

COVER SHEET

**FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE UPPER AMERICAN RIVER AND CHILI BAR
HYDROELECTRIC PROJECTS
Docket Nos. P-2101-084 and P-2155-024**

Executive Summary
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FEIS

EXECUTIVE SUMMARY

This final environmental impact statement (final EIS) evaluates the potential effects on the environment associated with the relicensing of the seven hydroelectric developments that make up the existing 688-megawatt (MW) Upper American River Project (UARP) (Project No. 2101); the proposed construction of an eighth, 400-MW development at Iowa Hill (Iowa Hill development) as part of the UARP; and the relicensing of the 7-MW Chili Bar Project (Project No. 2155). The UARP is located on the Rubicon River, Silver Creek, and South Fork of the American River (SFAR) near Placerville, California. The Chili Bar Project is located on the SFAR in El Dorado County, near Placerville, California, immediately downstream of the UARP. The licenses for both Projects expired on July 31, 2007. On August 8, 2007, the Federal Energy Regulatory Commission (Commission) authorized continued operations of both Projects through July 31, 2008.

The Sacramento Municipal Utility District (SMUD) filed a license application with the Commission for the UARP on July 7, 2005. The Project occupies 6,375⁷ acres of federal land administered by the U.S. Department of Agriculture, Forest Service (Forest Service), in Eldorado National Forest and 42.3 acres of federal land administered by the U.S. Department of the Interior, Bureau of Land Management (BLM).

The Forest Service is reviewing an application for a special use permit for constructing SMUD's proposed Iowa Hill development on National Forest System lands. The Forest Service is also a cooperating agency in preparing this EIS for the UARP.

Pacific Gas and Electric Company (PG&E) filed a license application with the Commission for the Chili Bar Project on June 21, 2005. The Project, which consists of a single development, occupies 47.81 acres of federal land administered by the BLM.

The UARP and Chili Bar Project (Projects) have common stakeholders and issues, as well as operational and hydraulic interrelationships. PG&E and SMUD entered into two relicensing cooperation agreements that resolved many of the overlapping issues between the two Projects. These overlapping issues include coordinating operations and the flow releases into and out of Chili Bar reservoir. Operational coordination and flow-related resource measures are necessary because PG&E depends on the UARP and does not have control over the amount of water flowing into Chili Bar reservoir.

The key environmental issues tied to the existing operations of the UARP are providing suitable habitat in the downstream reaches to support native species and

⁷This acreage includes 185 acres of Eldorado National Forest lands associated with the proposed Iowa Hill development.

coordinating operations between SMUD and PG&E. Changing existing operations to increase instream flow would increase the quantity and velocity of flows into the downstream reaches. Increased flows would lower water temperatures and reduce sedimentation in these reaches. Lowering water temperatures, increasing flow velocities, and reducing sedimentation should have a positive effect on the abundance of native fish and benthic macroinvertebrates and the ability of amphibians to breed in these reaches. Increased coordination between SMUD and PG&E would reduce the number of unanticipated spills at the Chili Bar Project.

SMUD's and PG&E's license applications outlined their proposals to continue operating the Projects in accordance with certain existing and proposed operational and environmental measures. SMUD and PG&E filed a comprehensive Offer of Settlement (Settlement Agreement) with the Commission on February 1, 2007, that replaces the Proposed Actions. The terms of the Settlement Agreement⁸ include a wide range of measures described in Proposed Articles 1-1 through 1-37 for the UARP without the Iowa Hill development, Proposed Articles 1-38 through 1-50 for the UARP with the Iowa Hill development, and Proposed Articles 2-1 through 2-21 for the Chili Bar Project.

In written and oral comments on the draft EIS, local residents expressed concern about the proposed construction and operation of the Iowa Hill development and agencies that were signatories to the Settlement Agreement expressed concern about our suggested modifications to certain proposed measures. Local residents commented on traffic congestion and potential heavy equipment damage to county roads, the potential threat and damage from fire, loss of habitat, the visual effects of project facilities on nearby residences, and the effects of construction and construction traffic on tourism during apple picking season. They also commented that many attended meetings of the Iowa Hill Joint Advisory Committee (Advisory Committee) and questioned why some of the mitigation measures that SMUD is considering were not included in the draft EIS. In response to comments about the Iowa Hill development and to Commission staff requests, SMUD filed additional technical reports about traffic and aesthetics on January 31, 2008. We discuss the findings of those reports in this final EIS.

Agency representatives and stakeholders who signed the Settlement Agreement expressed concern about the recommended staff modifications to several of the proposed measures in the Settlement Agreement. Notably, they state that staff misunderstands the connection between the construction of the Iowa Hill development and the whitewater boating flows and request that the staff adopt the language of the Settlement Agreement in the final EIS. Although we no longer recommend that SMUD

⁸The Settlement Agreement is available on the Commission's web site from the eLibrary feature at <http://www.ferc.gov/docs-filing/elibrary.asp>. Accession number 20070208-4003.

file a new whitewater release schedule after 10 years of monitoring, with or without the construction of the Iowa Hill development, we continue to recommend that whitewater releases be made only if the recreational use and environmental triggers are met after 15 years following the issuance of any license.

Under the Proposed Action, SMUD would implement the following measures at the UARP: (1) a set of measures focused on the ecological health and suitability of reaches downstream of the Project dams to support native fish, amphibian, and reptile populations implemented in coordination with PG&E's Chili Bar Project; (2) a set of measures to provide for specific water level elevations for the protection of fish populations, assuring the availability of boat launch facilities, or to enhance the visual experience at the Project reservoirs; (3) a plan to monitor streamflows and reservoir elevations; (4) a set of measures that provide for the protection of wildlife and plants, including the implementation of wildlife safety measures at Project facilities; (5) a comprehensive program of monitoring to determine the effects of the increased minimum streamflows, pulse flows, and ramping rates on native fish populations, aquatic macroinvertebrates, amphibians and reptiles, riparian habitat, algae species, geomorphology, water temperature, and numerous water quality parameters in the reservoirs and stream reaches; (6) vegetation and invasive weed management plans, which would provide for the protection of sensitive species habitat and the control of noxious weeds; (7) a suite of measures that focus on upgrading, expanding, operating, and maintaining recreational facilities and services in response to user demands, monitoring future use, providing additional whitewater boating opportunities, providing public information, and fish stocking within the framework of a recreation implementation plan; (8) a plan for extending and formalizing trails that are needed for Project operations that are located on or affect National Forest System lands; (9) a plan to establish SMUD's level of responsibility for improving and maintaining Project access roads and to perform several specific improvements, including reconstructing and surfacing several Forest Service roads that provide access to the Project's recreational facilities; (10) a visual management plan; and (11) a Historic Properties Management Plan (HPMP) to protect cultural resources. These environmental measures are described in detail in this final EIS in section 2.4.3, *SMUD's Proposal*.

SMUD's Proposal includes construction and operation of the Iowa Hill development, a pumped-storage facility partially located on National Forest System lands. Under the Proposed Action, SMUD would implement a series of measures for resource protection during construction and operation of the proposed Iowa Hill development. These measures would address potential effects of the proposed development on water quality; groundwater; native fish and amphibians in Slab Creek reservoir; replacement of permanently disturbed wildlife habitat; control of traffic, air pollution, and noise during construction; recreational access to Slab Creek reservoir;

protection of cultural resources; and modification of facility designs so that they are compatible with the Eldorado National Forest visual quality objectives. These environmental measures also are described in detail in this final EIS in section 2.4.3, *SMUD's Proposal*.

Staff modified some of SMUD's proposed environmental measures to include the following measures: (1) file a report with the Commission by July 31 of each year about the provision of pulse flows; (2) prepare a Gerle Creek fish passage plan for brown trout; (3) expand the geographic scope of the invasive weed and vegetation management plans to include all land within the Project boundary affected by Project activities; (4) provide for an annual employee environmental awareness program in the vegetation management plan to educate employees and key personnel about the known locations of special status species and habitats; (5) prepare a transportation system management plan for roads on or affecting National Forest System lands and non-National Forest System roads that are primarily used for Project purposes and within the Project boundary; (6) prepare a plan for extending and formalizing trails primarily used for Project operations that are located on or affect National Forest System lands and are located or would be located within the Project boundary; (7) prepare a wildlife lands mitigation plan for the Iowa Hill development; and (8) provide enhanced recreation boating flows downstream of Slab Creek dam after year 15 of any new license if environmental and use triggers are met. None of these measures conflict with measures included in the Settlement Agreement. Staff's modified and additional recommended measures are described in this final EIS in section 2.7.5, *Staff Modification of SMUD's Proposal*.

Under the Proposed Action, PG&E would implement the following measures at the Chili Bar Project: (1) a set of measures focused on the ecological health and suitability of the reaches downstream of the Project dam to support native fish, amphibian, and reptile populations implemented in coordination with SMUD's UARP; (2) a plan to monitor streamflows and reservoir elevations; (3) a set of measures that provide for the protection of wildlife and plants; (4) a comprehensive program of monitoring to determine the effects of the increased minimum streamflows, pulse flows, and ramping rates on native fish populations, aquatic macroinvertebrates, amphibians and reptiles, riparian habitat, algae species, geomorphology, water temperature, and numerous water quality parameters in the reservoir and downstream reach; (5) vegetation and invasive weed management plans that provide for the protection of sensitive species habitat and the control of noxious weeds; (6) a suite of measures that focus on providing formal access to recreational boating, providing additional recreational boating flows, and providing public information services; (7) a visual management plan; and (8) an HPMP to protect cultural resources. These environmental measures are described in detail in final EIS section 2.5.3, *PG&E's Proposal*.

Staff modified PG&E's proposed vegetation and invasive weed management plans to: (1) expand the geographic scope of the invasive weed and vegetation management plans to include all land within the Project boundary affected by Project

activities, and (2) include in the vegetation management plan an annual employee environmental awareness program to educate employees and key personnel about the known locations of special status species and habitats. Staff also recommends the development of a recreation plan for the Chili Bar Project. None of these modifications or the additional staff measures conflict with the measures included in the Settlement Agreement. Staff's modified and additional recommended measures are described in final EIS section 2.7.5, *Staff Modification of PG&E's Proposal*.

In this final EIS, we analyze and evaluate the environmental effects associated with issuance of new licenses for the existing hydropower projects and the proposed Iowa Hill development, and recommend conditions for inclusion in any licenses issued. For any licenses issued, the Commission must determine that the projects will be best adapted to a comprehensive plan for improving or developing the waterway. In addition to the power and development purposes for which licenses are issued, the Commission must give equal consideration to energy conservation and the protection and enhancement of fish and wildlife, aesthetics, cultural resources, and recreational opportunities. This final EIS for the UARP and Chili Bar Project reflects the Commission staff's consideration of these factors.

Overall, the measures proposed by SMUD and PG&E under the terms of the Settlement Agreement, along with additional staff-recommended and modified measures, would protect and enhance existing water use, water quality, fish and wildlife, land use, aesthetics, recreational resources, and cultural resources. In addition, the Projects would continue to provide a reliable source of renewable energy for SMUD's and PG&E's customers. The Proposed Action with Staff Modifications (Staff Alternative) for both Projects includes all of the mandatory conditions filed by the Forest Service and BLM that are enforceable by the Commission. For the two conditions that would require payments to the Forest Service and BLM, we recommend alternative measures that would achieve the same objectives.

The Proposed Action includes construction and operation of the Iowa Hill development. Building Iowa Hill would disturb the majority of 283 acres of land within the proposed Project boundary for the Iowa Hill development and introduce new visual elements to the landscape. SMUD proposes in-kind replacement of habitat and construction of an underground powerhouse to minimize the effects on wildlife and neighboring land owners. Although constructing and operating the proposed development would have environmental effects, the pumped-storage operations would provide SMUD flexibility to help meet peak power needs.

Under the Staff Alternative, the UARP (which includes the Iowa Hill development) would generate 2,673,000 MWh and have a net annual benefit of \$110,791,000 (\$41.45/MWh). For Chili Bar, the Staff Alternative would generate 31,291 MWh and have a net annual benefit of \$481,200 (\$15.38/MWh).

Based on our independent analysis of the UARP, including our consideration of all relevant economic and environmental concerns, we conclude that issuing a new license for the Project as proposed by SMUD with the Iowa Hill development, along with staff's modifications and additions to those proposals, would be best adapted to a comprehensive plan for the proper use, conservation, and development of the UARP and the Upper American River.

Based on our independent analysis of the Chili Bar Project, including our consideration of all relevant economic and environmental concerns, we conclude that issuing a new license for the Project as proposed by PG&E, along with staff's modifications and additions to those proposals, would be best adapted to a comprehensive plan for the proper use, conservation, and development of the Chili Bar Project and the Upper American River.