7.16 ENERGY (NEW)

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7.16.1 INTRODUCTION

7.16.1.1 Content

The proposed project analyzed in the Monterey Plus EIR was the Monterey Amendment and the Settlement Agreement. The Monterey Plus EIR considered five "elements" of the Monterey Amendment as follows:

- *Changes in the procedures for allocation of Table A water and surplus water among the SWP contractors;*
- *Approval to permanent transfers of 130,000 acre feet and retirement of 45,000 acre-feet of SWP long-term water supply contracts' Table A amounts;*
- *Transfer of property known as the "Kern Fan Element property" in Kern County;*
- *Water supply management practices; and*
- *Restructured water rates.*

This REIR has changed the description of the Kern Fan Element property transfer to be:

- *Transfer of property known as the "Kern Fan Element property" in Kern County and its development and continued use and operation as a locally owned and operated groundwater banking and recovery project.*

There are no revisions to the other elements of the Monterey Amendment or of the Settlement Agreement, and no changes have been made relating to them in this REIR. (See discussion in Introduction/Executive Summary.)

This REIR does not supersede the analysis of the Monterey Plus EIR but supplements the Monterey Plus EIR. The Monterey Plus EIR focused on the transfer of the KFE property, which was fully analyzed in the Monterey Plus EIR. This REIR did not identify any new impacts or changes to impacts caused by the transfer of the KFE property. Therefore, this REIR focuses on the development and continued use and operation of the KWB as a locally owned and operated groundwater banking and recovery project ("KWB activities").

The Monterey Plus DEIR Section 7.16 identified potential impacts to energy as a result of the transfer of the Kern Fan Element. Substantial new information is presented in this section, however, such that the text entirely replaces and updates text from DEIR Section 7.16 that discusses KWB activities. All other text in DEIR Section 7.16 remains unchanged. In addition to the impacts discussed below, to the extent they apply, indirect impacts as a result of population growth are presented in Chapter 8, Growth-Inducing Impacts, and indirect impacts from potential cropping changes are presented in Section 10.1, Cumulative Environmental Impacts.

Table 7.16-1 identifies the potentially affected environmental resources from impacts of KWB activities on energy.

TABLE 7.16-1

IMPACTS OF KWB ACTIVITIES RELATIVE TO ENERGY

Proposed Project Element	Potentially Affected Environmental Resources	Impact Number
Transfer of Kern Fan Element lands, and KWB activities	Substantial wasteful, inefficient, and unnecessary energy consumption, increased demand for energy; construction of new electrical or natural gas facilities	7.16-1; 7.16-2

7.16.1.2 Analytical Method

Energy-related impacts associated with KWB activities were addressed qualitatively as part of this analysis. The analysis below uses guidance from the California Environmental Quality Act (CEQA) Guidelines Appendix F, and water sector-related emission reduction measures from the Assembly Bill (AB) 32 Scoping Plan (Scoping Plan) pertaining to energy use, to evaluate both past (1996-2014) and future (2015-2030) construction and operations and maintenance (O&M) energy impacts. When available, project-specific energy consumption data were used to evaluate energy impacts from KWB activities.

7.16.1.3 Standards of Significance

The significance criteria listed below are based on Appendix F and Appendix G of the State CEQA Guidelines. KWB activities would have a significant impact on energy and energy facilities if they would:

- require or result in the construction of new electrical power generation facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- develop land uses and patterns that cause substantial wasteful, inefficient, and unnecessary consumption of energy.

Appendix F also states that the goal of conserving energy should be met through decreasing overall per capita energy consumption; decreasing reliance on fossil fuels such as coal, natural gas, and oil; and increasing reliance and use of renewable energy sources. Projects that are consistent with these strategies would be considered to meet the statewide goal of conserving energy.

In addition to the Appendix F guidance, this analysis also evaluates how the KWB complies with the water sector-related emission reduction measures established in the Scoping Plan. Similar to the analysis in Chapter 12, Climate Change, compliance with the Scoping Plan's applicable water/energy-related emission reduction measures would demonstrate that KWB is not operating in a fashion that would cause substantial wasteful, inefficient, and unnecessary consumption of energy. As determined in Chapter 12, Climate Change, the Scoping Plan's Measure W-3 would be applicable to KWB and is used to evaluate KWB's potential energy impacts.

7.16.2 ENVIRONMENTAL SETTING

7.16.2.1 Energy Sources

The electrical system in Kern County is supplied by three of California's largest utilities: Pacific Gas & Electric Company (PG&E), Southern California Edison, and Southern California Gas. Electrical generation technologies present in Kern County include: cogeneration, wind energy, geothermal energy, biomass/transformation, solar energy, and hydroelectric.[1] Kern County consumed approximately 13,189 million kilowatt hours (kWh) of electricity in 2014.[2]

7.16.2.2 Regulatory Setting

Federal

There are no current federal policies, plans, laws, or regulations related to energy that are pertinent to KWB activities. United States Department of Energy pump efficiency regulations (10 CFR Part 429 and 431) will become effective in the marketplace in 2020.

State

Senate Bills 1078, 107, and 350, and Executive Orders S-14-08, S-21-09

Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In February 2014, the California Public Utilities Commission reported that California's three largest investor-owned utilities (PG&E, Southern California Edison, and San Diego Gas and Electric Company) collectively provided 22.7 percent of their 2013 retail electricity sales using renewable sources and are continuing progress toward future 2020 requirements.[3]

Executive Order S-14-08 expanded the State's Renewable Portfolio Standard (RPS) to 33 percent renewable power by 2020. Executive Order S-21-09 directs the California Air Resources Board under its AB 32 authority to enact regulations to help the State meet its RPS goal of 33 percent renewable energy by 2020.

The 33 percent-by-2020 goal and requirements were codified in April 2011 with SB X1-2. This new RPS applies to all electricity retailers in California, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. Consequently, PG&E, which would be the electricity provider for KWB activities, must meet the 33 percent goal by 2020. This requirement applies to any electricity used for KWB construction and/or operational activities. Further, SB 350 (chapter 547, Statutes 2015) adopted in 2015 increases the RPS to 50% by 2030.

Assembly Bill 32 Scoping Plan: Water/Energy-Related Measures

The original AB 32 Scoping Plan included emission reduction measures specifically focused on the water sector. The reduction measures, as listed and discussed in more detail in Chapter 12, Climate Change, focus on water management (i.e., usage efficiency, recycling, and urban runoff), water pricing, and water-related energy (i.e., system energy efficiency and renewable energy). Measure W-3 (Water System Energy Efficiency) includes energy-related actions that apply to KWB and this analysis. Compliance with this measure demonstrates that KWB is consistent with the energy- and greenhouse gas emissions-related goals of the state.

7.16.3 IMPACTS AND MITIGATION MEASURES

7.16-1 KWB activities would potentially require or result in the construction of new electrical or natural gas facilities.

The KWB is provided with electricity and natural gas by PG&E. No new electrical or natural gas facilities have been needed to serve KWB activities in the past, including construction activities that were more extensive than activities planned in the future, with the exception of minor facilities to provide electricity to KWB facilities. It is not anticipated that any future KWB activities, including

proposed temporary construction activities, would require any new electrical or natural gas facilities to provide energy.

1996 — 2014

The KWB's 1996 to 2014 O&M activities required electricity for the operation of water pumps and other related water conveyance infrastructure. PG&E provided electricity to all the KWB O&M components. The KWB's annual electrical demand would be approximately 55.2 million kWh, based on current estimates. It is conservatively assumed that these electricity consumption levels would be representative of past energy consumption as well. Electrical demand was higher during recovery and lower during recharge. It is anticipated that from 1996 to 2014, the KWB activities O&M energy needs would have required some minor incremental increase in PG&E's electricity service infrastructure. However, the KWB's O&M (and construction) activities did not result in the construction of new electrical or natural gas facilities.

Therefore, the impact of KWB activities from 1996 to 2014 with regard to the need to construct new electrical or natural gas facilities was ***less than significant.***

Mitigation Measures

None required.

2015 — 2030

The KWB's 2015 to 2030 O&M activities would require additional electricity beyond the 1996 to 2014 demands to operate additional recharge ponds and recover and convey the recharged water. The KWB's annual electrical demand would be approximately 55.2 million kWh, based on current estimates. Electrical demand would be higher during recovery and lower during recharge. The proposed KWBA construction projects would incrementally increase electricity demand beyond current levels; however, it is not anticipated that the planned construction projects would require PG&E to construct new electricity facilities that could cause additional environmental impacts.

Therefore, the impact of KWB activities from 2015 to 2030 with regard to the need to construct new electrical or natural gas facilities would be ***less than significant.***

Mitigation Measures

None required.

7.16-2 KWB activities could potentially develop land uses and patterns that cause substantial wasteful, inefficient, and unnecessary consumption of energy that would result in an increased demand for energy.

1996 — 2014

Construction-Related and On-road Vehicles Energy Consumption

The 1996 to 2014 construction activities on KWB Lands increased energy consumption for the duration of construction activities in the form of electricity, natural gas, and petroleum products. The primary energy demands during construction were associated with construction equipment and vehicle fueling. Energy, in the form of fuel, would have been consumed during construction by work vehicles and off-road equipment operating on-site, trucks delivering equipment and supplies to the site, and construction workers driving to and from the site. During those construction activities, both on- and off-road

construction-related vehicles would have been required to comply with any applicable federal and state standards at that time. Construction activities occurring from 1996 to 2014 included constructing typical KWB infrastructure and supporting O&M activities, and therefore did not involve any especially energy intensive activities.

Operations and Maintenance Electrical Energy Consumption

O&M activities included electricity consumption for water management – primarily water recovery pumping during dry periods. Annual average electricity consumption associated with operation of the KWB activities is conservatively assumed to have been 55.2 million kWh, which is based on the average electricity consumption from 2010 to 2014. Annual average electricity consumption for O&M activities in previous years would have been less than or equal to this value. PG&E provided electricity to all the KWB O&M components. The amount of power required was within the limits of the planned power supply since no new facilities were built to fulfill energy needs from KWB activities. The other option for energy for water management activities is diesel energy which is less energy efficient and would require on-going transport of diesel fuel rather than using established electric power lines. In addition, diesel-fueled infrastructure would result in other resource impacts to air quality and greenhouse gas emissions.

As the utility provider in the area, PG&E has been increasing the amount of renewable resources in its electricity production portfolio over this period of time. These actions are a result of market conditions (e.g., maturing renewables technology and increasing fossil fuel prices) and regulatory requirements. PG&E's achievement of the 2020 and 2030 RPS requirements (i.e., 33% renewable by 2020 and 50% renewable by 2030) would increase its (and indirectly KWBA's) reliance on renewable resources and decrease future reliance on fossil fuels.

Furthermore, during this time period, PG&E was implementing its Advanced Pump Efficiency Program (APEP), which has resulted in the rehabilitation, retrofit, and replacement of a number of KWB pumps (see Chapter 12, Climate Change, for additional information on APEP energy savings). The APEP provides funding for these types of energy efficiency actions, which reduces energy demand from PG&E's customers (e.g., KWB).

In addition to PG&E's APEP, during this time, KWBA was implementing its standard pump stations and water-well maintenance program, which includes pump repair every three to five pumping seasons, or as determined through pump and energy monitoring. This maintenance and monitoring program ensured that pumps were operating at average industry standards to achieve efficiency of KWB operations and costs. The servicing of pumps under this program minimized electricity consumption (and subsequent GHG emissions) needed for operations. (See Chapter 12, Climate Change, for additional information on KWBs pump efficiency program.)

Conclusion

Construction activities occurring from 1996 to 2014 included constructing typical KWB infrastructure and, therefore, did not involve any especially energy intensive activities. Through the APEP and its own maintenance actions, KWBA has increased its pump energy efficiency and thus decreased the energy intensity of water provided to KWB participants.

Therefore, KWBA's construction and O&M activities from 1996 to 2014 with regard to energy consumption was ***less than significant.***

Mitigation Measures

None required.
2015 — 2030

Construction-Related Energy Consumption

Future KWB construction activities, including recharge pond and well construction, would increase energy consumption similar to the previous (1996 to 2014) construction activities, which were similar activities to those proposed now by KWBA. However, future construction activities would result in reduced energy consumption rates for construction equipment and vehicles because of improved fuel efficiency technologies and turnover in KWBA's vehicle and equipment fleet. In addition, planned construction activities do not have any unusual project characteristics that would necessitate the use of less energy-efficient construction equipment or vehicles that would be less energy-efficient than the equipment and vehicles used at the time at comparable construction sites elsewhere in the region. Rather, it is anticipated that over time, construction-related on- and off-road vehicles would become more energy efficient as new emissions technology become available, new emissions standards are promulgated, and overall turnover occurs in the vehicle fleet. Therefore, it is expected that construction fuel consumption associated with future KWB construction activities would be more efficient than in the past and not any more inefficient, wasteful, or unnecessary than fuel consumption at other construction sites in the region.

Operational and Maintenance Energy Consumption

KWB activities requiring electricity would continue to be supplied by PG&E, which as described above would continue to increase its renewable energy portfolio to meet its RPS requirements in 2020 and 2030. As of April 2016, PG&E is still administering its APEP to provide financial incentives for entities such as KWBA to continue increasing the energy efficiency of its pump systems. Furthermore, KWBA's existing monitoring program, if continued and strengthened, would ensure that the pump system's energy efficiency is regularly monitored and those data are used to make decisions on rehabilitations, retrofits, and/or replacements, regardless of PG&E's APEP. Thus, future KWB O&M activities would continue to manage and improve the pump system energy efficiency.

Conclusion

Construction activities occurring during 2015-2030 would include constructing typical KWB infrastructure and therefore would not involve any especially energy intensive activities. It is expected that construction fuel consumption associated with future KWB construction activities would be more efficient than in the past and not any more inefficient, wasteful, or unnecessary than fuel consumption at other construction sites in the region. Therefore, KWBA construction activities from 2015 through 2030 with regard to energy consumption would be less than significant.

With respect to KWB O&M activities, KWB's activities would continue to use a similar amount of electrical energy as during 1996-2014. However, KWB's energy provider (PG&E) would continue increasing its renewable energy portfolio to meet its 2020 and 2030 RPS requirements and, as of April 2016, is continuing to administer the APEP, which assists in KWBA's pump rehabilitation, retrofit, and replacement actions. KWBA has historically and currently performs pump efficiency actions to monitor and maintain pumps at optimal working conditions; there is no formal mechanism to require these pump efficiency actions that minimize energy consumption. Therefore, consistency with Scoping Plan Measure W-3 (Water System Energy Efficiency)(see Chapter 12, Climate Change, Mitigation Measure 12-1) cannot be tracked as part of an official plan or program approved by the KWBA Board of Directors. Thus, for the purposes of a conservative analysis, it is assumed that without a formal pump

efficiency plan, KWBA might not be consistent with the applicable water-related Scoping Plan measures (i.e., Measure W-3), and KWB O&M activities from 2015 through 2030 could be ***potentially significant***.

Mitigation Measures

Mitigation Measure 7.16-2 requires implementation of Mitigation Measure 12-1, which is a formal Pump System Energy Efficiency Plan (PSEEP) to ensure that O&M activities are consistent with the AB 32 Scoping Plan's Measure W-3. In addition, as new recharge ponds, water pumps, and conveyance infrastructures are installed in the future, procurements would be required to meet the most currently applicable pump efficiency standards as required in Mitigation Measure 12-1. Similarly, as older water pumps and conveyance infrastructures are replaced through passive turnover (not required in the PSEEP), O&M activities would increase in energy efficiency. Therefore, it is anticipated that the energy efficiency of future O&M activities would gradually increase with time independent of the PG&E APEP and Mitigation Measure 12-1.

Mitigation Measure 7.16-2 would reduce impacts of KWB activities with regard to energy resources to less than significant. Therefore, the impact of KWB activities from 2015 to 2030 with regard to energy consumption would be ***less than significant, with mitigation***.

7.16-2 *KWBA will implement Mitigation Measure 12-1.*

ENDNOTES

1. Rosedale–Rio Bravo Water Storage District and Irvine Ranch Water District. 2015 (April). Stockdale Integrated Banking Project Draft Environmental Impact Report (SCH # 2013091076). Available: http://www.rrbwsd.com/wp-content/uploads/2015/04/2015-04-Stockdale-DEIR-optimized.pdf.

2. California Energy Commission Energy Consumption Data Management System, Electricity Consumption by County, 2014.

3. California Public Utilities Commission. 2014 (February). *Biennial RPS Program Update*. Available: http://www.cpuc.ca.gov/NR/rdonlyres/F39A3D4C-6EE9-48AA-A0C9-03D6A3B3EF38/0/Section_399_19_Report_FINAL.pdf. Accessed January 7, 2016.