

Dam would create 10-mile finger lake on San Francisco River

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A pumped hydroelectricity storage project being proposed west of Glenwood on the San Francisco River in Catron County and in Greenlee County, Ariz., is generating pushback from environmental groups and government agencies like the U.S. Forest Service and the Arizona Department of Game and Fish, according to documents filed with the Federal Energy Regulatory Commission, which is responsible for greenlighting the project.

The project would be capable of providing up to 1,250 megawatts of energy per hour on demand, likely running up to eight hours per day during peak-demand hours after 4 p.m. For comparison, the remaining two units online at the coal-fired San Juan Generating Station near Farmington generate up to 924 megawatts of electricity per hour.

In its application for a preliminary permit to build a 200-foot dam across the San Francisco River just inside the Arizona border, Pumped Hydro Storage says the project would “promote green, renewable power by providing a means to

store energy" generated by solar and wind farms as well as "provide an oversized dam for water storage for irrigation districts;" and "provide an oversized dam for flood control" as well as "providing a large lower reservoir for recreation and wildlife."

"We want to reduce the 'duck curve' that is developing for energy demand due to renewable energy sources" that stop contributing energy to the grid when the sun goes down, and demand for power goes up, said Steve Irwin, Pumped Hydro Storage manager. "Pumped hydro storage is ready for the dance, and battery storage methods aren't."

If the documents submitted in opposition to the project are any measure, the plan to create what Irwin described as a "10-mile finger lake" on a segment of the San Francisco River that is also marked out for protected status under the soon-to-be-introduced M.H. Dutch Salmon Greater Gila Wild and Scenic River Act legislation, isn't going to get far as is. That's OK by the project's proponents, Irwin and professional engineer Justin Rundle, who make up the Phoenix-based company. They say the company can modify the 1,300-acre project.

Upon learning that the project is proposed to take place within a protected wilderness study area and on a portion of the San Francisco River that is being proposed for protected status under the federal Wild and Scenic Rivers Act, Irwin

paused. "Hmmm. Then we might not get it.

"But," he continued, "we have another option. We can put the reservoir next to the river in a side canyon, and make it a closed system using groundwater pumps. That would knock the size of the project down to about a 750 megawatt project. Once we get the preliminary permit, we have three years to figure out if we can make it work — to go through the National Environmental Policy Act process, get an environmental impact statement, do the hydrology studies, get core-drill samples to determine if it's stable ground."

The company, which was formed in March of last year, had submitted applications for four separate hydro storage projects before it filed for the preliminary permit to build a dam and reservoir on the San Francisco River. Two of the previously proposed projects involved dams on the Little Colorado River, just miles from Grand Canyon National Park, which generated opposition from some Native American tribes, environmental groups and local businesses. "Those caused a lot of opposition," Irwin acknowledged, adding that his company is now only pursuing one of the Little Colorado River projects.

"But the best one we have proposed," Irwin continued, "is probably the Montezuma Pumped Storage Project," in Maricopa County, Ariz. "Arizona did a pumped-hydro site [study] in the 1980s, and that one was identified at that

time" but never pursued. "We consider it to be the best one because of proximity to Phoenix and to major power lines."

Pumped hydro storage projects need proximity to major transmission lines in order to buy the cheap electricity they use to pump water up to a reservoir — 1,500 feet higher in elevation above the San Francisco River in this case. Then, when demand is high and it can sell the electricity at a premium rate, it also uses the transmission lines to get the electricity back into the grid, by letting the stored water power turbines as it's released back to the river.

Who would benefit if the project moves forward?

"Rural electrification is complicated," Irwin said. "This is basically designed for all utilities who want to participate, although originally we were thinking of Tucson Electric Power [company], which has high voltage power lines next to it, and of Freeport-McMoRan."

Tucson Electric Power company hasn't agreed to anything, though, and has simply filed a comment with FERC, saying, "If the intent is for the project's new power generating sources to connect to the existing UNS-TEP 345kV facilities, the project would require a Large Generator Interconnection Request and would go through the Large Generator Interconnection Process."

Irwin said that Arizona's second largest utility company may be interested, however.

"The Salt River Project said, 'We really like pumped hydro storage.' They own two in Arizona already."

Metal mining giant Freeport-McMoRan owns large amounts of land and water rights in southwestern New Mexico and eastern Arizona, and operates the Morenci copper mine downstream in Arizona; in fact, the San Francisco River flows right through the middle of the giant open pit mine.

"Freeport has most of the water rights on the San Francisco," Irwin said. "Freeport isn't interested in electricity, but they are interested in water storage — possibly for the Morenci Mine."

Freeport hasn't yet agreed to lease or sell its water rights, or enter into any kind agreement with Pumped Hydro Storage, however, and the project is also the subject of multiple protests filed with the Federal Energy Regulatory Commission, including the U.S. Department of Agriculture, which oversees the U.S. Forest Service and no less than seven environmental protection groups.

In its motion to intervene, which is available on the FERC website, the USDA said, "The project applicant should note that, in addition to the imminent eligible designation for Wild

and Scenic Rivers for this section of the river under the revised Forest Plan, the Gila National Forest has been made aware that legislation including designation of the lower San Francisco River as a wild and scenic river is being drafted and is intended to be introduced to Congress at some point in the near future.

“The proposed project would impound waters of the lower San Francisco eligible for wild and scenic river [designation],” the USDA’s motion continues, adding that an “analysis for the project would need to address the following question: what effects would the project structures and impoundments of water have to the existing free-flowing nature and outstandingly remarkable values of the lower San Francisco-eligible wild and scenic river that are legally required to be protected until either a suitability study determination or legislative action by Congress?”

Irwin said he was aware of the USDA’s Feb. 21 filing. “I haven’t read it,” he said.

In a press release, the Center for Biological Diversity opposed the project outright.

“The free-flowing San Francisco River is one of the last, best cradles of biodiversity in the Southwest. This disastrous project would be its end,” Taylor McKinnon, a public lands campaigner at the center, is quoted as saying

in the release. "We'll fight like hell to ensure this boondoggle is never built."

"Tailwaters downstream from the San Francisco River dam would damage or destroy 44 river miles of proposed critical habitat for a threatened species, the narrow-headed garter snake, and 28 river miles of designated critical habitat for endangered loach minnows and spikedace," the center's release continues. "Recovery plans for both fish say that natural river flows are critical to their survival and competitive advantage against non-native fish. Loach minnow have been extirpated in tailwaters on the Gila and Salt rivers."

"This proposal is the latest threat to the San Francisco River and its riparian ecosystem," said Allyson Siwik, executive director of the Gila Conservation Coalition, in the release. "In addition to the diversion project contemplated under the Arizona Water Settlements Act, this project would further impact the natural flow of the San Francisco critical to the survival of several threatened and endangered species."

At the March 3 meeting of the New Mexico Entity of the Central Arizona Project — which ultimately wants to divert up to 14,000 acre-feet of water from the Gila and San Francisco rivers, the maximum allowed surface water that can be diverted under terms of the 2004 Arizona Water Settlements Act — Howard Hutchinson, who represents the

San Francisco Soil and Water Conservation District on the Entity's board, noted a glaring coincidence in the permit application for the San Francisco Pumped Hydro Storage Project.

"I noted in their [FERC] application, that they're proposing to store 14,000 acre-feet of water in this 200-foot-high concrete dam at the lower San Francisco," Hutchinson said. "It's going to be interesting to see the uphill battle they have. It is certainly being vociferously opposed and I am not sure I am much in favor of it unless they can figure out a way to deliver the 4,000 acre-feet of water to the San Francisco [Soil and Water Conservation District].

"I talked with Anthony [Gutierrez, executive director for the Entity,] earlier about this," Hutchinson said. "We both predict that there are corporate interests that are interested in the [AWSA] water."

The Sierra Club also weighed in on the proposed dam.

"Many of our rivers in the Southwest have been dammed, diverted and dried up, so rivers such as the San Francisco that have flowing water, especially year-round flows, are precious and critical to sustaining all kinds of life, including threatened and endangered species. That's why we can't support this pumped hydro storage project," Sandy Bahr, director of the Sierra Club's Grand Canyon Chapter, said in

the Center for Biological Diversity's release. "This project presents a false choice between protecting our rivers and storing energy. We can do both, but not with this project."

Irwin said Pumped Hydro Storage, which he described as "just two unemployed guys trying to get by," wants to employ the maxim: "buy low, and sell high."

"Here's the problem in the Southwest," he explained. "From 9 a.m. to 3 p.m., power prices are negative, minus one cent a kilowatt. So many solar arrays are dumping power into the grid during the day, and there's no storage for it. In Europe, 90 percent of power storage is by pumped hydro. It's very economical for 1,250 megawatts of output per hour. We'll probably have six to eight hours of storage, with six turbines."

"We have a lower reservoir in the SF River bed and an upper reservoir, adjacent to the river, 1,500 feet higher up in elevation on a mesa close by," Irwin said. "You can store a lot of power — and storage is electricity — with that high a reservoir."

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