



Receptor Sites for CO "Hot Spots" Analysis

SAN YSIDRO LAND PORT OF ENTRY IMPROVEMENTS

Figure 3.12-1

E:\ArcGIS\G\GSA-01 SanYsidroLandPOEMap\ENV\EIS\Fig3-12-1_CO_HotSpot.mxd -NM

3.13 ENERGY

3.13.1 Regulatory Setting

NEPA (42 U.S.C. Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

The Energy Independence and Security Act of 2007 (P.L. 110-140 H.R. 6) is an energy policy law designed to increase energy efficiency and the availability of renewable energy. It requires (among other things) new and renovated federal buildings to reduce fossil fuel use by 55 percent (compared to 2003 levels) by 2010, and 80 percent by 2020. It also requires all lighting in federal buildings to use Energy Star products.

3.13.2 Affected Environment

Gasoline Consumption

In 2006¹, motor gasoline accounted for 53.7 percent of total petroleum uses in California. Transportation uses accounted for 39.7 percent of total energy use in California with residential and commercial uses accounting for 18.4 and 18.8 percent, respectively, and industrial uses accounting for 23.1 percent (U.S. Department of Energy). While federal policies, such as the Federal Energy Policy Act of 1992, are increasing the use of alternative-fuel and low-emission vehicles, the consumption of non-renewable resources, such as fossil fuels, remains high and points to the need to conserve such energy resources.

Electricity

In 2007², California used 18,958 million kilowatt hours (kWh), of which approximately 69.5 percent was generated in state. Natural gas accounted for 45.2 percent of total system power, coal 16.6 percent, nuclear 14.8 percent, renewable sources 11.8 percent, and large hydro 11.7 percent. California's population is projected to exceed 54 million by the year 2040. Increased populations, economic activity, and a trend of higher growth rates in the central portion of the state than in the coastal areas indicates the growing pressure on California's energy system and the increasing importance of energy efficiency (California Energy Commission 2008).

Natural Gas Consumption

In 2006³, approximately 13.5 percent of the natural gas used by California came from in-state production; the remainder was delivered via pipelines from several production areas in the western U.S. and western Canada. Electricity generation uses the greatest share of natural gas (about half of all natural gas in the state). The residential sector uses 22 percent of the natural gas. Since 1970, the number of households in California has almost doubled from 6.5 million to 12.5 million, pushing total residential natural gas consumption from about 5,500 million therms in 1970 to about 6,700 million therms in 2007. However, the average annual gas consumption per household has dropped more than 36 percent, from 845 therms to 538 therms. Commercial uses are utilizing approximately 10 percent of the natural gas consumed by the state. Natural

¹ This is the most recent data available from the U.S. Department of Energy, Energy Information Administration.

² This is the most recent data available from the California Energy Commission.

³ This is the most recent data available from the California Energy Commission.

gas has become an increasingly important source of energy since more of the state's power plants rely on this fuel (California Energy Commission 2008).

3.13.3 Environmental Consequences

Preferred Alternative

The Preferred Alternative would be constructed in three phases as described in Chapter 2.0 of this Final EIS. During the construction period, energy would be used during manufacturing of materials for the construction of buildings, structures, roads, and other proposed improvements.

Gasoline

Throughout construction, northbound and southbound vehicular and pedestrian access through the LPOE would be maintained; however, temporary detours within the LPOE may be required, resulting in some diversion of through traffic. This may cause some temporary delays and longer wait times for vehicles traveling across the border during the construction period. As a result, idling times could increase for vehicles traveling through the LPOE, which may result in additional gasoline consumption.

Post-construction operational energy uses of the facilities associated with the Preferred Alternative would primarily include the use of gasoline by vehicles. The proposed LPOE improvements would increase the rate of traffic movement across the border and in the vicinity of the LPOE, and therefore would be beneficial to energy consumption, as vehicles would spend less time idling.

When balancing energy used during construction and operation against energy saved by reducing congestion and improving other transportation efficiencies, the Preferred Alternative would not result in adverse energy impacts. While the decreased wait times may provide an incentive for additional trips across the border, it is assumed that the reduction in idling times from a projected maximum of four hours by the year 2014 and 10 hours by the year 2030 to a maximum of 1.5 hours would more than offset the impacts associated with any additional trips.

Electricity and Natural Gas

Operations at the LPOE would consume electricity and natural gas. Energy consumption would not be excessive, however, and would be reduced by the Preferred Alternative achieving a LEED certification for the LPOE, as is currently planned, as well as compliance with the Energy Independence and Security Act. The LEED Green Building Rating System, developed by the U.S. Green Building Council (USGBC), provides a suite of standards for environmentally sustainable construction. Sustainable design concepts that are being explored and considered for incorporation into the Preferred Alternative include (but are not limited to): (1) alternative energy systems and geothermal potential; (2) energy efficient opportunities for the proposed Central Plant; (3) air quality/comfort; (4) renewable energy sources; (5) daylight savings strategies; (6) lighting design controls; (7) green roofs; (8) storm water reuse; and (9) energy efficient water systems. Replacing the existing facilities with those that meet LEED certification standards would reduce the energy required to operate the LPOE compared to conventional construction and design practices, and may potentially reduce overall consumption of electricity and natural gas. In addition, the energy savings requirements of the Energy Independence and Security Act would further result in less consumption of fossil fuels and electricity.

Pedestrian Crossing Alternative

Although the Pedestrian Crossing Alternative would entail a different cross-border pedestrian circulation scheme, it would occur within the same Project Study Area as the Preferred Alternative, and construction, operation, and maintenance activities would be similar. The analysis presented above for the Preferred Alternative would apply equally to the Pedestrian Crossing Alternative, and potential impacts with respect to energy would be the same.

No Build Alternative

No construction activities would occur under the No Build Alternative, and therefore traffic delays would not occur during the construction period. As a result, the temporary increase in idling times and associated increased gasoline consumption, described for construction of the Preferred Alternative, would not occur under the No Build Alternative. Over the long-term, however, the No Build Alternative would contribute to continued long delays to cross the border, with associated traffic congestion and inefficient energy use by idling vehicles. These impacts would be expected to increase over time without implementation of the Preferred Alternative.

In addition, if the No Build Alternative is implemented, the existing LPOE facilities would not be replaced with facilities that are designed to be more energy efficient. Overall energy, electricity, and natural gas consumption may be greater under this alternative than the Preferred Alternative.

3.13.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative

The following avoidance and minimization measures would be implemented during construction of the Preferred Alternative:

- Construction equipment and vehicles should be properly tuned and maintained.
- Idling times of construction equipment should be minimized, to the extent practical.
- To the extent feasible, construction traffic should be routed and scheduled to reduce congestion and related energy impacts caused by idling vehicles along local roads during peak travel times.

Pedestrian Crossing Alternative

Avoidance, minimization, and mitigation recommendations related to energy issues for the Pedestrian Crossing Alternative would be the same as those described above for the Preferred Alternative. The use of such measures and considerations would avoid or minimize potential impacts related to energy.

No Build Alternative

Because the No Build Alternative would not result in energy impacts, no avoidance, minimization, or mitigation measures would be required.

THIS PAGE INTENTIONALLY LEFT BLANK