

Chapter 21 Energy

21.1 Summary Comparison of Proposed Project

The proposed project would not result in new impacts or a substantial increase in the severity of previously identified energy impacts, so no summary table is being presented. This chapter contains the information necessary to make the Final EIR/EIS adequate for the approved project as revised.

21.2 Environmental Setting/Affected Environment

The Existing Conditions of energy resources that would be affected by construction of the proposed project are the same as described in Final EIR/EIS Chapter 21, *Energy*, Section 21.1, *Environmental Setting/Affected Environment*. The Final EIR/EIS provides a discussion of Central Valley Project (CVP) and State Water Project (SWP) generation, pumping facilities, and use, as well as existing federal and state plans and policies related to energy consumption and conservation. Because the modifications to the approved project would be located entirely within the previously analyzed project area, the Existing Conditions have not changed.

21.3 Environmental Consequences

This section describes the potential effects of the modifications to the approved project on energy generation uses. Potential direct and reasonably foreseeable indirect effects on energy resources that would result from construction of the proposed project are assessed.

Some impact topics addressed in the Final EIR/EIS are not addressed herein because the change in the footprint of the water conveyance facilities would not result in a changed impact. Topics not addressed in this chapter include energy use for pumping and conveyance or compatibility of the proposed water conveyance facilities and Environmental Commitments 3, 4, 6–12, 15, and 16 with plans and policies. The energy impacts resulting from these actions, whether they occur under the proposed project or approved project, are fully disclosed in the Final EIR/EIS and would not change if the footprint changes described for the proposed project are constructed.

Refinements to transmission line corridors and new electrical interconnections to provide construction power are analyzed in the *California WaterFix Addendum to the Final EIR* (Department of Water Resources 2018). As discussed in the Final EIR/EIS and the Addendum, DWR has coordinated with affected utilities to conduct system impact studies and associated affected systems studies to assess the impact, if any, on the electrical grid both in the California Independent System Operator and neighboring balancing area authorities. Impacts on the grid would be mitigated pursuant to the system impact studies, and the proposed electrical facilities would result in no impacts on the grid or neighboring affected systems. Accordingly, electric grid capacity and reliability are not discussed further in this analysis.

1 21.3.1 Methods for Analysis

2 The methods applied to the analysis of impacts on energy resources are the same as indicated in the
 3 Final EIR/EIS. Construction of the proposed project modifications would require the use of
 4 electricity for lighting, tunnel ventilation, tunnel boring, earth removal from the tunnels, and other
 5 construction machinery. Project construction would also consume gasoline and diesel fuel through
 6 operation of heavy-duty construction equipment and vehicles.

7 Under the proposed project, only the new Byron Tract Forebay and conveyance would affect
 8 construction activity (i.e., required equipment, operating hours) and resulting fuel consumption.
 9 Assuming no changes to any modeling assumptions or methods from the Final EIR/EIS, the
 10 incremental change in fuel use associated with the proposed project would therefore be limited to
 11 the Byron Tract Forebay. However, since other features of the project (e.g., tunnel reaches) would be
 12 constructed concurrently with the Byron Tract Forebay, the impact determinations are based on
 13 fuel use across the entire conveyance facility and consider fuel consumed to construction elements
 14 previously evaluated in the Final EIR/EIS that have not change because of the footprint revision.
 15 This approach ensures total fuel use and energy impacts associated with the complete project are
 16 accurately assessed and evaluated consistent with refined engineering assumptions based on the
 17 current construction schedule and level of available design. However, due to the refined engineering
 18 assumptions that were updated for the proposed project since the time of the approved project
 19 analysis, there appears from just looking at the numbers, to be a larger difference in the intensity of
 20 reported energy impacts. For this reason, the reader should focus on the discussion under the
 21 Incremental Impact section to ascertain what the true impacts due to the footprint changes in
 22 isolation would be.

23 Annual energy needs for construction were provided by the project engineering team and are
 24 summarized in Table 21-1. Conveyance facility operational effects are not addressed because
 25 operation of the proposed project and approved project would be identical, as would the energy
 26 needs.

27 **Table 21-1. Temporary Annual Electrical and Fuel Use Estimates for Construction**

Year	Proposed Project	
	Gasoline/Diesel (million gallons)	Electricity (gigawatt hours)
2018	<1	0
2019	<1	0
2020	1	0
2021	5	1
2022	13	16
2023	12	58
2024	13	294
2025	14	569
2026	11	644
2027	12	633
2028	8	495
2029	6	286
2030	5	59
2031	1	2
Total	101	3,056

1 **21.3.2 Effects and Mitigation Approaches**

2 **21.3.2.1 No Action Alternative**

3 Under the No Action Alternative, the new Byron Tract Forebay, reusable tunnel material storage and
4 other footprint changes described for the proposed project would not occur. For the purposes of this
5 Supplemental EIR/EIS, the No Action Alternative, against which this proposed project is compared,
6 is consistent with the No Action Alternative Early Long-Term in the Final EIR/EIS. No differing
7 effects resulting from energy usage would occur along the proposed project alignment from what
8 was previously described in the No Action Alternative Early Long-Term in the Final EIR/EIS if the
9 No Action Alternative were to occur.

10 **21.3.2.2 Proposed Project**

11 **Impact ENG-1: Potential for Wasteful or Inefficient Temporary Energy Use from Construction** 12 **of the Water Conveyance Facilities**

13 Primary fuels used during construction include electricity, diesel, and gasoline. The total amount
14 and intensity of gasoline and diesel consumption may vary substantially from day to day, depending
15 on the level of activity and the specific type of operation.

16 **NEPA Effects:** Electricity and fuel use during construction has the potential to result in a wasteful,
17 inefficient or unnecessary consumption of energy. Table 21-1 indicates that the total energy
18 estimate for the construction period would be about 3,056 gigawatt hours (GWh). That is an average
19 of 218 GWh per year, with a peak use of 644 GWh occurring in 2026, concurrent with expected
20 construction activity. The proposed project would consume approximately 101 million gallons of
21 diesel and gasoline over the entire construction period.

22 Compared with the approved project, the proposed project would consume more electricity,
23 primarily because of additional electric-powered machinery (e.g., pumps, generators). The
24 substitution of electric-powered equipment for fossil-fueled machinery is anticipated to result in a
25 corresponding decrease in total fuel consumption. Accordingly, the proposed project is expected to
26 consume fewer gallons of diesel and gasoline, relative to the approved project.

27 While the quantity of fuel consumed would slightly differ, the potential for the proposed project to
28 result in a wasteful, inefficient, or unnecessary consumption of construction energy would be the
29 same as the approved project. Consistent with the approved project, construction best management
30 practices (BMPs) will ensure that only high-efficiency equipment is used during construction.
31 Appendix 3B, *Environmental Commitments, AMMs, and CMs*, Section 3B.1.9 also outlines an
32 equipment exhaust reduction plan that would reduce unnecessary equipment idling and ensure all
33 construction equipment is in proper working condition according to manufacturer's specifications.
34 These and other policies would help reduce construction energy and are consistent with state and
35 local legislation and policies to conserve energy. Construction activities would, therefore, not result
36 in the wasteful, inefficient, or unnecessary consumption of energy. Accordingly, as with the
37 approved project, there would be no adverse effect.

38 **CEQA Conclusion:** Energy requirements for construction of the water conveyance facilities
39 associated with the proposed project would equate to 3,056 GWh during the construction period.
40 The proposed project would also consume approximately 101 million gallons of diesel and gasoline.

1 **Incremental Impact:** Under the proposed project, the Byron Tract Forebay would be
2 constructed instead of an expanded Clifton Court Forebay. This footprint change would slightly
3 reduce electricity consumption relative to the approved project, holding all analysis methods,
4 factors, and environmental commitments from the Final EIR/EIS constant. As discussed in
5 Section 21.3.1, *Methods for Analysis*, the impact determination is based on fuel consumption
6 across the entire conveyance facility, inclusive of the Byron Tract Forebay design change and
7 revisions to account for engineering refinements. As with the approved project, construction
8 BMPs would ensure that only high-efficiency equipment is utilized during construction and that
9 construction activity would result in a less-than-significant impact on energy resources. No
10 mitigation is required.

11 **21.3.3 Cumulative Analysis**

12 The Final EIR/EIS found that construction of the approved project would not result in a cumulative
13 energy impact. Construction activities would consume diesel and gasoline to power heavy-duty
14 vehicles, as well as electricity to power tunnel boring machines and equipment. Gasoline and diesel
15 fuel consumption would be 101 million gallons over the entire construction period. The proposed
16 project and other cumulative projects would incorporate energy-saving measures required by
17 myriad state and local energy policies to improve energy efficiency and reduce waste. Measures
18 applicable to the proposed project are summarized in Appendix 3B, *Environmental Commitments,*
19 *AMMs, and CMs*. With all projects, including the proposed project, implementing similar measures, a
20 cumulative effect related to the inefficient use of energy would not occur.

21 **21.4 References Cited**

22 Department of Water Resources. 2018. *California WaterFix Addendum to the Final EIR*. January.