



PORT METRO  
**vancouver**

[portmetrovancover.com](http://portmetrovancover.com)

## EMERGING TECHNOLOGIES & STRATEGIES FOR EMISSIONS AND ENERGY EFFICIENCY MEASURES

Overview of PMV Latest  
Emissions and Energy  
Conservation Initiatives



AAPA Energy & Environment Seminar  
Chicago, September 15-28, 2014

## PMV Overview

**Canada's largest and  
North America's  
most diversified port**

**135 million tonnes  
handled in 2013**

**Facilitating 19% of  
Canadian trade**

**Contributing \$9.7  
billion to Gross  
Domestic Product**



# Northwest Ports Clean Air Strategy Approach & Targets

- **Relative to 2005 baseline:**
  - Reduce diesel particulate matter (DPM) emissions per ton of cargo by 75% by 2015 and 80% by 2020, to decrease immediate and long-term health effects on adjacent communities.
  - Reduce greenhouse gas (GHG) emissions per ton of cargo by 10% by 2015 and 15% by 2020, to limit contributions to climate change and reduce associated environmental, health, and economic impacts.

# Addressing Marine Emissions

## Shore Power

- Offer shore power facilities at the Canada Place Cruise Terminal.
- Since 2009, reduced 8,400 tonnes of greenhouse gases (CO<sub>2</sub>e)
- In 2013, reduced 91 tonnes of criteria air contaminants and 3,092 tonnes CO<sub>2</sub>e.

## EcoAction

- Discounted Harbour Due Rates to vessels that have implemented emission reduction measures and other environmental practices



# Non Road Diesel Emissions Initiative

**PMV has initiated a program to reduce diesel particulate matter (DPM) from non-road equipment operating on port lands.**

- The NRDE initiative will reduce DPM emissions by:
  - Phasing out high-emitting equipment
  - Advancing idle reduction
  - Promoting innovative clean technologies
- Consultation started in 2013
- Program will become effective in 2015

# NRDE Program Effective January 1, 2015



- Fees for T0/T1 engines (>25 HP) applicable January 1, 2015
- Report fleet data to PMV annually (age, HP, hours)
- Idle reduction policy
- Restrict addition of old equipment
- Introduce Blue Circle Award criteria



# NRDE Program 2016



- Annual fees paid for T0 and T1 engines in Q1 2016
- 80% fees returned when engine retrofitted/replaced with verified technologies
- Random audits of tenant fleets conducted annually
- Recognize leaders with **Blue Circle Award**

<http://porttalk.ca/nrde>



PORT METRO  
**vancouver**

[portmetrovancover.com](http://portmetrovancover.com)

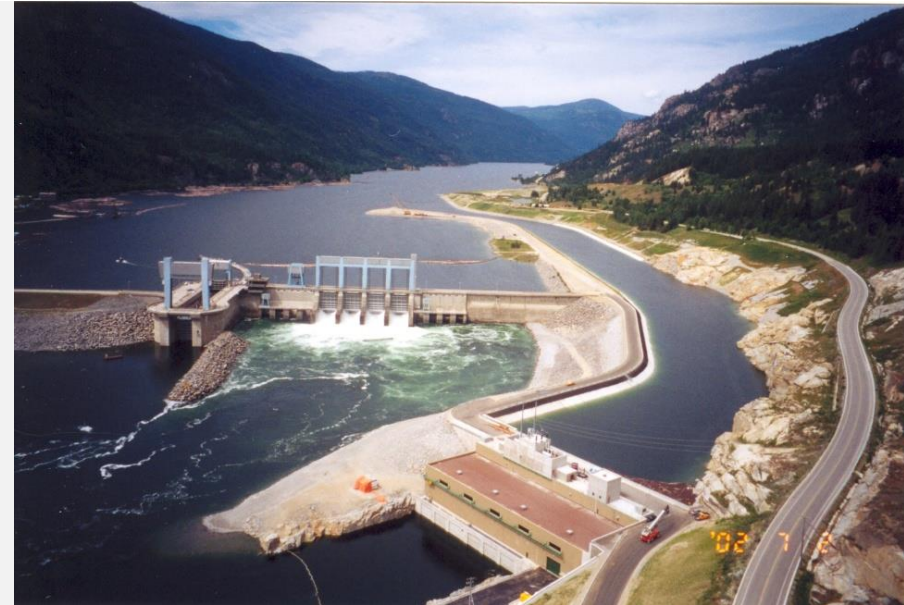


## **Energy Action Initiative**



# British Columbia Electricity

- Regulated market
- Hydroelectric energy
- Utility - BC Hydro - provincial Crown corporation
- BC Hydro 10 year Integrated Resource Plan calls for 66% offset of new load through conservation



**BC Hydro**   
**powersmart**

# Why Energy Conservation?

- Energy efficient equipment, buildings, and operational practices make business sense
- Maximizing energy efficiency can support corporate responsibility and **grow social license to operate** or expand
- Using less energy per tonne of cargo can create **competitive advantage for Gateway**

# PMV Energy Action Initiative

**PMV believes clean hydroelectric energy is an asset to our Gateway**

**Our Gateway is growing to meet Canada's future trade demand – more energy will be needed**

## Energy Action Initiative

- Industrial Energy Management Specialist focused on supporting Port tenants to identify opportunities and link to incentives



**Strategic Energy  
Management Plan**

**PMV Strategic Energy  
Management Plan**

## How do we help?

- Host meetings to provide platform for tenant experience exchange; workshops; training sessions
- Facilitate energy studies
- Work with tenants to develop business cases, performance indicators, objectives and targets
- Support incentives application with BC Hydro
- Provide tenants with information/resources portal



# Energy Conservation Forum

Manage widgets ? Layout ? [Preview](#) ?

[edit](#) | [select feedback tools](#) | [add picture](#) | [archive](#) | [activity report](#) | [comment analysis](#)

The Vancouver Gateway moves more than 120 million tonnes of cargo annually – and moving cargo requires energy. Our Gateway is growing to meet Canada's future trade demand, and this means more energy will be needed.

Our Energy Action Initiative is helping the Gateway plan for the future by advancing efficient, reliable, competitive and clean energy systems. We want to leverage clean hydroelectric energy and maximize electrical energy efficiency. Our Energy Action Initiative can help your business identify and seize opportunities to reduce energy costs and support increased productivity.

## We Can Help

Our Energy Management Specialist can help your business in a variety of ways including:

- Raising awareness of energy efficiency
- Facilitating electrical energy audits and reduce costs
- Facilitating electrical energy efficiency incentives
- Facilitating information sharing

We're here to help Port Metro Vancouver's business is new to energy management, we have the resources, technical expertise and experience to help you succeed.

[Forum](#) [Q&A](#) [News](#)

## Forum

[Add new topic](#)



Are there energy efficient options being considered for currently executed and planned projects?

[edit](#) | [make it sticky](#) | [close topic](#)

There are numerous ongoing expansion and/or upgrade projects being planned or already executed at our tenant' sites - FSD Direct Coal Transfer facility; Neptune Terminal Upgrade; Richardson Grain Storage Capacity; Westshore Terminal Infrastructure Reinvestment; PCT Canola Handling and Wastewater Treatment Facility; to name a few. Permit application details are available for review on PMV website.

We're glad to see our Gateway growing!

## Information Center

[Reorder folders](#) | [New folder](#) | [New document](#)

[Energy Management Information System \(web link\)](#)  
[edit](#) | [delete](#) | [demote](#) | [mark as overview](#)

[Energy Efficient Equipment edit](#)

[Workshop & Meeting documents edit](#)

[Illumination safety regs. edit](#)

[LED large outdoor flood pricing Q1 2014 edit](#)

[Training edit](#)

### INFORMATION CENTER

- [Energy Management Information System \(web link\)](#)
- [Industrial Equipment reference guide \(web link\)](#)
- [Permanent Magnet Adjustable Speed Drive \(web link\)](#)
- [Energy Efficient Dust Collection \(370 KB\) \(docx\)](#)

[more...](#)

### KEY LINKS

[Canadian Electricity Association - Vision 2050](#)  
[PMV Energy Forum - Port 2050](#)  
[Port 2050](#)  
[Tenant-Led projects](#)

### PROJECT TEAM

[Dorota Kwasnik](#), P.Eng, CEM  
Environmental Specialist – Energy  
Phone: 604.665.9245

[Ronan Chester](#), M.Sc, PMP, CEM, LEED AP BD+C  
Manager, Strategic Environmental Initiatives  
Phone: 604.665.9311

### RELATED PROJECTS

[Energy Action Initiative](#)  
[Non-Road Diesel Emissions \(NRDE\) Initiative](#)  
[Deltaport Terminal, Road and Rail Improvement Project](#)  
[Habitat Enhancement Program](#)  
[Land Use Plan Update](#)  
[Sustainable Gateway Initiative](#)  
[Roberts Bank Terminal 2 Project](#)  
[South Shore Corridor Project](#)  
[Welcome to PortTalk](#)  
[Northwest Ports Clean Air Strategy \(NWPCAS\)](#)  
[more...](#)

## Energy project approval for incentives process

- Engineering Consultants, Manufacturers and Distributors of energy efficient products need to be registered with BC Hydro Alliance Program
  - Power Smart Alliance - network of independent professionals who have been evaluated by BC Hydro using a comprehensive list of criteria to meet quality standards.
- Projects evaluated by BC Hydro Engineering dept. to ensure suitable technology used for the application

## Current projects (example)

- Lighting
  - We provide technical expertise in the area of large outdoor lighting (LED for yards, cranes...)



- Technical specification evaluations to ensure suitability for marine industrial environment
- Suppliers' proposal evaluation
- Corporate pricing negotiation
- Safety standards compliance evaluation

- Energy Targeting & Monitoring program

- **You can only manage what you can measure!**

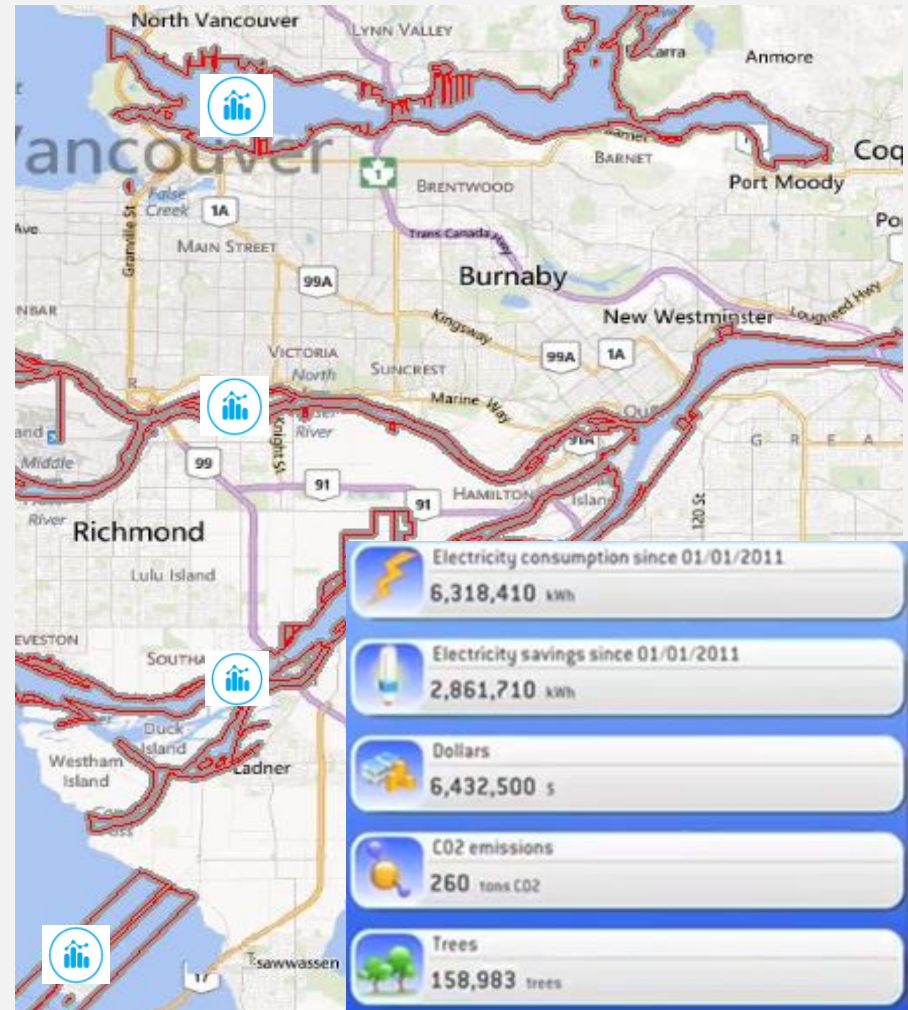


- Utility provider (BC Hydro) offers incentives to PMV Energy Specialist to help terminals with installation of power meters, Energy Management Information Systems,...

# Gateway Energy Monitoring system

**We plan to obtain energy and operational data in order to:**

- Work with terminals on establishing improvement targets (KPIs)
- Offer additional incentives to deserving tenants
- Report on overall Gateway performance







PORT METRO  
**vancouver**

[portmetrovancover.com](http://portmetrovancover.com)

**THANK YOU**

**Dorota Kwasnik**

Energy Specialist

Environmental Strategic Initiatives

[Dorota.kwasnik@portmetrovancover.com](mailto:Dorota.kwasnik@portmetrovancover.com)

