Tule Hydroelectric Rehabilitation Project
Funding Group I

Application for:
WaterSMART: Water and Energy Efficiency Grants for FY2023
Funding Opportunity No. R23AS00008
July 28, 2022

Submitted by:
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TABLE OF CONTENTS

ATTACHMENTS

Attachment A – Existing Facility Photos

Attachment B – Existing Facility Damage Documentation

Attachment C – Budget Detail and Narrative

Attachment D – Official Resolution

Attachment E – Letter of Support – Southern California Edison

TECHNICAL PROPOSAL AND EVALUATION CRITERIA

EXECUTIVE SUMMARY

Date: July 28, 2022
Applicant Name: Tule Hydro LLC
Applicant Type: Category A (Other Organization with Water or Power Delivery Authority)
Location: Tulare County, East of Springville, California
Project Name: Tule Hydroelectric Rehabilitation Project
Federal Funding Amount: $500,000 – Funding Group I

Tule Hydro LLC will rebuild the existing Tule Hydroelectric Facility, located in Tulare County, east of Springville, California. (Latitude: 36°11'36" N, Longitude: 118°39'20" W).

In 2017 the existing facilities intake structure was severely damaged by a wildfire. In 2018 a flood/mudslide occurred due to the loss of slope stabilizing trees lost in the fire. As a result, the powerhouse sustained extensive water and mud damage. The hydro facility became inoperable and was mothballed. The owner during this time, Pacific Gas and Electric (PG&E) decided not to rehabilitate the facility and have signed a purchase and sale agreement with Tule Hydro LLC.

Tule Hydro LLC is undertaking the Tule Hydroelectric Rehabilitation Project to not only bring this 6.4 MW facility back online by repairing the intake structure and powerhouse, but increase historic generation by 5% (average increase of 1,200 MWHRs annually) through new, more efficient control systems for a total average annual production of 23,900 MWHRs. This project will also replace the existing 70kV interconnection with a new 12kV interconnection which will improve grid stability and fire safety.

The proposed project construction is to be completed in 6 months with an anticipated start date of May 1, 2023 and a completion date of October 31, 2023.

This facility is not located on a Federal facility.

PROJECT LOCATION

Provide detailed information on the proposed project location or project area including a map showing the specific geographic location.

The Tule Hydroelectric Rehabilitation Project is located in Tulare County, California approximately 8 miles east of Springville. The powerhouse coordinates are Latitude: 36° 11' 36" and, Longitude: 118° 39' 20". See Vicinity Map in Figure 1 below.

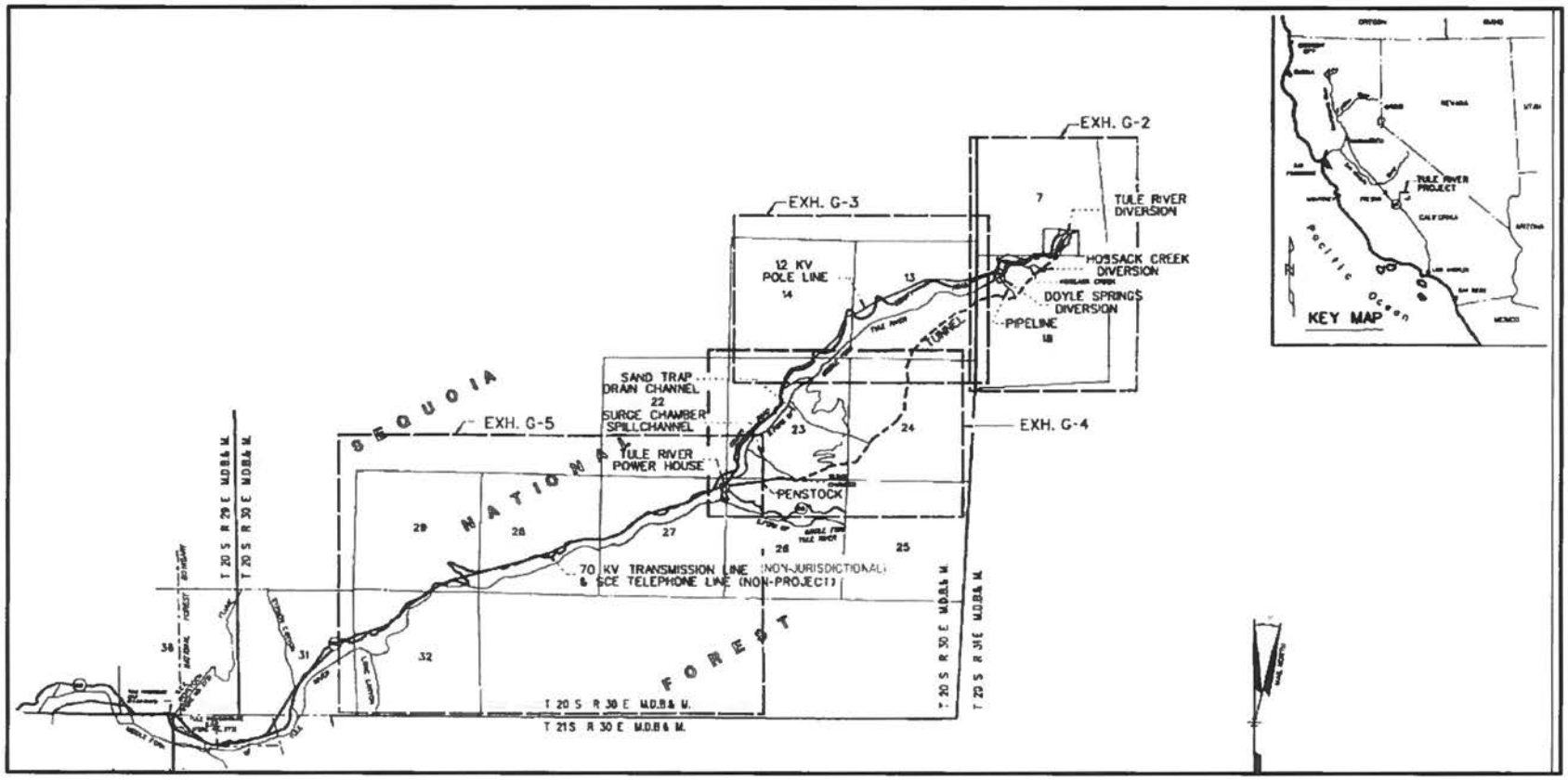

Figure 1 – Vicinity Map

TECHNICAL PROJECT DESCRIPTION

Provide a more comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work. This description should provide detailed information about the project including materials and equipment and the work to be conducted to complete the project. This section provides an opportunity for the applicant to provide a clear description of the technical nature of the project and to address any aspect of the project that reviewers may need additional information to understand.

Project features are summarized below and existing facility photos shown in Attachment A.

Existing Facility

The existing project facilities were constructed between about 1902 and 1914. The project diverts water from the North Fork of the Tule River and Hossack Creek, a North Fork tributary, into the Tule River Conduit where the water flows to the Tule River Powerhouse and then returns to the North Fork. The project is operated in a run-of-river mode and has minimum bypass flows per the Federal Energy Regulatory Commission (FERC) License requirements. The project consists of three diversions, one 3.2-mile conduit, one 0.7-mile steel penstock with a 1,532-foot head, two Allis Chalmers 3.2 MW Pelton-type turbines and generators (combined capacity of 6.4 MW). The 1972-2016 average generation was 22,800 MWHrs for a capacity factor of approximately 41%. Annual generation and average monthly generation since 1972 are summarized in Table 1, Figure 2, and Figure 3 below. Water supply and electrical generation and substantially determined by weather conditions. The decreased generation between 2013 and 2015 were due to the state-wide drought.

Table 1 - Historic Generation (MWHrs)

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1972	1,173	1,723	2,659	2,164	2,224	1,490	937	346	651	640	1,216	1,609	16,833
1973	2,399	2,318	3,218	4,270	4,684	4,438	3,200	1,204	1,239	1,338	1,411	1,904	31,623
1974	3,250	2,203	4,307	4,412	4,762	4,185	2,292	891	1,098	1,040	1,043	993	30,475
1975	1,252	1,769	3,130	2,902	4,749	4,503	2,498	1,458	1,089	1,402	691	803	26,245
1976	1,103	1,303	2,075	2,330	2,835	1,379	883	661	824	907	720	631	15,649
1977	801	784	1,046	1,371	1,456	1,427	713	207	385	475	554	1,369	10,587
1978	2,739	3,346	4,507	4,515	4,605	4,397	4,195	2,177	1,928	836	1,210	1,417	35,871
1979	1,763	2,005	3,732	4,381	4,702	3,919	1,915	1,079	1,012	1,096	1,234	1,236	28,074
1980	3,345	4,178	3,104	4,657	4,818	4,507	4,430	2,521	1,605	1,248	1,156	1,356	36,925
1981	1,274	1,879	2,518	4,287	4,487	2,413	1,176	585	732	860	1,185	1,625	23,019
1982	2,588	3,197	4,688	4,025	4,567	4,368	3,017	1,687	1,506	2,103	3,094	2,949	37,789
1983	4,603	4,322	4,698	4,563	4,793	4,498	4,515	3,953	2,159	2,033	2,765	4,346	47,247
1984	4,536	2,739	4,540	4,537	4,672	3,389	1,937	1,018	744	1,268	1,625	1,800	32,805
1985	2,128	2,380	3,014	4,594	4,617	3,525	1,642	467	962	1,030	1,285	2,121	27,764
1986	2,803	3,363	4,718	4,530	4,574	4,205	2,376	919	1,336	1,338	1,195	1,153	32,508
1987	1,176	1,599	2,358	3,976	3,258	1,434	979	470	686	608	890	1,303	18,737
1988	1,856	1,652	2,165	2,611	3,187	1,607	875	672	498	480	787	1,027	17,416
1989	1,164	1,563	4,046	4,399	3,673	1,666	616	634	621	736	679	715	20,512
1990	854	1,019	2,196	2,466	2,348	1,618	216	222	377	489	546	568	12,919
1991	703	536	2,028	3,765	4,558	3,574	1,313	826	587	446	839	741	19,916
1992	853	1,447	1,774	3,119	2,421	922	404	323	402	571	790	924	13,950
1993	2,331	2,230	4,172	4,586	4,575	4,363	2,300	850	439	527	546	778	27,696
1994	742	986	2,338	2,891	4,109	1,459	498	307	202	-49	393	532	14,409
1995	2,176	3,154	4,468	4,283	4,740	4,555	4,534	2,310	1,241	464	670	949	33,543
1996	1,528	3,989	4,670	4,528	4,637	3,785	1,788	229	743	662	1,684	4,090	32,333
1997	4,430	4,296	4,745	4,592	4,639	3,465	1,698	869	653	216	838	1,289	31,730
1998	2,165	3,650	4,222	4,544	4,769	4,559	4,667	2,897	1,682	937	1,341	1,402	36,835
1999	1,372	2,046	2,044	3,052	4,245	1,844	758	405	18	287	297	430	16,798
2000	832	1,526	3,211	3,941	4,408	1,889	606	126	0	177	638	549	17,904
2001	624	944	2,612	3,394	4,218	1,149	558	32	0	16	649	1,351	15,547
2002	2,112	1,550	2,695	4,263	4,222	2,297	772	344	0	0	976	1,893	21,124
2003	2,500	2,145	3,504	3,769	4,578	3,453	1,427	752	69	500	672	1,007	24,376
2004	1,612	1,688	3,750	3,509	3,076	1,312	576	156	0	372	579	609	17,240
2005	2,900	2,329	3,914	4,412	4,661	4,389	2,838	1,083	615	0	0	901	28,044
2006	2,684	1,904	3,787	4,153	4,643	4,108	2,035	970	370	330	383	687	26,055
2007	905	978	2,187	2,337	2,084	718	116	0	0	0	0	261	9,587
2008	1,326	2,174	3,882	4,310	4,465	3,229	883	170	0	0	261	345	21,046
2009	1,365	1,919	2,629	2,977	4,459	2,041	759	335	0	442	383	869	18,180
2010	1,362	1,892	3,504	4,262	4,724	4,561	2,828	942	130	0	96	2,070	26,370
2011	3,785	3,449	4,603	4,588	4,711	3,398	3,864	1,024	0	0	77	335	29,834
2012	738	1,012	1,910	3,772	3,551	921	123	0	0	0	0	538	12,566
2013	1,136	1,021	1,446	1,900	1,316	243	3	0	0	0	0	0	7,066
2014	0	210	552	1,395	1,221	187	0	0	0	0	0	49	3,615
2015	3	33	246	0	0	0	0	0	0	0	0	193	476
2016	1,141	2,678	3,664	3,662	2,999	967	0	0	0	0	0	0	15,110
Average	**1,825**	**2,070**	**3,139**	**3,622**	**3,845**	**2,719**	**1,639**	**803**	**591**	**574**	**787**	**1,149**	**22,763**

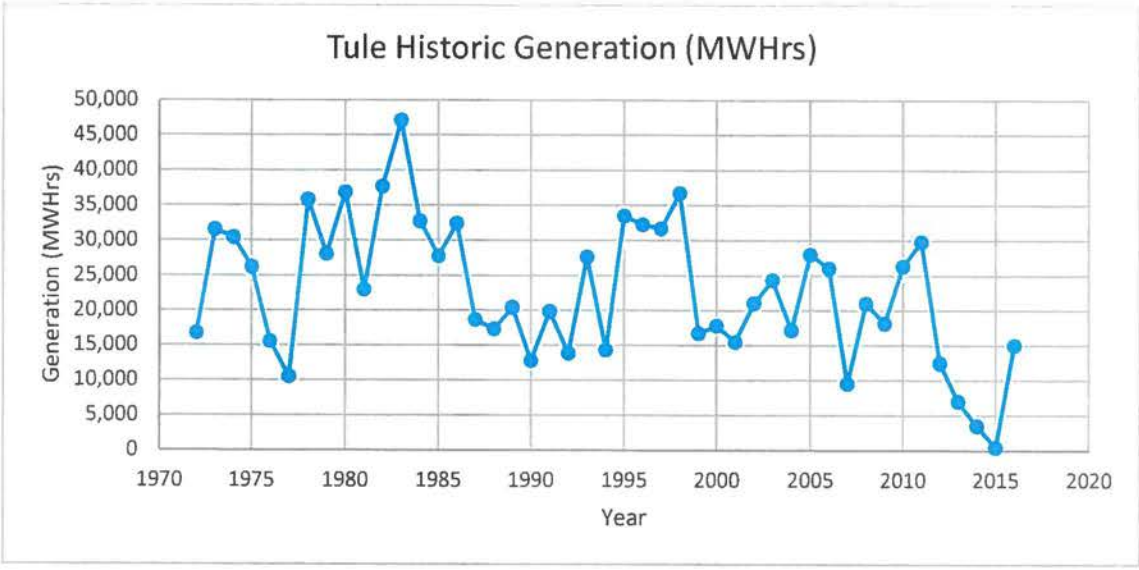

Figure 2 – 1972 to 2016 Annual Generation

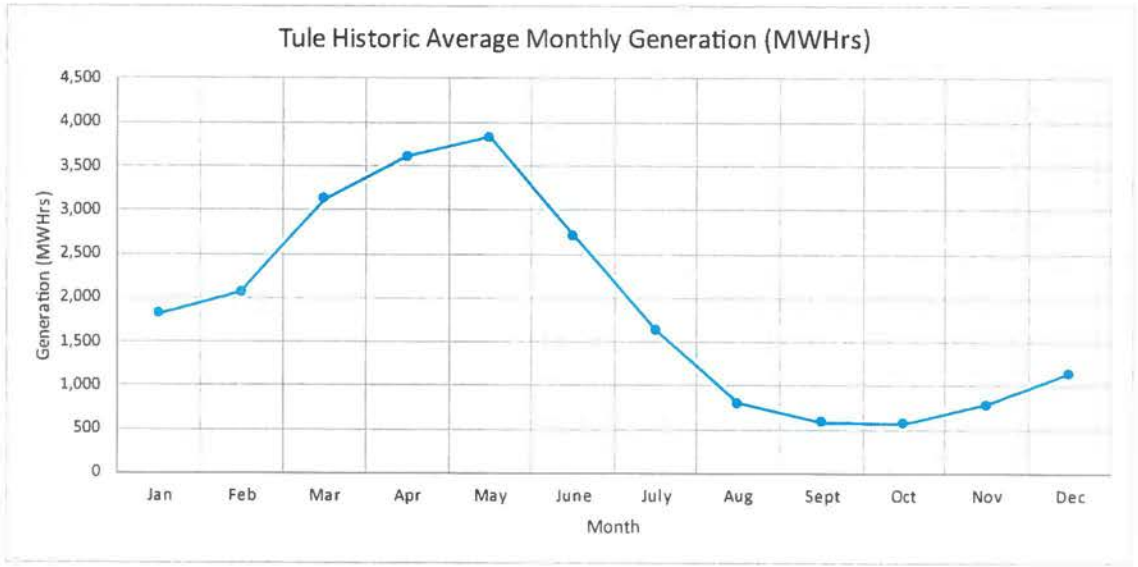

Figure 3 – 1972-2016 Average Monthly Generation

In 2017 the existing Tule Hydroelectric facilities intake structure was severely damaged by a wildfire. In 2018 a flood/mudslide occurred due to the loss of slope stabilizing trees lost in the fire. As a result, the powerhouse sustained extensive water and mud damage. The hydro facility become inoperable and was mothballed by PG&E. The Tule Hydroelectric Rehabilitation Project will bring this existing mothballed water management facility back online and is discussed in more detail in the following sections. Benefits of increasing renewable energy is discussed in more detail in Section E.1.2.

Intake Fire Rehabilitation

The fire damaged intake structure's concrete remained in good condition, but the other components are totaled. As a result, a new penstock inlet gate and new bypass gate with actuators need to be installed. A new control house containing new controls will be installed. Power supply from the powerhouse to operate the controls will be restored. A new communication system between the powerhouse and intake control systems will be installed allowing for automatic control of inlet gates resulting in more efficient use of available flows. This benefit will be discussed in more detail in Section E.1.2.

Powerhouse Flood/Mud Rehabilitation

Flood waters and mud damaged the equipment inside the powerhouse. The powerhouse itself has already been cleaned out and is in good condition. The generator and turbine will need to be taken apart for thorough cleaning and restoration by specialists to ensure that all remaining mud debris has been removed and equipment has been restored to prior condition.

The existing controls and switchgear were also damaged by exposure to water/mud. They could be rehabilitated, but they are of an older design, and it would be more cost effective in the long run to install new custom controls and switchgear using the latest standards and designs. The new controls would be able to communicate with the intake systems and provide head level control for the project. Head level controls allow the project to optimize usage of available flows and increase power generation by approximately 5% due to reduced bypasses around the hydroelectric system. This benefit will be discussed in more detail in Section E.1.2. A sync check relay will be installed to ensure the switchgear only closes when the generator's rotational speed is synced with the grid. The plant will be equipped with new automatic sensors to monitor voltages, currents, temperatures, vibrations, water levels, etc. The new controls will automatically call the operator for minor alarms and automatically shut down for more serious alarms.

A new transformer will be needed because the power generated will be stepped-up to 12 kV instead of 70 kV (see section below regarding the new interconnection). The new transformer will also be of a more modern design.

Transmission Line and Interconnection

Currently there is an approximately 15-mile long 70kV transmission line that transports the electric power generated at the powerhouse to another transmission line at PG&E's Springville substation located about 3 miles northeast of Porterville.

This existing PG&E transmission line is an island within the Southern California Edison (SCE) system. The existing transmission is a high voltage line with bare conductors which are a known fire hazard. The proposed project would build a new interconnection and connect to Southern

California Edison's (SCE) existing 12kV line with new safer covered conductors. The new interconnection One-Line diagrams are available upon request. The new interconnection would allow for the existing PG&E transmission line to be decommissioned. Benefits of decommissioning the existing transmission line is discussed in more detail in Section E.1.3 and Section E.1.6.

EVALUATION CRITERIA

E.1.1 Evaluation Criterion A: Quantifiable Water Savings

Up to 28 points may be awarded for this criterion. This criterion prioritizes projects that will conserve water and improve water use efficiency, supporting the goals of E.O. 14008. Points will be allocated based on the quantifiable water savings expected as a result of the project. Points will be allocated to give greater consideration to projects that are expected to result in more significant water savings.

This project has no quantifiable water savings.

E.1.2. Evaluation Criterion B – Renewable Energy

Up to 20 points may be awarded based on the extent to which the project increases the use of renewable energy or otherwise results in increased energy efficiency and reduced greenhouse gas emissions.

E.1.2.1 Subcriterion No. B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery

Up to 20 points may be awarded for projects that include constructing or installing renewable energy components (e.g., hydroelectric units, solar-electric facilities, wind energy systems, or facilities that otherwise enable the use of renewable energy). Projects such as small-scale solar resulting in minimal energy savings or production will be considered under Subcriterion No. B. 2.

Describe the amount of energy capacity. *For projects that implement renewable energy systems, state the estimated amount of capacity (in kilowatts) of the system. Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.*

The existing capacity of the Tule hydroelectric facility is 6,400 KW. There are two Pelton-type turbines each with a capacity of 3,200 KW.

The penstock to the powerplant has a capacity of approximately 60 cfs (bifurcation directs 30 cfs to each unit). The project's gross head is 1,532 feet and net head (includes head losses) is 1,490 ft. The generators were rewound in 1984 and the turbine runners were replaced immediately prior to 2017 fire. The estimated turbine and runner efficiency is 85%. Typical transmission/transformer losses are 0.5%.

The capacity was calculated using the formula below.

KW = [unit weight of water (lb/ft^3) * flow (cfs) * net head (ft) * turbine and generator efficiency * 0.746) / 550] * (1 – transmission/transformer losses)

KW = (2 units * 62.4 lb/ft^3 * 30 cfs * 1,490 ft * 0.85 * 0.746)/550 * (1-0.005)

$\approx$ 6,400 KW

Describe the amount of energy generated. *For projects that implement renewable energy systems, state the estimate amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate. Please explain how the power generated as a result of this project will be used, including any existing or planned agreements and infrastructure.*

The proposed project will bring the existing facility back online. Historic power generation data is available from 1972 to 2016. There is no data since 2016 because the project was mothballed in 2017 due to fire, flood, and mud damage. Power generation was measured with a utility grade meter located at the project interconnection. The average annual generation during that time period is 22,800 MWHrs. See Figure 4 and Technical Project Description for detailed historic generation values.

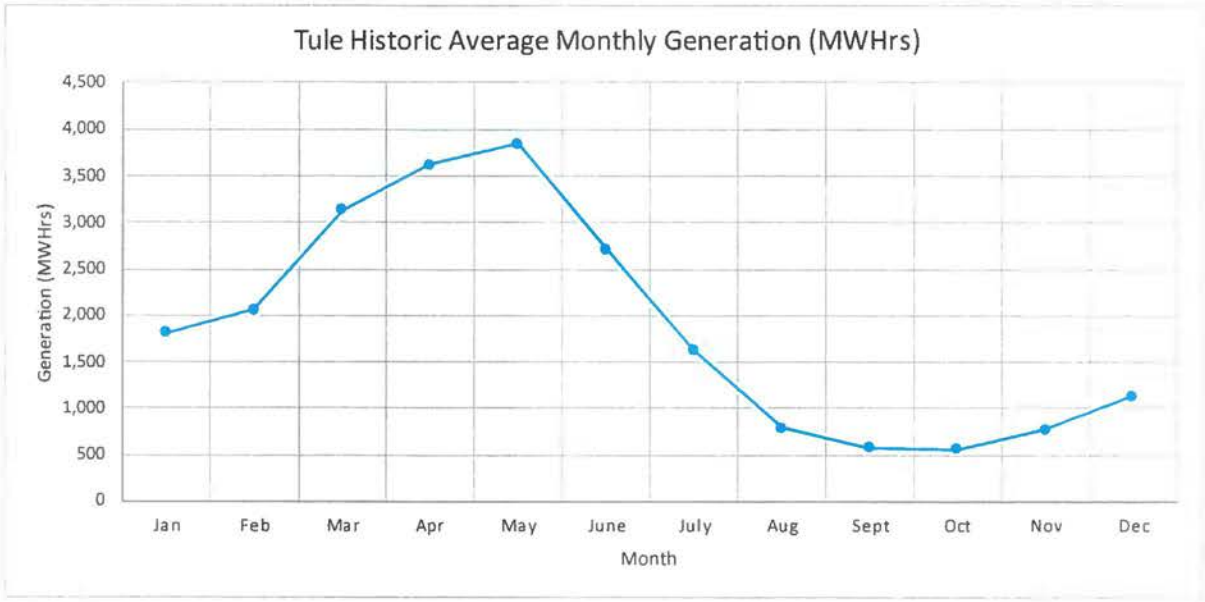

Figure 4 – Average Monthly Generation (1972 to 2016)

The proposed project will increase generation by an estimated 5-10% by installing new head level "smart" controls. Before the project became inoperable, the water level at the intake structure was set manually, always spilling water to ensure the pipeline was not dewatered. The smart controls will adjust wicket gates automatically every 20 seconds to hold a consistent water level at the intake structure. No water will be bypassed under normal operating conditions, resulting in optimized generation. The increased generation is estimated at 10%. A 5% increase is conservatively assumed. The historical manual adjustment of the wicket gates was completed once a day during the plant's daily visit. During winter runoff, the gate was set an estimated 5-10% below the daily minimum flow. The daily minimum flow occurs after sunset at approximately 2 am. This future daily minimum flow had to be estimated conservatively. If the flow was overestimated, the penstock would empty and the power plant would shut-off due to low penstock pressure, resulting is lost generation. The plant wasn't able to generate electricity from flows greater than the minimum flow every day. The potential daily flow peaks from snowmelt were lost. Additionally, increased generation from any rainstorms were lost."

For example, under the current system at the beginning of the day the bypass gate would be set to divert 10 cfs (minimum bypass flows per FERC license requirement) and 40 cfs to the hydroelectric powerplant. If a rainstorm occurs and river flows increase from 50 cfs to 70 cfs, the bypass gate would divert more than 10 cfs, depriving the hydro from using all of the additional 20 cfs available. With the new controls the bypass gate would automatically lower so only 10 cfs is bypassed when river flows increase, allowing the additional 20 cfs to be utilized by the hydropower facility.

This project will include a CAISO meter and access the California Independent System Operator (CAISO) through its interconnection with SCE The power from the Tule Project can be sold to an offtaker under a long-term power sales contract (who is also associated with the CAISO) or scheduled and sold on the day-ahead, 5 minute or instantaneous markets through the CAISO. In addition, the other attributed associated with the Tule Project (the Renewable Energy Credits and

Resource Adequacy) can be sold pursuant to a long-term contract or on the short-term market, which is very active in California (see Section E.1.5. for details). Because of escalating prices, Tule Hydro LLC has decided that selling into the short-term energy, REC (renewable energy credits), and Resource Adequacy markets will yield the highest return, but are constantly evaluating offers for longer term contracts as they are presented.

Describe the status of a mothballed hydro plant. *For projects that are bringing mothballed hydropower capacity back online, please describe the following:*

- *Clearly describe the work that will be accomplished through the WaterSMART Grant. Note: Normal OM&R activities are not eligible for funding. The work being proposed must be an investment.*

  The work that will be accomplished through the WaterSMART Grant is outlined in the Technical Project Description. The proposed project is a rehabilitation investment to repair damage from a fire, flood, and mudslide that severely damaged several project components resulting in the project being mothballed since 2017. The proposed work does not include any operation, maintenance, or replacement activities from normal wear and tear on the facility.

- *Provide information about the capacity (in kilowatts) of the existing hydro system and the expected capacity once it is brought back on-line.*

  The capacity of the existing hydro system is 6.4MW (see details in previous section). The expected capacity will remain at 6.4MW once the project is brought back on-line. New controls of modern design will increase the average annual power generation by at least 5% (see previous section for details).

- *Provide information about the duration that the hydro system has been offline and the reasons why it has been mothballed. Please include any regulatory reporting or filings (e.g. FERC filings) or other documentation regarding the system.*

  In 2017 the existing hydro facilities' intake structure was severely damaged by a wildfire. In 2018 a flood/mudslide occurred due to the loss of slope stabilizing trees lost in the fire. As a result, the powerhouse sustained extensive water and mud damage. The hydro facility become inoperable and was mothballed by PG&E. PG&E has signed a purchase agreement with Tule Hydro LLC who will be undertaking the Tule Hydroelectric Rehabilitation Project to bring the existing facilities back online. Attachment B includes FERC reports concerning the fire and flood/mud slide.

Describe any other benefits of the hydropower project. *Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including:*

See Section E.1.3 and Section E.1.5 for additional details.

- *How the system will combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.*

Hydropower is increasingly being recognized for its reliable, carbon-free contributions to the grid – with projects like this on existing water infrastructure having minimal environmental impacts. The Tule Hydroelectric Rehabilitation Project will produce an additional 23,900 MWHrs annually of carbon-free energy. According to the EPA Greenhouse Gas Equivalencies Calculator this additional renewable energy generation is equal to a carbon dioxide-equivalent greenhouse gas emissions of 16,938 metric tons.

- *Expected environmental benefits of the renewable energy system.*

  As a non-water consuming, carbon-free resource, run-of-river hydroelectric projects have low impact on the surrounding water systems, but are very environmentally friendly. The Union of Concerned Scientists have recognized that run-of-river hydro is the most carbon-reducing of all renewable technologies. And, because it is not as intermittent as wind and solar, it allows for the inclusion of more of those resources to be integrated into the grid. This project would allow for an increase in what the plant can actually produce with available water, adding more carbon-free, stable energy to the grid and decreasing the need for fossil fuels – both in direct production and in balancing and allowing the addition of more wind and solar.

- *Any expected reduction in the use of energy currently supplied through a Reclamation project*

  None.

- *Anticipated benefits to other sectors/entities*

  An additional benefit of this project is as a distributed energy source, decreasing transmission line losses. Currently, the energy required to power this rural area is carried over long distances, likely from a fossil fuel power plant. The farther the energy is transported, the higher the transmission energy losses.

  This hydroelectric facility's energy generation correlates directly with peak energy demand in the area. The facility's peak output is during the summer months when farmers are using high amounts of electricity to operate their irrigation pumps and residential/commercial buildings are using high amounts of electricity to operate air conditioners. This local consumption is well-matched to the facility's supply which increases the overall efficiency of the energy grid. SCE's Letter of Support in Attachment E provides additional details.

  Finally, the hydroelectric facility will economically benefit this rural, and economically disadvantaged area by purchasing many local supplies, hiring local electricians/mechanics during the rebuild and employing one full-time and one part-time operator.

- *Expected water needs, if any, of the system.*

  The hydroelectric facility has non-consumptive water rights.

E.1.2.2 Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

Up to 10 points may be awarded for projects that address energy demands and reduce greenhouse gas emissions by retrofitting equipment to increase energy efficiency and/or through water conservation improvements that result in reduced pumping or diversion.

This project does not include increasing energy consumption efficiency.

E.1.3. Evaluation Criterion C—Sustainability Benefits

Up to 20 points may be awarded under this criterion. This criterion prioritizes projects that address a specific water and/or energy sustainability concern(s), including enhancing drought resilience, addressing the current and future impacts of climate change, and resolving water related conflicts in the region. In addition, this criterion is focused on the benefits associated with the project, including benefits to tribes, ecosystem benefits, and other benefits to water and/or energy supply sustainability.

Enhancing drought resiliency. *In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that enhance drought resiliency, through this section and other sections above, consistent with the SECURE Water Act. Please provide information regarding how the project will enhance drought resilience by benefitting the water supply and ecosystem, including the following:*

- *Does the project seek to improve ecological resiliency to climate change?*

  The Tule Hydro Rehabilitation Project would generate renewable, carbon-free energy. This would reduce reliance on fossil fuels for energy production. The resulting reduction in carbon emissions would contribute to combating climate change.

- *Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels).*

  There are no quantifiable water savings from this project, however, by diverting flows into the 3.2 mile Tule River Conduit, up to 60 cfs of water will be partially protected from seepage and evaporation that would normally occur in the main Tule River channel. Water than runs through the conduit and power plant will also be cooler.

- *Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).*

  The 1991 FERC license for the Tule Hydro project included measures to protect three populations of Springville clarkia (Clarkia springvillensis), a threatened flowering plant from the evening primrose family. Major threats to the plant include livestock grazing and human road maintenance. It is likely that the conditions of the previous license will be re-visited upon relicense and continued protections for these species will be a term of

the new license. The Giant Sequoia National Monument Management Plan is the current plan for managing Springville clarkia.

- *Please describe any other ecosystem benefits as a direct result of the project.*

  None.

- *Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?*

  No.

Projects that are intended to improve streamflows or aquatic habitat, and that are requesting $500,000 or more in Federal funding, must include information about plans to monitor the benefits of the project. Please describe the plan to monitor improved streamflows or aquatic habitat benefits over a five-year period once the project has been completed. Provide detail on the steps to be taken to carry out the plan.

This project is not intended to improve streamflows or aquatic habitat, therefore no plans to monitor improved streamflows or aquatic habitat benefits of the project have been proposed.

Addressing a specific water and/or energy sustainability concern(s). *Will the project address a specific sustainability concern? Please address the following:*

- *Explain and provide detail of the specific issue(s) in the area that is impacting water sustainability, such as shortages due to drought and/or climate change, increased demand, or reduced deliveries.*

  As in many places in San Joaquin Valley, water shortages due to drought are one of the primary issues impacting the area. Low snow pack and higher temperatures increase reliance on groundwater pumping. Failed wells due to groundwater overdraft impact residential drinking water and agriculture. (As recently as May 6, 2022 the county received $3 million in drought relief funds) (https://calmatters.org/environment/2021/06/drought-tulare-county/)

- *Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.*

  California produces 117 million MWh (58% of production) of non-renewable energy annually and produces almost 63 billion kg on CO2 per year. California's energy consumption is about 248 million MWh, resulting in an annual energy deficit of about 48 million MWh. The burning of fossil fuels also adversely impacts air quality for many

Californians, especially in the San Juaquin Valley. California is currently committed to reaching carbon neutrality by 2045. (https://findenergy.com/ca/tulare-county-electricity/)

- *Please describe how the project will directly address the concern(s) stated above. For example, if experiencing shortages due to drought or climate change, how will the project directly address and confront the shortages?*

  Diverting some of the flows from the Tule River into the Tule River Conduit will conserve a moderate amount of water by reducing seepage and evaporative loss. Conserved water will be discharged into the Middle Fork of the Tule River and eventually stored in Lake Success.

  The Tule Hydro Rehabilitation Project would generate an estimated average of 23,900 MWh of carbon-free renewable energy annually. This will directly address California's energy deficit and offset some of the state's non-renewable energy production. Unfortunately, the project is largely reliant on annual snow pack for the flows that generate power, so drought conditions will reduce production.

- *Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

  Conserved water will be discharged into the Middle Fork of the Tule River. Once returned to the river system, water use will be determined by downstream users and regulators.

- *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*

  Conserved water will be flow through the Tule River Conduit and contribute to overall flow through the project powerhouse, resulting in an increase in energy generation.

- *Indicate the quantity of conserved water that will be used for the intended purpose(s).*

  Unfortunately, the conserved water could not robustly be quantified with available data.

Other project benefits. *Please provide a detailed explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:*

(1) ***Combating the Climate Crisis:*** *E.O. 14008: Tackling the Climate Crisis at Home and Abroad, focuses on increasing resilience to climate change and supporting climate esilient development. For additional information on the impacts of climate change*

throughout the western United States, see: https://www.usbr.gov/climate/secure/docs/2021secure/2021SECUREReport.pdf. Please describe how the project will address climate change, including the following:

a. *Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.*

   Run-of-river hydroelectric projects produce carbon-free, renewable, non-water consuming energy while having a low impact on surrounding water systems. The Union of Concerned Scientists have recognized that run-of-river hydro is the most carbon-reducing of all renewable technologies. Additionally, hydroelectricity allows for integration of more intermittent energy sources such as wind and solar by providing reliable generation during low production conditions for wind and solar. Overall, an investment in carbon-free, renewable energy reduces the grid's reliance on fossil fuels that produce CO2, which is one of the leading causes of global climate change.

b. *Does this proposed project strengthen water supply sustainability to increase resilience to climate change?*

   The proposed project will strengthen water supply sustainability because it is non-water consuming. During operation, it will likely conserve a small amount of water while generating carbon-free, renewable energy. The project will increase resilience to climate change by generating power that does not produce CO2 and reducing the need to generate power from fossil fuels.

c. *Will the proposed project establish and utilize a renewable energy source?*

   The proposed project will establish and utilize flows from the Tule River as a renewable energy source.

d. *Will the project result in lower greenhouse gas emissions?*

   The annual renewable energy production from the project will reduce the power grid's reliance on fossil fuels and lower greenhouse gas emissions. According to the EPA, Greenhouse Gas Equivalencies Calculator the estimated renewable energy generation for this project (23,900 MWh annually) is equal to 16,938 metric tons of carbon dioxide-equivalent greenhouse gas emissions.

(2) ***Disadvantaged or Underserved Communities:*** *E.O. 14008 and E.O. 13985 support environmental and economic justice by investing in underserved and disadvantaged communities and addressing the climate-related impacts to these communities, including*

impacts to public health, safety, and economic opportunities. Please describe how the project supports these Executive Orders, including:

a. *Does the proposed project directly serve and/or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to, public health and safety through water quality improvements, new water supplies, new renewable energy sources, or economic growth opportunities.*

   The Proposed project will benefit Springville and the rural area surrounding it. Additionally, according to the U.S. Census Bureau, 17.1% of individuals in Tulare County live below the poverty line. The proposed project will generate a number of temporary jobs during rehabilitation of the project facilities and one permanent job upon completion. Individuals below the poverty line will also benefit from a source of renewable energy.
   https://www.census.gov/quickfacts/tularecountycalifornia

b. *If the proposed project is providing benefits to a disadvantaged community, provide sufficient information to demonstrate that the community meets the disadvantaged community definition in Section 1015 of the Cooperative Watershed Act, which is defined as a community with an annual median household income that is less than 100 percent of the statewide annual median household income for the State, or the applicable state criteria for determining disadvantaged status.*

   According the U.S. Census Bureau, the annual median household income in Tulare County, CA is $52,534, while the annual median household income for the State of California is $78,672.

c. *If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.*

   Not applicable.

(3) ***Tribal Benefits:*** *The Department of the Interior is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum "Tribal Consultation and Strengthening Nation-to-Nation Relationships" asserts the importance of honoring the Federal government's commitments to Tribal Nations. Please address the following, if applicable:*

a. *Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?*

Not applicable.

b. *Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other tribal benefits such as improved public health and safety through water quality improvements, new water supplies, or economic growth opportunities?*

Not applicable.

(4) ***Other Benefits:*** *Will the project address water and/or energy sustainability in other ways not described above? For example:*

a. *Will the project assist States and water users in complying with interstate compacts?*

No.

b. *Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*

The local community will benefit from additional jobs during rehabilitation and completion of project facilities. Water users will benefit from a small amount of conserved water in the waterway. Energy users will benefit from a local source of clean, renewable energy.

c. *Will the project benefit a larger initiative to address sustainability?*

California is constantly working to address climate change. This project qualifies for the California Renewable Energy Portfolio Standard and will directly help California meet its clean energy goals. See Section E.1.5. for more details.

d. *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*

While the project will help conserve a small amount of water, it will not have a significant impact on water related crises or conflicts.

E.1.4. Evaluation Criterion D – Complementing On-Farm Irrigation Improvements

Up to 10 points may be awarded for projects that describe in detail how they will complement on-farm irrigation improvements eligible for NRCS financial or technical assistance.

This project will not complement on-farm irrigation improvements.

E.1.5. Evaluation Criterion E – Planning and Implementation

Up to 8 points may be awarded for these subcriteria.

E.1.5.1. Subcriterion E.1 – Project Planning

Points may be awarded for proposals with planning efforts that provide support for the proposed project.

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Does the project address an adaptation strategy identified in a completed WaterSMART Basin Study? Please self-certify or provide copies of these plans where appropriate to verify that such a plan is in place. Including a specific excerpt or a link to the planning document may also be considered where appropriate.

For more information on Basin Studies, including a list of completed basin studies and reports, please visit: www.usbr.gov/WaterSMART/bsp.

Provide the following information regarding project planning:

1) *Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Drought Contingency Plan or other planning efforts done to determine the priority of this project in relation to other potential projects.*

   Below is key legislation establishing a need for renewable energy in California that power from the Tule Hydroelectric Rehabilitation Project would help accomplish.

   - 2006 Senate Bill (SB) 107 required that investor-owned utilities (IOUs), electric service providers (ESPs) and community choice aggregators (CCAs) regulated by the California Public Utility Commission (CPUC) procure 20% of annual retail electricity sales from eligible renewable sources by 2010. The percentage of retail sales required from renewable sources is known as a renewable portfolio standard (RPS).
   - 2006 Assembly Bill (AB) 32 required that statewide greenhouse gas (GHG) emissions be reduced to 1990 levels by 2020.
   - 2008 Executive Order (EO) S-14-08 issued on November 17, 2008, and EO S-21-09 issued on September 15, 2009, set an RPS goal of 33% eligible renewable energy by 2020.
   - 2011 SB 2 made 33% RPS a legal requirement.
   - 2015 SB 350 required that all retail sellers of electricity meet a 50% RPS target by the end of 2030.In addition, SB 350 contains provisions that reduce GHG emissions, in part, by promoting electric vehicles.

   Several authorities administer the RPS and GHG programs summarized above.
   - California Public Utilities Commission (CPUC) administers the RPS compliance required under SB 107, SB 2 and SB 350 for IOUs, ESPs and CCAs.
   - CEC administers the RPS compliance required under SB 107, SB 2 and SB 350 for Publicly Owned Utilities (POUs).

- California Air Resources Board (CARB) is responsible for implementing the GHG reductions required under AB 32 and SB 350.

Compliance with RPS requirements is measured using renewable energy certificates (RECs).

- One REC is issued when one MWh of electricity is delivered to the grid from a qualifying renewable energy source.
- CPUC Decision 11-12-052 defines three types of RECs. Bucket 1: RECs bundled with the associated renewable energy from facilities interconnected to a California balancing authority or otherwise meeting certain deliverability requirements. Bucket 2: RECs from renewable facilities not directly connected to a California balancing authority. Bucket 3: REC's that are unbundled/tradable and sold separately from the associated energy.

2) *Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).*

   The Tule Hydroelectric Facility would produce Bucket 1 RECs which would help the power offtaker meet the California legislation outlined in the section above.

3) *If applicable, provide a detailed description of how a project is addressing an adaptation strategy specifically identified in a completed WaterSMART Basic Study or Water Management Options Pilot (e.g., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes).*

   Not applicable.

E.1.5.2. Subcriterion E.2 – Readiness to Proceed

Points may be awarded based upon the extent to which the proposed project is capable of proceeding upon entering into a financial assistance agreement. Please note, if your project is selected, responses provided in this section will be used to develop the scope of work that will be included in the financial assistance agreement.

Applications that include a detailed project implementation plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.

- *Identify and provide a summary description of the major tasks necessary to complete the project. Note: please do not repeat the more detailed technical project description provided in Section D.2.2.4.; this section should focus on a summary of the major tasks to be accomplished as part of the project.*

  The first step to completing the Tule Hydroelectric Rehabilitation Project is finalizing the FERC license transfer, finalizing the SCE interconnection agreement, and the power sales agreement. After those agreements are in place, the intake gate and controls/switchgear/transformer design will be finalized and that equipment will be

ordered. SCE will begin the interconnection design after the interconnection agreement is signed. Once the equipment is ready construction can begin on the site. This will include installing the gates, power supply and communication at the intake structure; restorative equipment cleaning in the powerhouse; installing the new switchgear, controls, and transformer at the powerhouse; and constructing the new interconnection. Once that is complete, the project will again be commercially operable.

See sections below for permitting and scheduling details.

- *Describe any permits that will be required, along with the process for obtaining such permits.*

  The Tule Hydroelectric Facility operates under an existing FERC License (Project No. 1333). The FERC License transfer from PG&E to Tule Hydro LLC is underway and expected to be approved by September 2022. The project consists of 12 deeded acres of real property and the FERC License gives site control as set forth in the project boundary.

  Tule Hydro LLC has made a down payment on the required interconnection facilities, has a letter agreement with the interconnecting utility (Southern California Edison) that's anticipated to be finalized by August 2022. This agreement sets forth additional payments and timeline, and is scheduled to have a full interconnection agreement signed by October 2022.

  Tule Hydro LLC plans on selling its energy through the CAISO day ahead markets for the first few years of operations, as well as marketing its renewable energy credits and any resource adequacy benefits to third-party offtakers, as there is increasing demand for these products.

  This is an existing facility and it's not anticipated that retrofitting activities will require additional permits.

- *Identify and describe any engineering or design work performed specifically in support of the proposed project.*

  Preliminary one-line diagrams incorporating the new controls, switchgear, transformer, and interconnection have been completed and are available upon request. Completed interconnection facility study with SCE.

- *Describe any new policies or administrative actions required to implement the project.*

  No new policies or administrative actions are required to implement the project.

- *Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete). Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation Regional or Area Office?*

The estimated project schedule is shown in Table 2 below.

Table 2 – Project Schedule

Item	Start Date	End Date
Permitting/Agreement		
Finalize FERC License Transfer	July 2022	Sept 2022
Finalize Interconnection Agreement	July 2022	Oct 2022
Finalize Power Sales Agreement	July 2022	Oct 2022
Intake Structures		
Order Gates	Nov 2022	Nov 2022
Install Gates, Power Supply, and Communications	May 2023	Oct 2023
Powerhouses		
Order Switchgear, Controls, and Transformer	Nov 2022	Nov 2022
Restorative Equipment Cleaning from Mud Damage	May 2023	Sept 2023
Install New Switchgear, Controls and Transformer	June 2023	Oct 2023
Interconnection	May 2023	Oct 2023

The expected timeline for environmental and cultural compliance was not discussed with the local Reclamation Regional or Area Office because this is an existing facility with no environmental or cultural compliance anticipated.

E.1.6 Evaluation Criterion F – Collaboration

Up to 6 points may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply.

Please describe how the project promotes and encourages collaboration. Consider the following:

- *Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?*

  The local utility, Southern California Edison (SCE) supports the Tule Hydroelectric Rehabilitation Project. The proposed project includes a new interconnection to SCE's existing 12 kV transmission line in the area.

- *What is the significance of the collaboration/support?*

  SCE is one of the largest electric utilities in the United States and a longtime leader in renewable energy and energy efficiency. SCE serves approximately 15 million people in a 50,000 square-mile area of central, coastal and Southern California. Although on paper the power will be sold to a third party, once the project's power is on the 12 kV SCE transmission line the electrons will go to the nearest electrical load. Therefore, SCE won't have to transport electrons from a long distance to meet the electrical demand in this rural area. This benefits SCE's electric grid by reducing of operating complexity, improving overall system reliability, and reducing transmission line losses. Details of these benefits are included in SCE's letter of support in Attachment E.

  SCE is one of the largest electric utilities in the United States, serving approximately 15 million people. Item 4 of the letter of support from SCE (Attachment E) states "the generating facility (Tule Hydro) connected at 12kV (12,000 volts) will be eligible for a 3.73% distribution loss factor credit due to avoided system losses, resulting in increased energy delivery…". Currently, the power used in SCE's distribution grid in the Tule Hydro area travels long distances resulting in significant transmission line and transformation losses. Transmission line loss is energy lost by transporting electricity over power lines. Transformation loss is energy lost through changing voltage through a transformer. The hydro will provide energy locally, offsetting long distance importing of energy, resulting in fewer transmission losses. Tule Hydro will connect to the energy grid at distribution voltage (12,000 volts). This will offset longer-distance imported power that is transformed to higher voltages (69,000 and 115,000 volts). The imported power is then transformed back down to distribution voltage (12,000 volts) resulting in additional transformation losses. SCE estimates the avoided losses resulting from the rehabilitation of Tule hydro to be 3.73%.

Additionally, this benefits SCE's electric grid by reducing of operating complexity and improving overall system reliability. Additional details of these benefits are included in SCE's letter of support in Attachment E.

- *Will this project increase the possibility/likelihood of future water conservation improvements by other water users?*

  No.

- *Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).*

  Letter of Support from SCE included in Attachment E.

E.1.7. Evaluation Criterion G – Additional Non-Federal Funding

Up to 4 points may be awarded to proposals that provide non-Federal funding in excess of 50% of the project costs. State the percentage of non-Federal funding provided using the following calculation:

Non-Federal Funding/Total Project Cost = 1,796,000/2,296,000 = 78.2%

E.1.8. Evaluation Criterion H – Nexus to Reclamation Project Activities

Up to 4 points may be awarded if the proposed project is connected to a Reclamation project or Reclamation activity. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider the following.

- *Does the applicant have a water service, repayment, or O&M contract with Reclamation?*

  No.

- *If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?*

  No.

- *Will the proposed work benefit a Reclamation project area or activity?*

  No.

- *Is the applicant a tribe?*

  No.

Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g. water saved or better managed, energy generated or saved).

The project control's panel can display the maximum generational output (i.e. capacity) after the project is recommissioned. A utility grade meter will measure actual annual generation of the project. This can be compared to the average annual generation prior to the improved control system.

PROJECT BUDGET

Budget Proposal and Funding Plan

The total project cost is the sum of all allowable items of costs, including all required cost sharing and voluntary committed cost sharing, including third-part contributions, that are necessary to complete the project.

The Summary of Non-Federal and Federal Funding Sources is shown in Table 3 below. Tule Hydro LLC will contribute 100% of the non-Federal cost share requirement from reserve accounts. There are no third party in-kind costs. No cash requested or received from other non-Federal entities. No other pending funding requests.

Table 3 - Summary of Non-Federal and Federal Funding Sources

Funding Sources	**Amount**
Non-Federal Entities	
1. Tule Hydro LLC	$1,796,000
2.	$0
3.	$0
Non-Federal Subtotal	$1,796,000
Requested Reclamation Funding	$500,000

The budget proposal should include detailed information on the categories listed below and must clearly identify all items of cost, including those that will be contributed as non-Federal cost share by the applicant (required and voluntary), third-party-in-kind contributions, and those that will be covered using the funding requested from Reclamation, and any requested pre-award costs.

The Total Project Cost is shown in Table 4 below.

Table 4 – Total Project Cost

Source	**Amount**
Costs to be reimbursed with the requested Federal funding	$ 500,000
Costs to be paid by the applicant	$ 1,796,000
Value of third-party contributions	$ 0
Total Project Cost	$ 2,296,000

Budget Narrative

Submission of a budget narrative is mandatory. An award will not be made to any applicant who fails to fully disclose this information. The budget narrative provides a discussion of, or explanation for, items included in Section B of the SF-424A. The types of information to describe in the narrative include, but are not limited to, those identified in the Budget Narrative Guidance attached to the Notice of Funding Opportunity (NOFO). Applicants may elect to use the Budget Detail and Narrative spreadsheet for their budget narrative (attached to NOFO). Costs, including valuation of third-party in-kind contributions, must comply with the applicable cost principles contained in 2 CFR Part §200, Section E – Costs Principles and be allowable (§200.403), allocable to the agreement (§200.405), and reasonable in amount (§200.404). Available at the Electronic Code of Federal Regulations (www.ecfr.gov).

The budget established for this project was prepared by the Project Manager, Ted Sorenson, P.E. The budget is based upon several past projects constructed, owned, and operated by Ted Sorenson, P.E. Sorenson has designed 45 hydroelectric facilities and currently owns/leases and operates 20 facilities. If selected for award, copies of quotes from past projects will be provided to support budgeted costs.

The budget detail and narrative are shown in Attachment C.

In addition, please ensure that the budget proposal includes any project costs that may be incurred prior to award. For each cost, describe: the project expenditure and amount; the data of cost incurrence; how the expenditure benefits the project. In no case will costs incurred prior to April 1, 2022, be considered for inclusion in the proposed project budget.

The budget proposal does not include any project costs that have been or may be incurred prior to April 1, 2022. Pre-award costs and reasoning are shown in Table 5 below.

Table 5 - Pre-Award Costs

Item	Pre-Award Cost	Reasoning
Intake Gates w/ Actuators	$ 32,500	50% deposit for equipment order around Jan 2023
Intake Control House	$ 30,000	50% deposit for equipment order around Mar 2023
Powerhouse – New Switchgear and Controls	$ 150,000	30% deposit for equipment order around Jan 2023
New Step-Up Transformer	$130,000	50% deposit for equipment order around Jan 2023
Interconnection	$500,000	50% deposit for equipment order around Sept 2023
Total Pre-Award Costs	$ 842,500	

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should consider the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should include the answers to:

1) *Will the project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*

   No significant environmental impacts are anticipated. Construction/rehabilitation activities will be limited to existing project facilities. There will be no earth-disturbing work and effects on air and animal habitat in the project area will be significant. Once operational, the project will divert water from the Tule River to generate power. While this will impact the Tule River, numerous enhancement measures were taken in the previous FERC license to minimize this impact. These measures included minimum flows in the Tule River, water temperature and ramping rate monitoring, fish passage enhancements, funding for the Wishon Campground, protection of populations of the threatened plant species Clarkia sprinqyillensis, and painting the buildings to blend with the surrounding landscape.

2) *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*

   A U.S. Fish and Wildlife Sercive IPaC analysis identified the following special status species. Endagered: Fisher (Pekania pennati), California Condor (Gymnogyps californianus), Southwestern Willow Flycatcher (Empidonax traillii), and Mountain Yellow-legged Frog (Rana muscosa). Threatened: Delta Smelt (Hypomesus transpacificus), Little Kern Golden Trout (Oncorhynchus aguabonita whitei), and Springville Clarkia (Clarkia sprinqyillensis). Candidate: Monarch Butterfly (Danaus plexippus). This IPaC analysis only identified critical habitat for Fisher (Pekania pennati).
   These species would not be affected by the activities associated with the proposed project. Construction/rehabilitation would only take place at the powerhouse and intake structure. These activities would be planned in coordination with appropriate state and federal agencies to ensure there is no impact.

3) *Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the project may have.*

No wetlands have been identified inside the project boundaries. The Tule River falls under CWA jurisdiction as "Waters of the United States." The project diverts water from the Tule River for the purpose of power production, after which it is returned to the river. The impacts and operational requirements of the project on water quality and quantity have been determined in the FERC licensing process. A copy of the FERC license is available upon request or available through the FERC elibrary.

4) *When was the water delivery system constructed?*

The Tule hydroelectric facility was originally built between 1902 and 1914.

5) *Will the project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*

The proposed project will replace the intake gate and bypass gate destroyed by a wildfire. The generator and turbine will need to be taken apart for thorough cleaning and restoration by specialists to ensure that all remaining mud debris has been removed and equipment has been restored to prior condition. The generator was rewound in 1985. The previous owners, PG&E have stated that the turbine runners are nearly new, but the exact date is unknown. It's assumed that all these features were constructed during the time of the original facility between 1902 and 1914.

The exact manufacturer date of the existing controls is unknown by the applicant at the time of this application, but it's assumed they were replaced at least one time between the original project completion in 1914 and prior the plant being mothballed in 2017. The proposed project will include replacing these controls.

The project will convey water in the same manner as the original design.

6) *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*

FERC's 1991 Environmental Assessment identified the Tule River Project as eligible for inclusions in the National Register of Historic Places (NRHP). However, there are currently no project features listed in the NRHP.

7) *Are there any known archeological sites in the proposed project area?*

The cultural survey done as part of the 1993 FERC license did not specify any archeological sites in the proposed project area, but it determined that project activities would have no impact.

8) *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*

The project will produce no significant pollution or visual disturbance. It is remote enough that generator noise will not impact any residential populations. The applicant will comply with all relevant water quality standards. This project will have no significant effect on low income or minority populations.

9) *Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*

No, the project site is not within tribal lands.

10) *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

Project construction/rehabilitation does not involve any ground disturbing activity. Project activities as well as project operation will not contribute to the introduction, continues existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

REQUIRED PERMITS OR APPROVALS

The applicant must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

The Tule Hydroelectric Facility operates under an existing FERC License (Project No. 1333). The FERC License transfer from PG&E to Tule Hydro LLC is underway and expected to be approved by September 2022. The project consists of 12 deeded acres of real property and the FERC License gives site control as set forth in the project boundary.

This is an existing facility and it's not anticipated that retrofitting activities will require additional permits.

This project does not include improvements to any to Federal facilities.

OVERLAP OR DUPLICATION OF EFFORT STATEMENT

Applicant must provide a statement that addresses if there is any overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. If any overlap exists, applicants must provide a description of the overlap in their application for review.

There is no overlap between the Tule Hydroelectric Retrofit Project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel.

Applicants must also state if the proposal submitted for consideration under this program does or does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source – whether it be Federal or non-Federal. If such circumstances exists, applicants must detail when the other duplicative proposal(s) were submitted, to whom (Agency name and Financial Assistance program), and when funding decisions are expected to be announced. If at any time a proposal is awarded funds that would be duplicative of the funding requested from Reclamation, applicants must notify the NOFO point of contact or the Program Coordinator immediately.

Tule Hydro LLC submitted a United States Department of Agriculture (USDA) Renewable Energy for America Program (REAP)grant application on March 31, 2022 for the scope of work outlined in this application. The funding decision is expected to be announced sometime in 2022. If the project is awarded this funding, Tule Hydro LLC will notify the NOFO point of contact or Program Coordinator immediately.

CONFLICT OF INTEREST DISCLOSURE STATEMENT

Conflict of Interest Disclosure Per the Financial Assistance Interior Regulation (FAIR), 2 CFR §1402.112, you must state in your application if any actual or potential conflicts of interest exists at the time of submission.

No actual or potential conflicts of interest exists at the time of submission.

LETTERS OF SUPPORT AND LETTERS OF PARTNERSHIP

All U.S. states, local governments, federally recognized Indian Tribal governments, and nonprofit organizations expending $750,000 in U.S. dollars or more in Federal award funds in your organization's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System in accordance with 2 CFR §200 subpart F. U.S. state, local government, federally recognized Indian Tribal governments, and non-profit applicants must state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the Employer Identification Number (EIN) associated with that report and state if it is available through the Federal Audit Clearinghouse website.

Tule Hydro LLC was not required to submit a Single Audit report for the most recently closed fiscal year.

LETTERS OF SUPPORT

Please include letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support/partnership letters as an appendix. Letters of support received after the application deadline for this NOFO will not be considered in the evaluation of the proposed project. These letters do not count within the 100 page maximum.

Stakeholders of the Tule Hydroelectric Rehabilitation Project include the Members of Tule Hydro LLC. The Tule Hydro LLC official resolution can be considered a letter of support and is included as Attachment D.

This project will be interconnecting to SCE whose letter of support is included in Attachment E.

LETTERS OF PARTNERSHIP

Category B applicants must include a letter from the Category A partner, stating that they are acting in partnership with the applicant and agree to the submittal and content of the proposal (see Section C.1. Eligible Applicants). Letters of Partnership must be received by the application deadline for this NOFO—otherwise the applicant will be considered ineligible, and the proposed project will not be evaluated.

Tule Hydro LLC is a Category A Applicant, therefore no letters of partnership are included.

OFFICIAL RESOLUTION

Include an official resolution adopted by the applicant's board of directors or governing body, or, for State government entities, an official authorized to commit the applicant to the financial and legal obligations associated with receipt of a financial assistance award under this NOFO, verifying;

- *The identity of the official with legal authority to enter into an agreement.*
- *The board of directions, governing body, or appropriate official who has reviewed and supports the application submitted.*
- *That the applicant will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.*

An Official Resolution verifying the information above and signed by the Members of Tule Hydro LLC is included in Attachment D.

UNIQUE ENTITY IDENTIFER AND SYSTEM FOR AWARD MANAGEMENT (SAM)

Reclamation will not make a Federal award to an applicant until the applicant has complied with all applicable Unique Entity Identifier (UEI) and SAM requirements and, if applicant has not fully complied with the requirements by the time the Reclamation is ready to make an award, Reclamation may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

Federal award recipients must also continue to maintain an active SAM.gov registration with current information through the life of their Federal award(s).

Tule Hydro LLC is registered with System for Award Management (SAM). The Unique Entity Identifier is MJC3MJQTQDN5. Tule Hydro LLC will continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency.

Attachment D

Official Resolution

Tule Hydro LLC

Official Resolution for the Tule Hydroelectric Rehabilitation Project

WaterSMART: Water and Energy Efficiency Grants for FY2023

July 28, 2022

WHEREAS, The U.S. Bureau of Reclamation is seeking proposals from organizations to leverage their money and resources in participation with Reclamation to stretch scarce water supplies and avoid conflicts over water through the WaterSMART: Water and Energy Efficiency Grants for FY 2023 Program;

WHEREAS, Tule Hydro LLC desires to apply for funding through Reclamation's WaterSMART Grant Program;

NOW THEREFORE BE IT RESOLVED that the Members of Tule Hydro LLC agree and authorize the following:

1. The Members, Ted S. Sorenson, Daniel K. Batdorf, and Gail L. Batdorf, have the legal authority to sign and enter into the agreement.
2. The Members have reviewed and support this proposal for the Tule Hydroelectric Rehabilitation Project;
3. If selected for the WaterSMART Grant, Tule Hydro LLC will work with Reclamation to meet established deadlines for entering into the grant agreement.

Ted S. Sorenson
President of Sorenson Tule LLC

Daniel K. Batdorf
Trustee of The Daniel K. and Gail L. Batdorf 2010 Revocable Trust

Gail L. Batdorf
Trustee of The Daniel K. and Gail L. Batdorf 2010 Revocable Trust

Attachment E

Letter of Support - SCE

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL Company

July 18, 2022

Bureau of Reclamation
Water Smart Grant Coordinator
c/o Tule Hydro LLC
711 East Turtle Point Drive
Ivins, Utah 84738

Re: Support for "Tule Hydro Rebuild"

To Whom It May Concern:

Southern California Edison Company ("SCE") is in support of the Tule Hydro Rebuild, which includes conversion of the interconnection from 70kV to 12kV. The new 12kV interconnection is expected to provide several benefits, including:

1. The 12kV interconnection will reduce operating complexity and improve overall system reliability for both SCE and the generating facility.

2. The 12kV interconnection significantly reduces the miles of distribution assets that would otherwise be owned, and have to be operated and maintained, by the generating facility owner.

3. The 12kV interconnection will utilize new covered conductor, which provides safety and reliability benefits.

4. In accordance with SCE's Wholesale Distribution Access Tariff, the generating facility connected at 12kV will be eligible for a 3.73% distribution loss factor credit due to avoided system losses, resulting in increased energy delivery to the California Independent System Operator Corporation ("CAISO") controlled grid.

5. Completion of the Tule Hydro Rebuild and the 12kV interconnection will allow the generating facility to connect to the grid and deliver clean renewable energy.

Sincerely,

John E. Tucker