

## 1.0 SUMMARY

### 1.1 INTRODUCTION

Plymouth Energy, L.L.C. (Plymouth Energy) proposes to construct and operate a 307-megawatt (MW) natural gas-fired, combined cycle power generation facility on a 44.5-acre site 2 miles west of the rural community of Plymouth in southern Benton County, Washington. The project to be known as the Plymouth Generating Facility (PGF) would be interconnected to the Bonneville Power Administration's (BPA's) proposed McNary-John Day 500-kilovolt (kV) transmission line approximately 4.7 miles west of BPA's McNary Substation. The tie-in to the McNary-John Day line would be approximately 0.6 mile to the north of the project site.<sup>1</sup>

Natural gas would be supplied to the project by an 800-foot pipeline lateral from the Williams Northwest Gas Pipeline Company (Williams Co.) Plymouth Compressor Station, which is located adjacent to the plant site. Water for project use would be supplied from a groundwater well whose perfected rights will be transferred to the project. A small additional quantity of water to meet plant peak needs would be obtained by lease from the neighboring farm operation. Wastewater resulting from project operations would be supplied to the neighboring farm for blending with farm-supplied water, and then used for crop irrigation. Electricity generated by the PGF would be delivered to the BPA electric grid via a new transmission interconnection for transmission of energy to regional purchasers of electricity.

### 1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

#### 1.2.1 NEED FOR ACTION

The West Coast is still recovering from a shortfall in electric energy supply and a volatile wholesale power market in which prices reached record highs. Recent national and regional forecasts project increasing consumption of electrical energy to continue into the foreseeable future, requiring development of new generation resources to satisfy the increasing demand.

Between 1999 and 2009, the Western Systems Coordinating Council<sup>2</sup> (WSCC) predicts a 2.1 percent per year increase in peak demand for the Northwest Power Pool (the states of Washington, Oregon, Idaho and Utah; the Canadian provinces of British Columbia and Alberta; and portions of Montana, Wyoming, Nevada, and California) (WSCC 2000). A recent Northwest Power Planning Council (NWPPC) study of the Pacific Northwest's electrical power

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<sup>1</sup> This interconnection will be referred to in the EIS as the proposed transmission interconnection and evaluated as part of the proposed project.

<sup>2</sup> The WSCC was organized in August 1967. On April 18, 2002, the WSCC merged with the Western Regional Transmission Association and the Southwest Regional Transmission Association to form the Western Electricity Coordinating Council (WECC). WECC provides coordination essential in operating and planning a reliable and adequate electric power system for the western part of the continental United States, Canada, and Mexico. The WECC service area encompasses approximately 1.8 million square miles, more than one-half of the contiguous area of the United States. WECC is the largest, geographically, of the ten regional councils of the North American Electric Reliability Council.

supply concluded that without new generation resources, there is a 24 percent probability of the occurrence of one or more "generation insufficiency events" in which generation supply is not adequate to meet loads by 2003. This probability of a service interruption is almost five times the currently accepted utility standard. In order to meet the standard, an estimated 3,000 MWs of new generating resources would be required by 2003 (NWPPC 2000).

Generation resources typically require interconnection with a high-voltage electrical transmission system for delivery to purchasing retail utilities. The BPA owns and operates the Federal Columbia Regional Transmission System (FCRTS), comprising more than three-fourths of the high-voltage transmission grid in the Pacific Northwest and including extra-regional transmission facilities. BPA operates the FCRTS, in part, to integrate and transmit electric power from federal and non-federal generating units. Interconnection with the FCRTS is essential to deliver power from many generation facilities to loads both within and outside the Pacific Northwest.

In summary, electrical consumers in the Pacific Northwest and Western states need increased power production to serve increasing demand, and high-voltage transmission services to deliver that power. The PGF project is one of many proposed generation projects currently under consideration for integration into the FCRTS. The purpose of the PGF project is to help meet the future need for energy resources.

### **1.2.2 PURPOSE OF THE PROPOSED ACTION**

Because Plymouth Energy has requested to integrate power from its proposed PGF into the FCRTS, BPA must decide whether and how to grant that request. BPA intends to base its decision on the following objectives or purposes:

- The provision of an adequate, economical, efficient and reliable power supply to the Pacific Northwest, and the electrical stability and reliability of FCRTS
- Consistency with BPA environmental and social responsibilities
- Cost and administrative efficiency

### **1.3 DECISIONS TO BE MADE**

To proceed with development of the PGF, Plymouth Energy must obtain the following:

- State and local permits and approvals to construct and operate the PGF
- Permission from the BPA to interconnect with BPA's regional electrical transmission grid and to transport energy through the grid

Environmental review of the proposed project is necessary at both state and federal levels and is accomplished by preparation of an Environmental Impact Statement (EIS). This EIS has been prepared in compliance with both state and federal environmental review requirements, as described in Sections 1.3.1 and 1.3.2 below.

### 1.3.1 WASHINGTON STATE ENVIRONMENTAL POLICY ACT REVIEW

Construction and operation of the PGF must be approved under Washington state and local authority (Benton County) and requires environmental review under Washington's State Environmental Policy Act (SEPA). This review is required for issuance of a Conditional Use Permit by Benton County, a Notice To Construct (air permit) from the Benton Clean Air Authority, and other state and local approvals.

### 1.3.2 NATIONAL ENVIRONMENTAL POLICY ACT REVIEW

Interconnection of the PGF to the BPA transmission grid requires approval by the BPA. As a discretionary decision, BPA must be informed about the environmental consequences of interconnection. Environmental review under the National Environmental Policy Act (NEPA) is also required for the BPA to enter into an agreement for transmission of the power plant's electrical output via BPA's transmission grid to energy end users.

## 1.4 SCOPE AND ORGANIZATION OF THE EIS

This EIS evaluates the environmental effects of the proposed project and determines if any environmental impacts would result. The environmental evaluation includes the proposed power generation facility (including the power plant, gas pipeline, and water supply/wastewater pipeline), transmission interconnection, and access road. Alternatives to the proposed action that are evaluated include two transmission interconnection alternatives, an access alternative, and the No Action Alternative (project not constructed or operated).

The Draft EIS is divided into the following chapters:

- **Chapter 1, Summary.** This chapter summarizes the Draft EIS and includes a discussion of the Purpose and Need for the Proposed Action (NEPA requirement), a brief description of the Proposed Action and Alternatives, and a summary of the primary impacts and mitigation measures. It also includes a summary of the opportunities for public participation and consultation throughout the EIS preparation process.
- **Chapter 2, Proposed Action and Alternatives.** This chapter describes in detail the Proposed Action and alternatives, including the No Action Alternative and alternatives to elements of the proposed project that are evaluated.
- **Chapter 3, Affected Environment, Impacts, and Mitigation.** This chapter includes a description of the existing environment without construction and operation of the PGF. The chapter also includes analyses of the environmental effects of constructing and operating the PGF and determinations of whether there is the potential for environmental impacts to occur. If impacts could occur, they are evaluated to determine if they would be "significant" or could be avoided. Measures to lessen or eliminate impacts are listed, and it is assumed that these measures would be implemented by Plymouth Energy to achieve the level of impact that is described.

Chapter 3 has been subdivided into separate sections, one for each element of the environmental (for example, biological resources, land use, historic and cultural resources, etc.) and an additional section describing cumulative impacts.

- **Chapter 4, Environmental Consultation, Review and Permitting Requirements.** This chapter describes the permits and approvals that must be obtained for PGF construction and operation.
- **Chapter 5, Distribution List.** This chapter includes a list of those individuals and organizations that have received a copy of the Draft EIS.
- **Chapter 6, List of Preparers.** This chapter includes a list of the individuals who contributed to the preparation of this EIS. It also includes their organization affiliation and a brief description of their professional backgrounds.

## 1.5 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

### 1.5.1 PROPOSED ACTION

#### 1.5.1.1 Regional Setting

The PGF would be constructed on a site near the rural community of Plymouth, which is located on the Columbia River in the southern portion of Benton County, Washington. The plant site is 2 miles west of Plymouth and approximately 22 miles from Kennewick, which is part of the Tri-Cities (Richland, Kennewick, and Pasco) urban area of Washington. The city of Umatilla, Oregon, also on the Columbia River, is nearby. The project is in an agricultural/industrial area with neighbors that include the Williams Co. compressor station and the AgriNorthwest grain facility. The site is flat and had been in agricultural production but is now fallow.

#### 1.5.1.2 Plymouth Generating Facility and Related Facilities

The location of the PGF and related facilities is shown on Figure 2-3 in Chapter 2. The PGF and related facilities are described briefly in the following subsections. Chapter 2 describes the project in more detail.

##### 1.5.1.2.1 Generating Facility

The generating facility would include equipment that can produce 307 nominal MW of electricity. The facility would include a natural gas-fired combustion turbine generator and a steam turbine generator. Other major equipment would include a heat recovery steam generator (HRSG), condensing/cooling system, water treatment system, water storage tanks and a switchyard that would include transformers and switching equipment.

##### 1.5.1.2.2 Transmission Interconnection

The PGF would produce 307 MW of electrical energy at 500-kV. The PGF would be interconnected to the proposed 500-kV BPA high-voltage electrical transmission line to be located within the BPA right-of-way corridor approximately 0.6 mile north of the plant site. The BPA right-of-way corridor currently includes two lines, one operating at 230-kV and the second

at 345 kV. BPA has proposed and is currently completing permitting and environmental review of a third line for this corridor that would operate at 500-kV. Plymouth Energy has requested interconnection to the BPA 500-kV line. As an alternate (discussed below in Section 1.5.3), the PGF could be interconnected to BPA's existing 230-kV transmission line located in the same corridor.

### **1.5.1.2.3 Gas Supply**

The PGF would be located adjacent to the Williams Co. compressor station, which is a point of intersection for several regional gas transmission pipelines. The PGF would be connected to the compressor station by an 800-foot pipeline that would supply natural gas fuel to the PGF.

### **1.5.1.2.4 Water Supply and Wastewater**

The PGF would require water for plant operations and cooling. The steam condensing and cooling system would be the predominant water user. To minimize water use, two parallel steam condensing systems would be used. The facility would rely on an air-cooled condenser (ACC), which has no water requirement, during periods when the outside air temperature is approximately 25 degrees Fahrenheit (F) or colder. During the warmest periods of the year, the facility would rely on a steam condenser/mechanical draft wet cooling tower (wet tower), which does require makeup water to replace evaporative losses and replace wastewater (blowdown) generated by the wet tower system. During much of the year, both systems would be in operation and balanced to minimize water use while maximizing cooling efficiency.

Maximum annual water use is projected to be 1,100 acre-feet per year (af/yr). Of this requirement, 960 af/yr would be supplied from a groundwater well whose rights have been purchased and will be transferred to Plymouth Energy. The remaining approximately 140 af/yr would be leased from the adjacent property owner and be supplied from existing wells. All wells that would supply water have existing water rights that have been recently reviewed and certified by the Benton County Water Conservancy Board and the Washington State Department of Ecology.

A maximum of 200 af/yr of wastewater would be generated by the PGF. This water would be supplied to the Plymouth Farm, the adjoining agricultural property, where it would be blended with existing water supplies and applied to agricultural crops as irrigation water. During the time of year when crop irrigation is not required, wastewater would be stored in a pond.

### **1.5.1.2.5 Site Access for Construction and Operation**

Access to the plant site would be from State Route (SR) 14. The site access road would utilize a portion of the existing Plymouth Industrial Road that enters AgriNorthwest's grain facility (east of the plant site). A new road would be constructed from the plant site to intersect Plymouth Industrial Road. This access road would be used for both the construction and operation periods of the PGF. Heavy equipment components of the PGF would be delivered by rail to a rail siding located near the plant site and adjacent to Plymouth Industrial Road. A temporary offload platform would be constructed and heavy lift vehicles employed to move the heavy equipment components via Plymouth Industrial Road and the site access road to the plant site.

## 1.5.2 NO ACTION ALTERNATIVE

The No Action Alternative would result in the PGF not being constructed or operated. The No Action Alternative would avoid site-specific impacts such as conversion of agricultural land to industrial use, impacts to transportation, impacts to visual resources, and impacts to ecological resources. Under the No Action Alternative, no air emissions would occur at this site. Also, direct and indirect employment and tax benefits would be forgone under the No Action Alternative.

The No Action Alternative would not reduce groundwater use because groundwater would continue to be used to support agricultural production.

## 1.5.3 ALTERNATIVES CONSIDERED

The following alternatives to the proposed project were considered and have been evaluated in this Draft EIS. The location of these alternatives is shown on Figure 2-3 in Chapter 2.

- **Alternate 230-kV Transmission Interconnection.** As an alternative to interconnection with BPA's proposed 500-kV transmission line, the PGF could interconnect with BPA's 230-kV line, which is also located in the BPA right-of-way corridor approximately 0.6 mile north of the plant site. Interconnection to the 230-kV line would be in accordance with the availability of transmission capacity as determined by the BPA.
- **Alternate Benton PUD/BPA Transmission Interconnection.** As an alternative to interconnection to BPA's 230-kV or 500-kV transmission lines, the PGF could interconnect directly to the BPA's McNary Substation. This substation is located approximately 4.7 miles to the east of the plant site on the south side of the Columbia River adjacent to the McNary Dam. To interconnect with the BPA system at this location, Plymouth Energy would rebuild an existing Benton Public Utility District (PUD) 115-kV transmission line, adding a second 230-kV circuit to the line. Near the McNary Substation, the new 230-kV circuit would tie with an existing BPA 230kV circuit that crosses the river on existing transmission towers and terminates at the McNary Substation.
- **Access Alternative.** As an alternative to the proposed access road, construction traffic would be routed on SR 14 to the intersection with Christy Road, west of the plant site. Construction traffic would then use Christy Road in a southbound and eastbound direction and then use a newly constructed road across adjacent property and the Plymouth Farm to the proposed plant site. The alternate construction access road would not cross the Burlington Northern Santa Fe (BNSF) railroad tracks. Following completion of plant construction, the construction access road across Plymouth Farm would be removed. An existing road on Plymouth Farm currently used for farm and Williams Co. access would be improved and used for permanent access during PGF operation.

Other alternatives were considered by the applicant but were rejected, including:

- **An Alternate Plant Location.** No other sites were identified by Plymouth Energy that were in such close proximity to gas supply and transmission infrastructure facilities and that had available water supply. Minimizing infrastructure interconnection length is desired by energy facility developers because it reduces the land area impacted, project costs, and permitting requirements.
- **Larger or Smaller Generation Facility Size.** The project size was selected to optimize project energy output and economic feasibility. A smaller power plant would be unlikely to offset project development costs. A larger project would require additional infrastructure capacity, especially available cooling water and transmission capacity.
- **Use of an Alternate Generation Configuration or Technology.** Other generation technologies considered were coal (increased infrastructure for coal handling and emissions controls), wind (site is less suitable than other locations for wind turbines), and solar (increased capital investment per kilowatt [kW] of generation capacity and lower average capacity factor affects cost-effectiveness in merchant energy market). Co-generation was reviewed, but no industrial processes that require thermal energy and have operating requirements compatible with the generation facility are located nearby. The PGF, as configured, would be able to provide thermal energy to facilities that may choose to locate in the vicinity in the future. Simple cycle technology (natural gas fired combustion turbine-generator without a steam cycle) was evaluated and rejected because such configurations are less efficient and usually limited in hours of operation by air emissions limitations.
- **Use of an Alternate Cooling System Technology.** Alternative technologies for power plant cooling include once-through cooling using cooling water from the Columbia River; dry cooling (air-cooled condenser) that uses no water; or mechanical draft wet or hybrid cooling towers, which have modest water requirements. Once through cooling was rejected because of the restrictions on the use of surface water for power plant cooling found in the revised National Pollutant Elimination Discharge System regulations and the difficulty of obtaining water rights for new surface water withdrawals. The proposed PGF cooling system is a combined system that uses both mechanical wet tower and air-cooled condenser technology.
- **Use of an Alternate Water Supply.** Alternative water supplies evaluated included surface water (Columbia River), groundwater, local water district supplies, and local wastewater treatment plant effluent (gray water). The water right, purchased from Plymouth Farm by Plymouth Energy, includes a point of withdrawal from the Columbia River which could provide surface water for plant operations. However, the intake structure and supply pipeline for this point of withdrawal is owned and operated by an independent third party. To ensure plant

operating reliability, reliance on independent third parties was avoided and the surface water point of withdrawal for this water right was relinquished in favor of a groundwater point of withdrawal within the proposed plant site. Obtaining approval for a separate point of surface water withdrawal, owned and operated by Plymouth Energy for sole use of the power plant, was not considered feasible. The plant site is not located within a local water service district, and extension of service from the Plymouth Water District was not considered feasible. No wastewater treatment plant effluent is available in the nearby project vicinity.

- **Alternate Wastewater Disposal Methods.** Wastewater disposal alternatives examined include disposal to a local publicly owned treatment works (POTW), groundwater injection, discharge to a surface water body, installation of a zero discharge system, and agricultural irrigation. A POTW is not located in the area, so this alternative was rejected. Discharge to a surface water body or an injection well would require extensive permitting, and in the case of injection wells, are not encouraged by state policy. A zero discharge system (recirculation and treatment of wastewater) increases plant operating requirements and produces a solid waste for disposal. This system was rejected in favor of discharge of wastewater for agricultural use, which allows for increased plant operating efficiency and reuse of wastewater for irrigation.

## 1.6 SUMMARY OF PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

Both SEPA and NEPA require opportunities for public input and consultation during the preparation of an EIS. Consistent with these requirements, Benton County and the BPA have held two public meetings and requested public input on the scope of the EIS.

The following summarizes the activities that have been conducted:

- **Initial Public Notice.** On December 21, 2001, Benton County received an Application for Conditional Use Permit and SEPA Checklist from Plymouth Energy for the PGF project. Benton County reviewed the application and issued a Notice of Application, Determination of Significance, and request for comments on the scope of an EIS on January 12, 2002. This public notice initiated a 30-day comment period during which the public and representatives of public agencies were asked to comment on the project and suggest issues that should be evaluated in the EIS. This initial public notice also announced a public meeting to be held in the community of Plymouth near the proposed plant site to discuss the project and obtain additional public input with regard to the scope of the EIS.
- **First Public Meeting.** On January 24, 2002, Benton County hosted an evening scoping meeting at the Plymouth Fire Station. The meeting included presentations by (1) Benton County, explaining the process that will be followed for preparation of the EIS, (2) BPA on its role, and (3) Plymouth Energy on the project itself. Members of the public asked questions and were given the opportunity to provide written comments.

- **Mailing List.** Benton County and BPA have developed and are maintaining a mailing list of interested parties. All public notices and announcements concerning the project are mailed to all parties on the mailing list.
- **Completion of the EIS Scoping Report.** Following closure of the initial public comment period (February 12, 2002), Benton County and BPA jointly reviewed all of the comments received from members of the public and relevant public agencies and developed the scope of issues to be evaluated in the EIS. An EIS Scoping Report was prepared by the County in consultation with BPA.
- **Second Public Meeting.** On April 9, 2002, the BPA hosted a evening open house meeting at the Paterson School in Paterson, Washington, a community approximately 10 miles to the west of the proposed project site. At this meeting, the BPA and representatives of Plymouth Energy discussed the PGF in an open house format. Displays with project information were available, and BPA and PGF representatives answered questions posed by attending members of the public.

After completion of the Draft EIS, Benton County and the BPA will make the document available for public comment and review. Members of the public will have the opportunity to review and submit comments on the Draft EIS. These comments will be taken into consideration during preparation of the Final EIS.

## 1.7 SUMMARY OF POTENTIAL PROJECT IMPACTS AND MITIGATION MEASURES

A summary of the potential impacts, design measures, and mitigation measures to be implemented by the project is presented in Table 1-1. This table is organized by the various elements of the environment. For each element, the existing conditions, impacts, and impacts of the alternatives are summarized. Specific design measures that would reduce or eliminate impacts to which Plymouth Energy has committed are also listed. With the exception of a potentially significant noise impact, no significant impacts were identified and thus no mitigation measures to reduce significant impacts to a level of insignificant were required.

## 1.8 CUMULATIVE IMPACTS

Construction and operation of the PGF is expected to have limited environmental impacts, primarily on the plant site and the immediate area. One of these impacts could potentially be significant. In addition to the direct impacts caused by the PGF, cumulative impacts that could arise from the effect of a number of projects being constructed and operated in the regional area of the proposed project have been evaluated. For land use, transportation, and other site-related cumulative impacts, this evaluation includes projects within 30 miles of the PGF plant site. The cumulative regional haze evaluation includes projects as far away as 230 miles from the plant site. In addition, the potential of the PGF to contribute to global warming from greenhouse gas emissions is discussed.

### 1.8.1 REGIONAL TRENDS

The PGF plant site is located in a predominantly agricultural area of Benton County. Because it is adjacent to river, rail, and highway transportation and has both electrical and gas pipeline infrastructure located nearby, a trend toward industrial development has occurred and is expected to continue. In addition, the proximity of natural gas pipelines and high voltage transmission lines along both sides of the Columbia River from McNary Dam down to The Dalles has supported the development of natural gas-fired power plants in the region. The lack of urbanization, except in small communities, reduces the potential for conflict between urban and industrial development.

The trend toward additional industrial development is not likely to change the general land use pattern in the region, which is dominated by agriculture and undeveloped land.

Further development of industrial activity in the region, especially industry such as power generation that produces air emissions, may potentially impact air quality. Future industrial development may also be limited by the availability and ability to transfer water rights to industrial uses.

### 1.8.2 LOCAL AND REGIONAL CUMULATIVE IMPACTS

The cumulative analysis of impacts was performed by identifying projects whose impacts could overlap and thus add cumulatively to the impacts of the PGF. Seventeen projects in the Plymouth/Umatilla/Hermiston area were identified for cumulative impact analysis, including power plants, transmission lines, wind farms, an industrial facility, and a recreation facility. Several of these evaluated projects were found to have potential air quality, transportation, energy and natural resource, and socioeconomic cumulative impacts. No potential cumulative impacts were expected to occur to earth, water, biological resources, environmental health, noise, land use, visual resources, or cultural resources. Results of cumulative impact evaluations are listed below:

- **Air Quality.** The region in which the proposed project is located includes eight other significant air emission sources, all of which are power plants. Four of these power plants are currently operating, and the remaining are approved for construction or seeking licensing. Both cumulative air quality and regional haze evaluations found that the PGF would not contribute to significant cumulative impacts. In particular, the regional haze evaluation examined impacts on Class A air quality areas and the Columbia Gorge National Recreation Area and included power plants well beyond the immediate project vicinity. See Sections 3.2 and 3.14 for additional discussion on air quality cumulative impacts.
- **Transportation.** The region in which the proposed project is located is not becoming urbanized and, therefore, increased traffic congestion on the regional highway system is not expected. Because power plants generate a very small volume of traffic during their operational phase, the cumulative impact analysis focused on the construction phase, which would be associated with relatively higher traffic volumes. Projects that would be constructed during the same time

period as the PGF were identified, and the combined traffic impacts were evaluated. Several other projects in the region would be constructed at the same time as the PGF; therefore, significant cumulative impacts could occur. However, the PGF would be a very small portion of the total cumulative impact resulting from this group of projects. See Sections 3.11 and 3.14 for more detailed discussion on transportation cumulative impacts.

- **Energy and Natural Resources.** All projects in the vicinity of the PGF will burn natural gas as a primary fuel during the period the PGF is expected to operate. An evaluation of the total demand for fuel for all projects operating simultaneously found that the PGF would not significantly impact the region or the nation's supply of natural gas resources. See Sections 3.5 and 3.14 for more detailed discussions of energy and natural resources cumulative impacts.
- **Socioeconomics.** Because power plants have relatively small operating employment and produce tax revenues during operation, socioeconomic impacts would primarily be related to the project's construction phase. Projects that would be constructed during the same or a similar time period as the PGF were evaluated for potential socioeconomic impacts. The review found that impacts to labor force and requirements for local services could be cumulatively significant but would be due primarily to projects other than the PGF that are planned or under construction in the region. See Sections 3.13 and 3.14 for more detailed discussions on cumulative socioeconomic impacts.
- **Public Services and Utilities** – Impacts from the PGF would be not significant; however, a potentially significant cumulative impact on public services and utilities could occur because additional daily or weekly population in the region (construction workers on other projects) would place a higher demand on services such as law enforcement, fire protection, and emergency services. See Sections 3.12 and 3.14 for more discussion on cumulative impacts to public services and utilities.

### 1.8.3 GREENHOUSE GAS AND GLOBAL WARMING

In addition to the local and regional cumulative impacts discussed above, fossil-fuel power plants, including natural gas-fired combustion turbine projects such as the PGF, emit air pollutants that are of concern for their potential contribution to global warming. Power plant emissions of carbon dioxide (CO<sub>2</sub>) are thought to increase the ability of the earth's atmosphere to trap heat and increase global temperatures. This phenomenon is considered to be of global concern and is not necessarily a local or regional cumulative impact. At its maximum emissions potential, the PGF would generate annual CO<sub>2</sub> emissions that are approximately 0.015 percent of the total of all CO<sub>2</sub> emissions in the U.S. Actual plant CO<sub>2</sub> emissions would be less. The effect of this small contribution to global warming is not known.

## **1.9 REFERENCES**

Northwest Power Planning Council (NWPPC). 2000. *Northwest Power Supply Adequacy/Reliability Study Phase I Report*. Portland, Oregon. March 6.

Western Systems Coordinating Council (WSCC). 2000. *10-Year Coordinated Plan Summary, 2000-2010: Planning and Operation for Electric System Reliability*. Salt Lake City, Utah. October.

**Table 1-1  
Summary of Affected Environment, Environmental Consequences, Design and Mitigation Measures**

Element of the Environment	Existing Conditions/No Action Alternative	Impact of Proposed Project: Construction and Operation of Plant, Transmission Interconnection, and Access Road	Impact of Alternate 230-kV Transmission Interconnection	Impact of Alternate Benton PUD/BPA Transmission Interconnection	Impact of Access Alternative	Design Measures ( † ) and Mitigation ( ? )
<b>Earth</b>	<ul style="list-style-type: none"> <li>• Glaciofluvial and reworked flood gravel terraces with sand and silt mantling.</li> <li>• Glaciofluvial deposits typically have 0-35 percent fines, low corrosivity on untreated steel pipe, and high permeability value.</li> <li>• Alluvial deposits 30- to 70-feet-thick consisting of a 10-foot sand layer overlying gravel deposits.</li> <li>• Gently sloping loamy sands, ranging from very deep to shallow over gravel or basalt.</li> <li>• Closest seismic hazard: Wallula fault zone, approximately 30 mi. east of plant site.</li> <li>• Closest volcanic hazard: Mount Adams.</li> </ul>	<ul style="list-style-type: none"> <li>• Low to moderate erosion impacts.</li> <li>• Low potential hazard from volcanism.</li> <li>• Low impacts from strong ground motion; low likelihood of liquefaction during an earthquake.</li> <li>• Low to moderate impacts during construction and operation.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>• Low impacts from construction and operation.</li> </ul>	<ul style="list-style-type: none"> <li>• Low to moderate impacts.</li> </ul>	<ul style="list-style-type: none"> <li>† Seismic impacts would be reduced through standard design and construction practices in accordance with applicable building codes.</li> <li>† The project will require that a SWPPP and NPDES are approved by Ecology, which will require erosion to be minimized by using best management practices (BMPs).</li> <li>† Proposed roads and transmission interconnections would use existing roads as much as possible; small amounts of soil would be disturbed.</li> <li>† Onsite barriers would be placed to trap sediments before runoff leaves the construction site.</li> <li>† Erosion control blankets, gravel layers, hay mulch, and netting would be used to protect exposed soil deposits.</li> <li>† Paving the stormwater drainage system, and revegetation, would reduce erosion during operation.</li> </ul>
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• PGF would emit less than 100 tons/year of each regulated pollutant; PGF is therefore a minor source and requires an NOC.</li> <li>• The air quality monitoring stations nearest to the PGF site are in Pendleton and Kennewick.</li> <li>• The PGF site area is in attainment for all air pollutants. Except for periodic windblown dust events, existing air quality near Plymouth is believed to be good.</li> <li>• Predominant winds near the PGF are from the west; winds from the south-southeast and southeast also occur but are lower in speed.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts from construction, including engine emissions, VOCs from paint, and dust would not be significant due to watering practices for dust control, the significant distance to receptors, the temporary nature of construction, and the small number of engines involved. BACT will be employed to control emissions.</li> <li>• Concentrations for all pollutant and average periods were lower than the SILs; therefore, concentrations would not be significant with respect to ambient air quality standards and no significant air quality impact is expected.</li> <li>• No significant adverse impacts from toxic air pollutant emissions are anticipated.</li> <li>• No significant air quality impacts would be associated with the transmission interconnection or the access road.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>• No significant air quality impacts are anticipated in association with the alternate transmission interconnection.</li> </ul>	<ul style="list-style-type: none"> <li>• Windblown dust from grading activities would not result in a significant impact because of water application when needed and the limited grading phase of construction.</li> <li>• No significant impacts are anticipated from operation due to very low traffic volumes and significant distances to offsite receivers.</li> </ul>	<ul style="list-style-type: none"> <li>† The PGF would be constructed and operated in compliance with an NOC air quality permit issued by the BCAA.</li> </ul>

**Table 1-1 (Continued)**  
**Summary of Affected Environment, Environmental Consequences, Design and Mitigation Measures**

Element of the Environment	Existing Conditions/No Action Alternative	Impact of Proposed Project: Construction and Operation of Plant, Transmission Interconnection, and Access Road	Impact of Alternate 230-kV Transmission Interconnection	Impact of Alternate Benton PUD/BPA Transmission Interconnection	Impact of Access Alternative	Design Measures (¶ ) and Mitigation ( ? )
<b>Water</b>	<ul style="list-style-type: none"> <li>• Average annual precipitation of 7.85 inches.</li> <li>• Site area within drainage basin of Columbia River, located 3,500 feet south of plant site.</li> <li>• Fourmile Canyon originates to the north, flows south through eastern portion of site area.</li> <li>• Potential runoff in site area expected to drain to the south toward the Columbia River, a Class A water source.</li> <li>• Nearest portion of 100-year floodplain located 0.5 mile south of site area.</li> <li>• Aquifers supplying well groundwater in site area consist of unconsolidated alluvial deposits, igneous bedrock of Columbia River basalts.</li> <li>• Three surface water right permits are within 1 mi. of site area. Groundwater rights include seven certificated rights, five water rights claims. Ten water rights applications or permits exist.</li> <li>• Water use covered under two certificated water rights and one water right permit.</li> </ul>	<ul style="list-style-type: none"> <li>• During construction, potential sedimentation, erosion impact to water quality. Small likelihood of significant volumes of surface water runoff. Low to moderate and less than significant impacts.</li> <li>• Proposed access road would cross Fourmile Canyon. Low to moderate and less than significant impacts to floodplains or drainages.</li> <li>• Land application of wastewater could affect TDS groundwater concentrations. Increase in TDS concentrations would be less than drinking water standard because wastewater would be diluted prior to land application; quantity of irrigation water that recharges the aquifer is small compared to aquifer underflow and river recharge.</li> <li>• Operation erosion impacts would be low to moderate and less than significant.</li> <li>• Small overall decrease in site area aquifer recharge would be a low to moderate and less than significant impact.</li> <li>• Increase in nitrate concentration in groundwater would be low to moderate and less than significant.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>• Erosion issues similar to those discussed for the plant site would be expected; low to moderate and less than significant impacts are expected.</li> </ul>	<ul style="list-style-type: none"> <li>• Erosion issues similar to those discussed for the plant site would be expected; low to moderate and less than significant impacts are expected.</li> </ul>	<ul style="list-style-type: none"> <li>¶ Handling, disposal would comply with Industrial Waste Discharge Permit.</li> <li>¶ Stormwater runoff and discharge would be controlled by BMPs, according to the SWPPP and NPDES.</li> <li>¶ Stormwater that does not evaporate or infiltrate directly from the site would be conveyed to a stormwater retention pond via an engineered drainage system. An NPDES permit and accompanying SWPPP would be prepared for the site and approved by Ecology.</li> <li>¶ Septic system would be designed and permitted in accordance with Benton Franklin Health District.</li> <li>¶ Recharge of groundwater by precipitation on the disturbed area of the site would be decreased. Net change to recharge would be counteracted by infiltration of stormwater and application of wastewater on surrounding site area.</li> <li>¶ An engineering report for land application of wastewater would be prepared.</li> </ul>

**Table 1-1 (Continued)**  
**Summary of Affected Environment, Environmental Consequences, Design and Mitigation Measures**

Element of the Environment	Existing Conditions/No Action Alternative	Impact of Proposed Project: Construction and Operation of Plant, Transmission Interconnection, and Access Road	Impact of Alternate 230-kV Transmission Interconnection	Impact of Alternate Benton PUD/BPA Transmission Interconnection	Impact of Access Alternative	Design Measures (¶ ) and Mitigation ( ? )
<b>Biological Resources</b>	<ul style="list-style-type: none"> <li>Major habitat types present include developed/residential, agricultural, nonnative grassland, shrub-steppe, wetland, riparian, and cliffs.</li> <li>Special-status plant species recorded or with probability to occur include shining flatsedge, Umtanum desert buckwheat, Palouse goldenweed, and Columbia cress.</li> <li>Special-status wildlife species recorded or with probability to occur include bald eagle, ferruginous hawk, sage grouse, Washington ground squirrel, white-tailed jackrabbit, and painted turtle.</li> <li>Three ESUs of steelhead, three ESUs of chinook, one ESU of sockeye, and one DPS of bull trout are present in this reach of the Columbia River.</li> <li>Several noxious weeds were identified within the site area.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts to listed wildlife or their habitats, or to fish species; low to moderate impacts on other wildlife. Low impacts from transmission interconnection.</li> <li>Low and less than significant impact due to removal of shrub-steppe habitat for access road.</li> <li>Low and less than significant impact to listed species and other wildlife from construction noise and clearing of vegetation.</li> <li>Low and less than significant impact from additional spread of already abundant weeds.</li> <li>Transmission interconnection would have low and less than significant impact on raptor mortality from collisions.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>Low and less than significant impacts to priority habitats would occur due to small size of ground disturbance and mitigation.</li> <li>Low and less than significant impact to listed species and other wildlife from construction noise and clearing of vegetation.</li> <li>Low and less than significant impacts because disturbance due to crossing would be minimal.</li> <li>Low and less than significant impact from additional spread of already abundant weeds.</li> <li>Low and less than significant impact on raptor mortality from collisions.</li> </ul>	<ul style="list-style-type: none"> <li>Low and less than significant impact to listed species, such as bald eagles, and other wildlife from construction noise and clearing of vegetation.</li> <li>Low and less than significant impact from additional spread of already abundant weeds.</li> </ul>	<p>¶ Plymouth Energy would compensate for the loss of degraded shrub-steppe habitat by committing to contribute \$2,000 (equivalent to approximately 4 acres) to the acquisition of high value shrub-steppe habitat in Benton County.</p> <p>¶ A wetland delineation would be conducted prior to construction of alternate Benton PUD/BPA transmission interconnection. New transmission towers would be located outside of wetland boundaries.</p> <p>¶ Prior to construction of the alternate Benton PUD/BPA transmission line, a special-status plant survey would be conducted and protective measures taken.</p> <p>¶ Straw bales and silt fences would be placed downstream of the Fourmile Canyon crossing location prior to construction in accordance with the SWPPP.</p> <p>¶ The transmission line crossing over Fourmile Canyon and Columbia River would be constructed to ensure no disturbance to Fourmile Canyon or shoreline and riparian areas adjacent to the river.</p> <p>¶ Construction would avoid removal of important habitat features where possible. Construction equipment and staging areas would be located to avoid impacts to delineated wetlands buffer areas and large, well-established vegetation.</p> <p>¶ Revegetation and landscaping would not use noxious weed species in seed mixes.</p> <p>¶ Measures would be taken to reduce potential bird electrocution.</p>

**Table 1-1 (Continued)**  
**Summary of Affected Environment, Environmental Consequences, Design and Mitigation Measures**

Element of the Environment	Existing Conditions/No Action Alternative	Impact of Proposed Project: Construction and Operation of Plant, Transmission Interconnection, and Access Road	Impact of Alternate 230-kV Transmission Interconnection	Impact of Alternate Benton PUD/BPA Transmission Interconnection	Impact of Access Alternative	Design Measures (↓) and Mitigation (?)
<b>Energy and Natural Resources</b>	<ul style="list-style-type: none"> <li>Energy and natural resources not currently utilized onsite; land within plant site boundaries not currently in productive use. Electricity, gas, and water not supplied to the site, although they are available nearby.</li> <li>Williams Northwest Gas Pipeline Company operates a natural gas pipeline system through Benton County. Site area is in service area of Cascade Natural Gas Corporation.</li> <li>2000 natural gas reserves were approximately 167 tcf in U.S., 63 tcf in Canada.</li> <li>From 1978-1993, natural gas reserve growth was approximately 60 percent per year.</li> <li>U.S. natural gas production is expected to increase from 21 tcf in 2001 to approximately 27 tcf by 2015, and to 28.5 tcf by 2020.</li> </ul>	<ul style="list-style-type: none"> <li>Energy and natural resources used include electricity, gasoline, and diesel fuel for construction and natural gas, water, small amounts of metals, lubricants, paints, and chemicals for operation.</li> <li>Gas demand for PGF's 30-year life would represent 0.01 percent of U.S. reserves (2001) and 0.08 percent of U.S. 2001 gas production, representing a low impact.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>Impacts would be similar to impacts of the transmission interconnection associated with the proposed project.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to impacts of the access road associated with the proposed project.</li> </ul>	
<b>Environmental Health</b>	<ul style="list-style-type: none"> <li>Twenty aboveground storage tanks (ASTs) are present on the site area. Sixteen of the 20 ASTs store propane used to power orchard windmills. The remaining four ASTs contain petroleum products. Pesticides, fungicides, insecticides, herbicides, and fertilizers are stored at the southwestern portion of the site area.</li> </ul>	<ul style="list-style-type: none"> <li>Construction would include potential for minor petroleum spills from leakage or onsite fueling of vehicles. Impacts would be low and less than significant.</li> <li>Hazardous materials would be used and stored at plant site. Impacts due to potential releases of these materials would be low and less than significant.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>Potential spills into surface water (i.e., Fourmile Canyon and the Columbia River) by construction equipment could affect surface water quality. Impacts would be low and less than significant.</li> </ul>	<ul style="list-style-type: none"> <li>Construction impacts would include potential minor petroleum spills from leakage or onsite fueling of vehicles. Impacts would be low and less than significant.</li> </ul>	<ul style="list-style-type: none"> <li>↓ A spill control plan and measures would be used to minimize potential hazardous materials spills.</li> <li>↓ Engineered spill control measures would be used to minimize potential hazardous materials spills, as required by the spill control plan.</li> <li>↓ The spill control plan would include measures to protect surface water from impacts due to hazardous materials spills.</li> </ul>
<b>Noise</b>	<ul style="list-style-type: none"> <li>Existing sound levels in the project vicinity are influenced by the BNSF Railway, the Williams Co. compressor station, the AgriNorthwest grain facility, and localized noise events from residential and agricultural uses.</li> <li>Sound levels in the vicinity are generally fairly quiet during calm conditions, except for loud short-term sound levels often due to railroad activity. Windy conditions tend to increase the background sound levels, sometimes substantially.</li> </ul>	<ul style="list-style-type: none"> <li>Construction activities would occur ~0.36 mile or farther from the nearest offsite residential uses. This distance, coupled with restriction of construction activities to daytime hours, would likely reduce noise impacts to low to moderate and less than significant at offsite residential receivers.</li> <li>For operation, predicted noise levels from the plant at offsite residential receivers are below the applicable A-weighted state noise limits, and are below the 70-dBC level protecting against low frequency noise. Low impacts are anticipated except at noise receptor R4.</li> <li>Impacts from the transmission interconnection would not occur.</li> <li>Impacts from the access road would be low to moderate.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>A low to moderate noise impact is anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>A low to moderate noise impact is anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>↓ Gas and steam turbines and the generators would be in an insulated building.</li> <li>↓ A quieted inlet air filter unit would be installed.</li> <li>↓ Thicker-than-standard steel walls would be included for the HRSG sections.</li> <li>↓ Noise walls would be constructed or alternative, quieter equipment would be used.</li> <li>↓ Cooling tower water noise would be reduced by deflecting water flow.</li> <li>? Potential significant noise impacts at noise receptor R4 (a mobile home structure) will be mitigated by either 1) obtaining a noise easement from Plymouth Farm to allow increased noise at R4, or 2) contracting with Plymouth Farm to relocate the structure or convert the structure to non-residential use.</li> </ul>

**Table 1-1 (Continued)**  
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<b>Land Use</b>	<ul style="list-style-type: none"> <li>Primary land use includes agriculture, rural residential, rangeland and open space, agricultural-related industry, and industrial uses.</li> <li>Future Benton County trends include expansion of agricultural acreage, and development of commercial uses at highway interchanges, and additional industrial sites.</li> <li>City of Umatilla land use is residential, commercial, manufacturing, and agricultural.</li> <li>Future development proposals are for residential use.</li> <li>Recreation areas include Columbia River, Plymouth Park, public hunting area, and the Umatilla River.</li> <li>Benton County has 365,887 acres of prime farmland when irrigated, 36,200 acres of unique farmland, and 123,437 acres of farmland of statewide importance.</li> <li>The alternate Benton PUD/BPA transmission interconnection corridor is within shoreland area of Columbia River.</li> </ul>	<ul style="list-style-type: none"> <li>Construction would prevent agricultural use of 44.5 acres of land within Plymouth Farm.</li> <li>Construction would temporarily increase noise, dust, and traffic in the site vicinity.</li> <li>Construction could have an adverse impact on public hunting in the local area.</li> <li>Construction of the transmission interconnection may necessitate some removal of crops within Plymouth Farm and the agricultural property north of the farm.</li> <li>There would be no impact on prime or unique farmland, or farmland of statewide or local importance.</li> <li>Low impacts are expected from construction.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>Low impacts are expected.</li> </ul>	<ul style="list-style-type: none"> <li>Construction would temporarily increase noise, dust, and traffic in the area.</li> <li>Construction of the road would prevent future agricultural use of 2.9 acres of farmland of statewide and local importance (0.000001 percent of total farmland in the County).</li> <li>Impacts are expected to be low.</li> </ul>	<ul style="list-style-type: none"> <li>! Neighboring property owners would be consulted to determine times when construction of transmission lines would have least impact.</li> <li>! Property owners and operators of the BNSF Railway would be advised of the schedule for constructing the alternate transmission interconnection prior to commencement of construction.</li> </ul>
<b>Visual Resources</b>	<ul style="list-style-type: none"> <li>Landscape is primarily flat with a mixture of grassland and agricultural land.</li> <li>Views are open and expansive.</li> <li>Town of Plymouth is 2 miles east of plant site.</li> <li>No business or residential uses currently exist where project components or project alternatives would be constructed.</li> <li>Closest residence is approximately 0.25 mile NW of plant site.</li> </ul>	<ul style="list-style-type: none"> <li>Construction would result in short-term and low impacts on visual quality.</li> <li>Equipment, dust, increased construction traffic on existing roads, and night lighting would be visible during construction.</li> <li>Depending on meteorological conditions, the PGF's wet cooling tower could issue a vapor plume that could be visible against a dark nighttime sky from all viewpoints.</li> <li>Transmission interconnection would be visible in foreground from Viewpoint 6 and from other viewpoints in the background.</li> <li>Traffic on the access road would be most visible from Viewpoints 5 and 6.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>Construction would have short-term and low impacts.</li> <li>The interconnection would be visible in the foreground and middleground from Viewpoints 5, 6, and 1 during operation.</li> </ul>	<ul style="list-style-type: none"> <li>Improvements would involve increased traffic, equipment, dust, and night lighting.</li> <li>Impacts would be temporary, low and less than significant.</li> <li>Traffic, rather than the road itself, would be visible from Viewpoint 2 during operation.</li> </ul>	<ul style="list-style-type: none"> <li>! Project design elements such as a muted color scheme and a design standard for night lighting would decrease the visual impacts of the plant.</li> </ul>
<b>Historic and Cultural Resources</b>	<ul style="list-style-type: none"> <li>No archaeological sites were identified in the site area based on a record search and a site survey. No archaeological survey has been reported in the site vicinity.</li> <li>Natural resources were important to native inhabitants of the Columbia River Plateau region.</li> </ul>	<ul style="list-style-type: none"> <li>Construction would have no impact on known cultural resources.</li> <li>Operation would have no impact on known cultural resources.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>The alternate transmission interconnection would have no impact on known cultural resources.</li> </ul>	<ul style="list-style-type: none"> <li>The alternate access road would not impact known cultural resources.</li> </ul>	<ul style="list-style-type: none"> <li>? If any archaeological materials or features are encountered during any ground disturbing activities, all activities in the vicinity will stop until the significance of the discovery can be evaluated by a qualified archaeologist. If the discovery were to be determined significant, avoidance, monitoring, or data recovery would be necessary.</li> </ul>

**Table 1-1 (Continued)**  
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<b>Transportation</b>	<ul style="list-style-type: none"> <li>Modes of transportation include roadway, air, rail, and river.</li> <li>For a.m. peak travel period in 2000 on SR 14, 30 of 62 eastbound vehicles and 49 of the 161 westbound vehicles were trucks.</li> <li>For the p.m. peak travel period on SR 14, 30 of 175 eastbound vehicles and 37 of 99 westbound vehicles were trucks.</li> <li>Critical turning movement (left turn) for stopped vehicles from Plymouth Road at SR 14 is LOS B. All other movements are LOS A.</li> <li>LOS analysis for 2005 conditions without the PGF show that turning movements at the SR 14/Plymouth Road intersection will continue to experience little delay.</li> <li>BNSF railroad tracks and a spur track are located near the plant site; several river ports and airports exist in the regional area.</li> </ul>	<ul style="list-style-type: none"> <li>Short-term minimal potential impacts to travel safety could occur due to turning movements of trucks onto and off of SR 14 at Plymouth Industrial Road during peak construction. A moderate short-term construction impact on roads is anticipated.</li> <li>Low impacts from PGF operation are anticipated.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>Construction and operation of the alternate transmission interconnection would not affect road, rail, air, or river traffic or transportation. No significant impact is anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>The alternate construction access road would result in increased traffic on Christy Road and at the Christy Road/SR 14 intersection, and therefore a moderate impact.</li> <li>Low traffic impacts are expected from PGF operation.</li> </ul>	<ul style="list-style-type: none"> <li>! Traffic safety signs (approved by WSDOT) would be provided during the 7-month peak construction period.</li> <li>! Ride share and vanpool programs would be promoted during the 7-month peak construction period.</li> </ul>
<b>Public Services and Utilities</b>	<ul style="list-style-type: none"> <li>Service providers include Benton County Sheriff's Office; Washington State Patrol; Fire District 6; Benton County Emergency Services; and the Kennewick, Paterson, and Umatilla School Districts.</li> <li>Utility providers include Benton Rural Electric Association, Benton Public Utility District, Williams Northwest Gas Pipeline Company, Cascade Natural Gas Corporation, Plymouth Water District, Sanitary Disposal (solid waste disposal), and Verizon (telephone).</li> </ul>	<ul style="list-style-type: none"> <li>Low and less than significant impacts are expected from increases in demand for police and fire services due to traffic accidents, heavy traffic, fires, industrial accidents, or theft.</li> <li>No delays in response times are expected.</li> <li>Impacts to Sanitary Disposal, Williams Co., Verizon, electricity utilities, and Benton County Emergency Services would be low and less than significant.</li> <li>The potential addition of 6-12 students to schools would be a low and less than significant impact.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>Reconstruction of the transmission line would require several power outages. Service interruptions would be short; customers would be notified in advance.</li> <li>Other impacts would be the same as the proposed project for police, fire, Benton County Emergency Services, and electricity. No other impacts are expected.</li> </ul>	<ul style="list-style-type: none"> <li>Construction and operation impacts would be the same as the proposed project for police, fire, and stormwater. No other impacts are expected.</li> </ul>	

**Table 1-1 (Continued)**  
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<b>Socioeconomics</b>	<ul style="list-style-type: none"> <li>Primary industries in Franklin, Benton, and Umatilla counties are services, government, trade, and agriculture. Unemployment rate is 8 percent; there are 5,000 construction workers; per capita income is lower than average; population is 266,100; and there are 99,700 housing units.</li> <li>Community of Plymouth is 2 miles east of the plant site.</li> <li>Nearby businesses are Williams Co. compressor station, AgriNorthwest grain facility.</li> <li>No business or residential uses exist where project components or project alternatives would be constructed.</li> <li>There are 190 hotel rooms/RV spaces in Umatilla and 340 in Hermiston.</li> <li>The closest residence is approximately 0.25 mile NW of the plant site.</li> <li>Benton County 2002 consolidated budget is \$164.8 million; 2001 property tax revenue was \$106.1 million. Plant site's Tax Code Area rate of \$15.67/\$1,000 Assessed Value.</li> </ul>	<ul style="list-style-type: none"> <li>There would be a construction workforce of 130 (average) and 222 (peak); \$207 million construction cost; increase of \$2.4 million in county sales tax revenue.</li> <li>There would be beneficial impacts on the economy, local businesses, and fiscal conditions. Benefits would be low and less than significant, with the exception of fiscal impacts, which would likely be significant and beneficial.</li> <li>Few workers are expected to relocate to the area; therefore, low impacts to population and housing would occur.</li> <li>There would be 20 operation employees and a \$82 million annual operation cost. Annual property tax revenues attributable to PGF would be approximately \$3.2 million.</li> <li>Impacts from operation would be low and primarily beneficial.</li> </ul>	Impacts would be the same as for the proposed transmission interconnection.	<ul style="list-style-type: none"> <li>Construction and operation would result in low and adverse impacts, as well as beneficial impacts to socioeconomics.</li> <li>Impacts would be similar to impacts of the proposed transmission interconnection.</li> </ul>	<ul style="list-style-type: none"> <li>Construction and operation would result in low and less than significant socioeconomic impacts.</li> <li>Impacts would be similar to impacts of the proposed access road.</li> </ul>	

Notes:

AST = aboveground storage tank  
 BACT = Best Available Control Technology  
 BCAA = Benton Clear Air Authority  
 BMPs = best management practices  
 BNSF = Burlington Northern Santa Fe  
 BPA = Bonneville Power Administration  
 dBC = C-weighted decibels  
 DPS = Distinct Population Segment  
 Ecology = Washington State Department of Ecology  
 ESU = Evolutionary Significant Unit  
 HRSG = heat recovery steam generator  
 LOS = level of service  
 NOC = Notice of Construction  
 NPDES = National Pollutant Discharge Elimination System  
 PGF = Plymouth Generating Facility  
 PUD = Public Utility District  
 SILS = Significant Impact Levels  
 SR = State Route

SWPPP = Stormwater Pollution Prevention Plan  
 tcf = trillion cubic feet  
 TDS = total dissolved solids  
 VOCs = volatile organic compounds