

## 4.7 Energy

The availability and conservation of energy are important factors to consider for large projects, such as the proposed export terminal. This section describes energy resources in the study area. It then describes impacts on energy from construction and operation of the terminal.

### 4.7.1 Regulatory Setting

No federal, state, or local laws or regulations pertaining to the use of energy apply to the proposed export terminal.

### 4.7.2 Study Area

The study area for direct impacts on energy for both the On-Site Alternative and the Off-Site Alternative is the project area. For indirect impacts, the study area is the project area plus the surrounding area within 0.25 mile of the project area. When assessing the availability of energy, the analysis considers those resources that are available regionally. The Corps' *NEPA Scope of Analysis Memorandum for Record* (MFR) (2014) did not identify a specific study area for energy.

These study areas are based on the Corps' *NEPA Scope of Analysis Memorandum for Record* (MFR) (February 14, 2014) then adjusted to reflect groundwater characteristics in and near the project areas.

### 4.7.3 Methods

The following sources of information were used to identify potential impacts of the proposed export terminal on energy in the study area.

- Cascade Natural Gas website (<http://www.cngc.com/utility-navigation/about-us>)
- *City of Longview Comprehensive Plan* (City of Longview 2006)
- *Cowlitz Conservation District 5-Year Plan* (2007 to 2012) (Cowlitz Conservation District 2007)
- *Cowlitz County Comprehensive Plan* (Cowlitz County 2014)
- *Cowlitz Public Utility District Annual Reports* (Cowlitz Public Utility District 2008–2014)
- *Washington Energy Consumption Estimates, 2013* (U.S. Energy Information Administration 2013)
- U.S. Mining Cowlitz County's Mines website (<http://www.us-mining.com/washington/cowlitz-county>)
- Applicant-provided data

Potential impacts on energy were evaluated based on the estimated energy consumed during construction and operation of the terminal and the change in fuel consumption in the study area. Estimated hours of operation and types of fuel consumed were used to quantify energy consumption. Pre- and post-construction energy usage were estimated using data provided by the Applicant.

## 4.7.4 Affected Environment

This section describes the existing energy sources and their ability to serve the proposed export terminal in either location. These energy sources would be needed in the short term to construct the terminal, and in the long term to operate the terminal.

### 4.7.4.1 On-Site Alternative

#### Local Energy Sources

The project area is served by a number of local energy sources and providers, including electricity, natural gas, and diesel fuel facilities.

#### Electricity

Electricity is provided to the project area by Cowlitz Public Utility District (PUD), which supplies electricity throughout Cowlitz County. Cowlitz PUD buys over 90% of its wholesale power from Bonneville Power Administration (BPA). The majority of the BPA power comes from the Columbia River system hydroelectric projects.

Cowlitz PUD provides service throughout Cowlitz County and is among the largest public utility districts in Washington State. Cowlitz PUD estimates that customers will use 609 average megawatts and 821 peak megawatts of electricity in 2015 (Cowlitz Public Utility District 2015). Approximately 14% of Cowlitz PUD's power is sold to residential users, and approximately 8% to small industrial users (22 companies or industries). Major industrial users consume approximately 71% of the remaining power. Small general service and street/area lighting account for the other electrical usage (Cowlitz Public Utility District 2015).

#### Natural Gas

Natural gas is provided to the project area by Cascade Natural Gas, which supplies residential, commercial, and industrial users throughout Cowlitz County and beyond. The Cascade Natural Gas service area is concentrated in western and central Washington, and central and eastern Oregon. Interstate pipelines transmit the company's natural gas from production areas in the Rocky Mountains and western Canada (Cascade Natural Gas Company 2014).

#### Diesel Fuel

Local suppliers provide diesel fuel in the Longview-Kelso area. In Washington State, approximately 88.36 million gallons of diesel fuel were sold annually to railroad-related uses in 2012 (U.S. Energy Information Administration 2014). This represents approximately 9% of total diesel sales for all uses in the state. The largest consumers were on-highway users, or motor vehicles, accounting for 62% of diesel sales, or approximately 618 million gallons, in Washington State in 2012.

Diesel fuel sales for vessel uses in Washington State (excluding the military) totaled 80.5 million gallons in 2012, which accounted for 8.2% of the total diesel sales in the state (U.S. Energy Information Administration 2014). In 2013, the total prime supplier sales volume of fuel oil was 469.86 million gallons for Washington State (U.S. Energy Information Administration 2014).

## Project Area Energy Usage

Cowlitz PUD provides electricity to the On-Site Alternative project area via overhead 230-kilovolt and 115-kilovolt power lines along Industrial Way. Other power lines run perpendicular to the north end of the project area, where they converge with a BPA substation. The existing power configuration is sufficient for the current operations at the project area (URS Corporation 2014). The existing annual electricity use for the existing bulk product terminal (outside the project area but within the Applicant's leased area) averages 20 megawatts based on the average electrical usages for 2014.

Within the project area, administrative buildings use electricity provided by Cowlitz PUD. Other energy consumed comes from diesel- or gasoline-powered generators provided by local fuel suppliers.

### 4.7.4.2 Off-Site Alternative

The local energy sources are the same as described for the On-Site Alternative.

The Off-Site Alternative is located on Barlow Point, which is undeveloped; therefore, energy is currently not provided to the project area. Construction and operation of the proposed export terminal at the Off-Site Alternative location would require energy from Cowlitz PUD and Cascade Natural Gas. The project area does not have solar or wind energy infrastructure to create solar or wind energy.

Similar to the On-Site Alternative, Cowlitz PUD provides electricity in the area. Overhead power lines and an associated easement run overhead diagonally at the southeast end of the project area, south to north, and then converge with other power lines north of State Route 432 parallel to the project area. The nearest BPA substation, Mint Farm substation, is east of the project area at State Route 432 and 38th Avenue.

## 4.7.5 Impacts

This section describes the potential direct and indirect impacts related to energy from construction and operation of the proposed export terminal.

### 4.7.5.1 On-Site Alternative

#### Construction—Direct Impacts

Construction-related activities would include demolishing existing structures and preparing the site, constructing the rail loop and dock, and constructing supporting infrastructure (i.e., conveyors and transfer towers). Heavy machinery would be operated to prepare foundations and footings for construction of the proposed export terminal, associated services, and utilities. Diesel fuel and gasoline would be used in most construction equipment such as cranes, wheel loaders, dozers, dump trucks, excavators, graders, rollers, compactors, drill rigs, pile-driving equipment, portable ready-mix batch plant, ready-mix trucks, concrete pumps, elevated work platforms, forklifts, rail-track-laying equipment, water pumps, and other similar machinery (URS Corporation 2014a). A fuel truck would visit the construction site as required. The frequency during construction would vary based on usage and activities and could range from once or twice per day to once or twice per week. Fuel trucks used during construction would have a 3,000- to 4,000-gallon capacity. A temporary increase

in fuel use would result from the need to transport employees and materials to the project area and to operate construction equipment.

Construction of the proposed export terminal at the Off-Site Alternative location would result in the following direct impact.

#### **Increased Energy Use**

Construction-related energy uses would include the use of electricity, diesel fuel, gasoline, oil, and natural gas. Construction would require on average each month approximately 500 gallons of gasoline, 50 gallons of oil, and 20,000 gallons of diesel fuel.

Electricity from Cowlitz County PUD would be consumed to provide construction lighting and power tools and equipment. Natural gas would be used for minor purposes, including to heat water for showers and other sanitary uses, but not for industrial uses. Heavy machinery would operate during construction, which would increase fuel use. The demand for gasoline, oil, diesel fuel, and natural gas during construction would be minor compared to the current regional demand for these fuels and could be met by the existing local and regional supply.

#### **Construction—Indirect Impacts**

Construction of the proposed export terminal at the On-Site Alternative location would result in the following indirect impact.

#### **Increased Energy Use**

A temporary increase in fuel consumption would result from the transport of employees and materials to the project area during construction. This fuel consumption would be minor compared to the current demand for these fuels in the study area, and could be met by the existing local and regional supply.

#### **Operations—Direct Impacts**

Operation of the proposed export terminal at the On-Site Alternative location would result in the following direct impact.

#### **Increased Energy Use**

Electricity, gasoline, oil, propane, and diesel fuel would be the primary energy types consumed during operations of the terminal. Electricity would be used to heat buildings and light indoor and outdoor areas, to power the automated system used to unload coal from trains, store coal, reclaim the coal from storage, and load the vessels. Specific types of equipment used for these processes include rail car unloading facilities, stacking conveyers, bucket wheel reclaimers, the belt conveyer system, and shiploaders.

Operational electricity usage is estimated at approximately 6,624,000 kilowatts per hour, per year, and operational electricity requirements are estimated at 20 to 25 megawatts per year. At full operation, the terminal's energy use would represent an average of approximately 4% of the total electricity supplied to users in the Cowlitz PUD service area. This electricity demand is anticipated to be met by existing regional supply because Cowlitz PUD currently has the capacity to meet the electricity demand.

Gasoline, propane, and diesel would be used to power vehicles and equipment used for standard operations and routine maintenance. Operations is anticipated to require each month on average approximately 100 gallons of gasoline, 75 gallons of oil, and 865 gallons of diesel.

The demand for energy during operations would be minor compared to the current regional demand for these fuels and could be met by the existing local and regional supply.

## **Operations—Indirect Impacts**

Operation of the proposed export terminal at the On-Site Alternative location would result in the following indirect impact.

### **Increased Fuel Consumption**

The terminal would increase fuel consumption by the following.

- Approximately 240 unit trains arriving and 240 unit trains departing each month, which would increase rail locomotive fuel consumption in the study area.
- Approximately 140 vessel transits each month, which would increase vessel fuel consumption in the study area.
- Approximately 135 employees to operate the facility, which would generate approximately 270 trips per day assuming two employee trips per day. These vehicle traffic operations would increase vehicle fuel consumption in the study area.
- A fuel truck with a 3,000- to 4,000-gallon capacity would come to the project area as needed to supply vehicles and equipment with fuel for operations and maintenance. The frequency would vary based on usage and activities. This activity would increase fuel consumption in the study area.

Trains and vessels would not be fueled at the terminal. Fuel consumption from employee and fuel truck trips would be minor compared to the current demand for fuel within the study area, and could be met by the existing local and regional suppliers.

## **4.7.5.2 Off-Site Alternative**

### **Construction—Direct Impacts**

Construction of the proposed export terminal at the Off-Site Alternative location would result in the following direct impact.

#### **Increase Energy Use**

Because the project area for the Off-Site Alternative is undeveloped, energy resources are not currently provided to the project area. The Off-Site Alternative would likely require a level of preloading similar to the On-Site Alternative. The primary differences between constructing the terminal at the Off-Site Alternative location versus the On-Site Alternative location would be the need to construct an access road to the project area, install a rail line extension, and conduct additional dredging to accommodate the new docks (Docks A and B).

Impacts related to the use of electricity, diesel fuel, gasoline, oil, and natural gas during construction of the terminal at the Off-Site Alternative location would be similar to construction-

related impacts for the On-Site Alternative. The terminal at the Off-Site Alternative location could be powered via power lines from the Mint Farm substation located 0.5 mile east on State Route 432. Any disruptions in surrounding service associated with construction of the terminal would be temporary.

### **Construction—Indirect Impacts**

Construction of the proposed export terminal at the Off-Site Alternative location would have the same indirect impact as the On-Site Alternative.

### **Operations—Direct Impacts**

Operation of the proposed export terminal at the Off-Site Alternative location would result in the following direct impact.

#### **Increased Energy Use**

Electricity, gasoline, propane, oil, and diesel fuel would be the primary energy types consumed on site. Impacts related to the use of these energy sources during operation of the terminal at the Off-Site Alternative location would be similar to operations-related impacts for the On-Site Alternative. Coordination with the Cowlitz PUD for new electricity demand would be required to supply electricity and natural gas. The project area would likely be served via power lines from the Mint Farm substation located 0.5 mile east on State Route 432 (URS Corporation 2014b).

### **Operations—Indirect Impacts**

Operation of the proposed export terminal at the Off-Site Alternative location would have the same indirect impact as the On-Site Alternative.

## **4.7.5.3 No-Action Alternative**

Under the No-Action Alternative, the Corps would not issue a Department of the Army permit authorizing construction and operation of the proposed export terminal. As a result, impacts resulting from constructing and operating the export terminal would not occur. In addition, not constructing the export terminal would likely lead to expansion of the adjacent bulk product business onto the export terminal project area. Any expansion of the existing bulk terminal would increase the demand for energy (natural gas, electricity, diesel fuel, and gasoline). Cowlitz PUD and Cascade Natural Gas have the capacity to meet the anticipated demand and local suppliers would be able to accommodate diesel and gasoline demand.

## **4.7.6 Required Permits**

The proposed export terminal would require building and site development permits from the Cowlitz County Department of Building and Planning in relation to the use of energy (such as electrical and mechanical permits).