4.14 ENERGY AND NATURAL RESOURCES

This section evaluates potential impacts to the local energy supply and natural resources that could result from the Proposed Project at Gnoss Field Airport (DVO or Airport). In particular, this section discusses electricity, natural gas, and fuel that would be required for Airport operations. Natural resources, such as those required for the Proposed Project are discussed in Section 4.17, *Mineral Resources*.

4.14.1 ENVIRONMENTAL SETTING

The following sections describe the setting in relation to energy usage and supply (i.e., electricity, natural gas, and fuel) and natural resources (such as construction materials).

4.14.1.1 Regulatory Framework

Federal, state and local agencies regulate energy consumption and natural resource protection through various plans and policies. The following section describes the applicable plans and policies regarding the regulation of energy and the protection of natural resources.

FEDERAL LAWS AND POLICIES

Executive Order 13123 (E.O. 13123), Greening the Government through Efficient Energy Management, encourages each Federal agency to expand the use of renewable energy within its facilities and in its activities. E.O. 13123 also requires each Federal agency to reduce petroleum use, total energy use and associated air emissions, and water consumption in its facilities. [1]

STATE OF CALIFORNIA LAWS AND POLICIES

The California Environmental Quality Act (CEQA) describes the energy conservation information and analyses that should be included in an Environmental Impact Report (EIR). Energy conservation is defined in terms of decreased reliance on natural gas and oil, decreased per capita energy consumption, and increased reliance on renewable energy sources. An EIR should include a discussion of potentially significant energy impacts of the Proposed Project, with emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

[1] Executive Order 13123, *Greening the Government through Efficient Energy Management*, 64 FR 30851, June 8, 1999.

MARIN COUNTY POLICIES

The Marin Countywide Plan[2] includes the following goals and policies pertaining energy conservation:

Goal EN-1: Decreased Energy Use. Reduce total and per-capita nonrenewable energy waste and peak electricity demand through energy efficiency and conservation.

Policy EN-1: Adopt Energy Efficiency Standards. Integrate energy efficiency and conservation requirements that exceed State standards into the development review and building permit process.

Policy EN-1.2: Offer Effective Incentives. Continue to offer incentives such as expedited permit processing, reduced fees, and technical assistance to encourage energy efficiency technology and practices.

Policy EN-1.3: Provide Public Information and Education. Continue to provide information, marketing, training, and education to support energy efficiency and energy conservation.

Policy EN-1.4: Reduce Energy Use in County Facilities. Continue to integrate energy efficiency and conservation into all County functions.

4.14.1.2 Existing Conditions

ENERGY

In May 2010, the Marin Energy Authority gained the ability to buy electricity on the free market and have it delivered to its residents over the existing infrastructure owned by the local utility company, Pacific Gas and Electric (PG&E). This is made possible by Community Choice Aggregation, which results from a State of California law passed in 2002. The electricity provided to Marin County customers is largely generated from renewable sources.[3]

Electricity usage at DVO averages 178 Kilowatt hours (kWh) per day.[4] In 2007, PG&E provided nearly 515,000 million cubic feet of natural gas[5] to its approximately 4.2 million customers.[6] On average, DVO uses 1,000 cubic feet of natural gas per day for heating during the winter months.[7]

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2 Marin County, *Marin Countywide Plan*, November 11, 2007.
3 Marin County presents possible model for beefing up clean energy in Boulder, Colorado Daily, May 22, 2010. On-line at: www.coloradodaily.com
4 Data provided by the Marin County Public Works Department.
5 Energy Information Administration. EIA-176 Query System. Available online at: http://www.eia.doe.gov/oil_gas/natural_gas/applications/eia176query.html. Accessed: 5/26/2009.
6 Pacific Gas & Electric. PG&E's Electric System. Available online at: http://www.pge.com/includes/docs/pdfs/about/edusafety/systemworks/gas/pge_gas_system.pdf. Accessed: 5/26/2009.
7 Data provided by the Marin County Public Works Department, 2009.

Aviation fuel is offered by concession at DVO in both 100 Low-Lead (LL) for piston-engine aircraft and Jet-A grade for jet-engine aircraft. Total fuel consumption at DVO in 2008 was approximately 75,000 gallons of 100LL and 168,000 gallons of Jet-A. The peak monthly fuel consumption in 2008 was 8,590 gallons of 100LL and 19,654 gallons of Jet-A.[8]

NATURAL RESOURCES

The Airport uses natural resources to perform normal maintenance and upkeep of its existing facilities, including paving materials to maintain the existing runway, taxiways, and apron area; and fill material to maintain the existing levee system.

4.14.2 ENVIRONMENTAL IMPACTS AND MITIGATION

4.14.2.1 Significance Criteria

Based on CEQA guidelines regarding energy usage, outlined in Appendix F, *Energy Conservation*,[9] impacts of the Proposed Project may be considered significant if:

- The Proposed Project results in wasteful, inefficient, and unnecessary consumption of energy during construction, operation, or maintenance.
- The Proposed Project places a significant demand on regional energy supply or requires substantial additional capacity.

4.14.2.2 Environmental Impacts of the Proposed Project

The potential impacts to energy supply and natural resources were assessed based on an analysis of existing conditions and the resources expected to be consumed for the Proposed Project analyzed in this EIR. The assessment was prepared according to guidelines established under the California Code of Regulations, *Guidelines for Implementation of the California Environmental Quality Act*.[10]

All input data, assumptions, and methodologies used to develop this assessment are provided in Appendix K, *Energy and Natural Resources*.

Impact 4.14-1: Construction activity would consume fuel to operate construction equipment (less than significant).

Construction equipment would consume fuel energy in the form of diesel and gasoline as well as engine oil and petroleum-based lubricants. It is expected that local fuel suppliers would be able to meet this additional demand. Accordingly, the impacts of construction fuel consumption related to the proposed project are deemed less-than-significant.

[8] Data provided by the Marin County Public Works Department, 2009.
[9] California Environmental Quality Act, Appendix F, Energy Conservation.
[10] Title 14, California Code of Regulations, Chapter 3, Guidelines for Implementation of the California Environmental Quality Act.

Mitigation: None required.

Impact 4.14-2: Implementation of the project would increase the consumption of aircraft fuel, including Jet-A and AvGas, due to the increase taxi-time associated with the extended runway and taxiway (less than significant).

As a result of implementing the Proposed Project, the distance to and from the end of the runway will increase, which will increase aircraft taxi times. Due to the increase in taxi times at DVO, the consumption of Jet-A is expected to increase by 20,518 gallons in 2013 and 22,029 gallons in 2018. The consumption of AvGas is expected to increase by 1,407 gallons in 2013 and 1,511 gallons in 2018 as a result of the Proposed Project. It is expected that local fuel suppliers would be able to meet this additional demand.

The existing runway at DVO is too short to allow a portion of the existing jet aircraft to depart fully loaded with fuel, passengers, and luggage, forcing operators to limit the amount of fuel, passengers, or luggage. Departing without sufficient fuel to reach the destination airport requires an enroute stop to refuel the aircraft. By increasing the length of the runway, these aircraft would be able to depart fully loaded, thus eliminating the need for the fuel stop and reducing the number of landing and takeoff cycles within the region. This would result in an incremental reduction in overall fuel consumption for aircraft that currently operate below capacity due to the current length of the runway at Gnoss Field. Therefore, the Proposed Project would result in a less-than-significant impact on fuel supplies.

Mitigation: None required.

Impact 4.14-3: Implementation of the project would increase the demand for electricity to light the extended runway and taxiway (less than significant).

The extended runway and taxiway would require edge lighting which will increase the demand for electric power to 74,196 kWh, an increase of 5,568 kWh per year. The additional demand for electricity would be generated off-site. The power company, PG&E, was contacted to determine the ability of the company to meet the increase in demand. PG&E indicated that they could serve this load for the Airport with no further infrastructure upgrades.[11] Therefore, the increase would not constitute a significant impact to the supply of electricity.

Mitigation Measures: None required.

[11] Email correspondence between Consultant and Peter Niewieroski, Account Executive – North Coast (Marin County account representative) Pacific Gas and Electric Company, December 22, 2010. See Appendix K.

4.14.3 CUMULATIVE IMPACTS OF THE PROPOSED PROJECT

The following other projects have the potential to impact the demand for energy and natural resources.

- Sonoma Marin Area Rail Transit Project – Construction of this project will cause a temporary increase in fuel (diesel fuel and unleaded gasoline) to power construction equipment. Implementation of this project will increase usage of diesel fuel to power the passenger rail vehicles; however, it will reduce surface vehicle traffic on U.S. Highway 101, thus reducing fuel consumption. The Proposed Project will result in a slight reduction in fuel consumption and is therefore not considered a significant impact.[12]
- Marin Sonoma Narrows HOV Widening Project – Construction of this project will cause a temporary increase in fuel (diesel fuel and unleaded gasoline) to power construction equipment. Implementation of this project will reduce congestion and delay on U.S. Highway 101, thus reducing fuel consumption.[13]
- Redwood Landfill Solid Waste Facility – Construction of this project will cause a temporary increase in fuel (diesel fuel and unleaded gasoline) to power construction equipment. Implementation of this project will cause an increase in the demand for diesel fuel to operate additional trash hauling vehicles and machinery at the facility.[14]
- North Coast Rail Authority Russian River Division Freight Rail Project – This project would increase the need for diesel fuel to power the freight rail engines.[15]
- Binford Road LLC Storage Project – Construction of this project will cause a temporary increase in fuel (diesel fuel and unleaded gasoline) to power construction equipment.
- Redevelopment of Fireman's Fund Campus/The Commons at Mount Burdell – Construction of this project will cause a temporary increase in fuel (diesel fuel and unleaded gasoline) to power construction equipment. Implementation of this project has the potential to increase the demand for energy in the form of electricity and natural gas to light, cool, and heat the proposed facilities. While environmental analysis of this project is not yet complete, this Project has been designed with the goal of achieving carbon neutral building operations. To achieve this goal, the Project incorporates a number of design features and technologies intended to conserve and generate energy, recover and reuse on-site generated organic wastes, and conserve, treat and reuse water.[16]

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12 *Sonoma-Marin Area Rail Transit Draft Environmental Impact Report*, November 2005.
13 Marin-Sonoma Narrow (MSN) HOV Widening Project Final Environmental Impact Report/Final Environmental Impact Statement, July 2009.
14 Redwood Landfill Solid Waste Facilities Permit Revision Environmental Impact Report, July 2005.
15 Sonoma-Marin Area Rail Transit Draft Supplemental EIR, March 2008.
16 City of Novato, Notice of Preparation of Draft Environmental Impact Report & Notice of Public Scoping Meeting: The Commons of Mt. Burdell EIR, September 8, 2009.

Implementation of the Proposed Project would result in increased use of energy resources, such as natural gas, fuel, and electricity. This will require additional electricity generation offsite. There would also be a temporary increase in demand for building materials. The electricity provider, PG&E, was contacted to determine the ability of the company to meet the increase in demand. PG&E indicated that they could serve this load for the Airport with no further infrastructure upgrades.[17] Therefore, the increase would not constitute a significant impact to the supply of electricity.

None of the other present, or reasonably foreseeable projects listed above have the potential to include significant adverse impacts on energy supply or natural resources. The level of cumulative impacts anticipated to occur within these past, present, or reasonably foreseeable future project would not be considered significant due to the types of projects proposed, the extent of the built environment in which they will occur, and the options considered or implemented to mitigate for unavoidable impacts. Therefore, combining the impacts of other past, present, or reasonably foreseeable future project with those of Proposed Project would not result in cumulative significant natural resource or energy supply impacts.

[17] Email correspondence between Consultant and Peter Niewieroski, Account Executive – North Coast (Marin County account representative) Pacific Gas and Electric Company, December 22, 2010. See Appendix K.