



PORT of  
**vancouver**

Vancouver Fraser  
Port Authority

# Project and Environmental Review

Guideline – project energy information

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## 1. Overview

The Vancouver Fraser Port Authority is planning for the future and recognizes that our customers require reliable, clean, and competitive energy to continue to operate their businesses. The port authority has an interest in becoming one of the most energy efficient ports in the world, and we have developed expertise to assist project applicants in achieving this goal through the Project and Environmental Review (PER) process.

If project energy information is required as part of the PER process, it should include an assessment of how the proposed development will affect electrical energy consumption levels. The assessment is intended to assist project managers in selecting the most energy efficient equipment and operational practices and mobile equipment with lowest air emissions for projects that take place on lands and waters managed by the port authority.

## 2. Introduction

The project energy information guidelines are intended to assist applicants of projects on lands and waters managed by the port authority when selecting equipment and operational practices for proposed works and activities (referred to herein as “projects”). The guidelines are to be used by both tenants and qualified energy consulting professionals hired to assist with technical aspects of equipment and operational practices selection, as well as preparation of a project energy information document, as required.

Project reviews that meet the applicability criteria outlined in [Section 4](#) of this guideline need to provide information about the energy conservation measures and low carbon emissions mobile equipment considered for the project. If detailed information is not available at the time of project permit application, project energy information will be required as a project permit condition.

## 3. Principles and objectives

The port authority plans for the future of the gateway by advancing efficient, reliable, competitive, and clean energy systems. Projects on port authority managed land and water may result in changes to electric energy use, such as energy consumption reduction due to installation of more energy efficient equipment or increase due to electrification of fossil fuel powered equipment. The impact of the project on the local electric grid is important to the assessment of energy availability for port operations. The objective of this guideline is to assist the applicant through the preparation of project energy information as they progress through their Project and Environmental Review.

## 4. Applicability

This guideline applies to PER reviews that include installation of electrically powered equipment (e.g., conveyors, fans, pumps, cranes), buildings, lights, and/or the purchase of mobile equipment. Preliminary design information about energy conservation measures and low-carbon electrification considered for the project must be submitted as part of a complete application. Detailed information will be required as a project permit condition.

## 5. Guidelines

### Information required

For qualifying reviews, information about energy conservation measures must be submitted as part of a complete application. This includes technical specification of the equipment highlighting energy efficient features and intended operational efficiencies. The application information should include justification of the equipment selection.

**Appendix 1** provides examples of energy efficient equipment information required for a review.

If a project includes the purchase of mobile equipment, information on the consideration of low-carbon emissions technology and associated infrastructure must be included.

**Appendix 2** provides examples of low-carbon mobile technology.

It is expected that best available technology not entailing excessive cost is considered for all projects.

## 6. Implementation strategy

A key component of the project energy information is implementation. The applicant must demonstrate that energy conservation efforts do not end at submitting preliminary information, but also commit to implementing the most viable, energy efficient equipment and operational strategy, and low-carbon emissions mobile equipment.

A written statement that includes the rationale behind project equipment selection should be provided in the project energy information document. The statement might include life cycle cost analysis of energy efficient / low-carbon option versus currently acceptable industry standards.

### Guideline updates

- This guideline will be updated as required to reflect best practice
- The most up-to-date version of this guideline will be available for viewing and downloading from our website. All updated versions will be dated for clear identification. Please visit: [portvancouver.com](http://portvancouver.com) to ensure you are referring to the most relevant information.

## **Appendix 1: Supporting information – examples of energy conservation measures**

### **(1) You can only control what you can measure**

#### **Provide information considering:**

- Installation of meters for each system/area and main motors
- Link meters to distributed control system (DCS) an human-machine interface (HMI) for best control of power
- Installation of real time monitoring (equipment, system, site-wide) and energy management information system

### **(2) Planning for operational energy efficiency**

#### **Provide information describing:**

- Equipment automation and/or standard operating procedures outlining proposed reduction of equipment (e.g., conveyors, pumps, fans) idling time

### **(3) Energy efficient equipment examples:**

- LED lighting
  - verify minimum lighting level requirements with applicable safety regulations and avoid significant over-lighting while providing appropriate quality and quantity of light for the users of the space, at the lowest operating and maintenance cost
  - Implement an automated control system with dimmers and occupancy sensors to make adjustments based on conditions such as occupancy or daylight availability
- Variable frequency drives (VFD) for conveyors, pumps, and fans that are not required to operate at full speed at all times
- Regenerative drives for cranes
- Energy efficient air compressors, networked if more than one, VFD installed for at least one compressor in the network

## Appendix 2: Supporting information – examples of low-carbon emissions mobile technology

### (1) Battery electric terminal tractor



### (2) Battery electric class 8 truck



### (3) Battery electric container top pick



**(4) Battery electric forklift**



**(5) Electric rubber tire gantry (E-RTG)**



**(6) Electric genie**



**(7) Zero emission corporate fleets (refer to PlugIn BC for current local vehicle and incentive availability)**

