, VAV heaters, RTU heat, RTU VFD control and duct static pressure reset.</p>
<p>7) Provided new card access system, integrated with the building automation system to provide smart building feature of leaving existing lighting and HVAC zones in unoccupied mode until the corresponding occupants enter the building. Also integrated to provide limited occupant override of lighting off hours.</p>
<p>8) Integrated the event management system for auditorium and meeting room scheduling with the BAS. Provided smart building feature of leaving existing HVAC zones in unoccupied mode until the scheduled meeting times.</p>
<p>9) Replaced major kitchen equipment in cafeteria. The major pieces of kitchen equipment were vintage 1993 and were replaced with energy star rated equipment.</p>

## Executive Order 12-06 Reporting Form

At Padilla Bay we performed the following energy conservation activities:

- 1) Installed a small Johnson Controls NAE to allow web access to the control system for time of day and event scheduling. The work included programming to pull in existing Johnson Controls System graphics, and customer training.
- 2) Added a motorized control valve for the cooling tower bypass – Previously bypassing the cooling tower in the winter required a manual switch-over. Addition of cooling tower, condenser water pumps schedule control and heat pump water solenoid valves.
- 3) New wall mount CO2 sensors to replace existing T600HPP-1.
- 4) Installed 7-Day programmable thermostats with new controls to accommodate the Co2 sensors and the condenser water valves.
- 5) Existing linear fluorescent fixtures use 32W T8 lamps and electronic ballasts. Controls were largely limited to toggle switch control. Replaced toggle switch controls with new light switches. The new light switches provide the same type of control as the existing switch, but also communicate with wireless occupancy sensors installed in each space to ensure proper occupancy coverage.
- 6) Fully re-commissioned all HVAC and lighting control systems in the building.
- 7) Completed weatherization repairs to all buildings.

At our Spokane Eastern Regional Office we performed the following energy conservation activities:

- 1) Installed a new DDC system to optimize control of the HVAC system.
- 2) Installed occupancy sensors to maintain the lighting and HVAC zones in the off condition until a zone occupant arrived.
- 3) Corrected deficiencies in the exhaust system to better control humidity.

**Describe benchmarking, metering, audits, and energy retrofits that the agency plans to implement in 2013 to meet the requirements of EO 12-06:**

**Requirements of EO 12-06 met.**

**Describe how the agency used Energy Star Portfolio Manager benchmarking in lease negotiations for new or renewed leases in 2012:**

**DES is requesting energy information as part of the current lease renewal of a facility in Richland.**

Executive Order 12-06 Reporting Form

**Describe actions that will be taken to save energy through operational changes and continuous monitoring using Portfolio Manager:**

**Ecology has entered into an Active Energy Management contract with McKinstry for the Lacey building. Active Energy Management monitors interval data, continuously comparing this data to pre-defined facility specific thresholds. Multiple levels of comparison and reporting ensure continuous improvement related to goals and benchmarks. Through the use of active data, threshold alarming has been established and activated for monitoring and response by McKinstry 24x7x365. The reporting of current energy use data compared to historic data is displayed in the lobby of the Lacey building to demonstrate the results of the recent energy reduction project.**

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**Attachment:**

**A - Agency Progress in Implementing EO 12-06 (by building) [Attachment A - Agency Progress Worksheet.xlsx](#)**

**Resources:**

**Go to the DES Portfolio Manager webpage for a link to EO 12-06, RCWs, EPA resources and training, Step by Step Instructions, and Frequently Asked Questions at <http://www.ga.wa.gov/energy/EnergyStar.htm>**

**FIS OWNED 2012**

AS OF 10/1/12

Number			Association					Space Type															
Agency	Unique Facility Identifier	Agency SAAM Number	Agency Assigned Regional Name	Agency Assigned Regional Number	Agency Assigned Common Name	Agency Assigned Number	Agency Assigned Associated Complex, Campus, Regional Center	Reported Square Feet	Primary Space Type	No Benchmarking Required	Benchmarking Required	Benchmarking Completed	Energy Data in Portfolio Manager Current	No Preliminary Audit Required	Comprehensive Preliminary Audit Requested	Comprehensive Preliminary Audit Completed	No Cost Effective Energy Conservation Measures Identified	Investment Grade Audit Initiated	Investment Grade Audit Completed	No Cost Effective Projects Identified	Cost Effective Projects Initiated	All Cost Effective Projects Completed	All Required Actions Completed and Current
ECY	A00289	461	PADILLA BAY	E11494200000	PADILLA BAY INTERPRETIVE CENTER	E11494200000		13377	590		X		X	X	X	X		X	X		X	X	
ECY	A01349	461	PADILLA BAY	E11494200000	PADILLA BAY BARN	E11494200000		4441	730		X		X	X	X	X		X	X		X	X	
ECY	A01817	461	PADILLA BAY	E11494200000	PADILLA BAY BUNK HOUSE	E11494200000		2498	900		X		X	X	X	X		X	X		X	X	
ECY	A02638	461	PADILLA BAY	E11494200000	PADILLA BAY PETH FARM	E11494200000		420	730	X				X									X
ECY	A05064	461	ECOLOGY HEADQUARTERS BUILDING	92593	HEADQUARTERS BUILDING	92593		330000	310		X	X	X	X	X	X		X	X		X	X	X
ECY	A07316	461	PADILLA BAY	E11494200000	PADILLA BAY FARM HOUSE	E11494200000		2580	310		X		X	X	X	X		X	X		X	X	
ECY	A07949	461	PADILLA BAY	E11494200000	PADILLA BAY LAB	E11494200000		3440	270		X		X	X	X	X		X	X		X	X	
ECY	A09775	461	EASTERN REGIONAL OFFICE		EASTERN REGIONAL OFFICE			45000	310		X	X	X	X	X	X		X	X		X	X	X
ECY	A10792	461	PADILLA BAY	E11494200000	PADILLA BOAT BARN	E11494200000		2501	730		X		X	X	X	X		X	X		X	X	