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DATE: January 23, 2023

TO: Interested Parties

FROM: Joseph Douglas, Compliance Project Manager

SUBJECT: Henrietta Peaker Project (01-AFC-18C)
CEC Staff Analysis of Petition to Amend the Final Commission Decision

On August 23, 2022, the MRP San Joaquin Energy LLC, the project owner, filed a post certification petition with the California Energy Commission (CEC) requesting to amend the Henrietta Peaker Project (HPP) Final Commission Decision (Decision). The project owner is seeking approval to install a 99.4-megawatt (MW) battery energy storage system (BESS) at the existing HPP.

HPP is a 95-MW simple-cycle, natural gas-fired power plant located approximately one mile south of Highway 198 on 25th Avenue southeast of the City of Livermore in Kings County. The facility was certified by the CEC in January 2002 and began commercial operation in July 2002.

Description of Proposed Change

1. An amendment to the Decision for the HPP to change the project description to include the interconnection of the BESS at the low side of the existing generator step-up unit/main power transformer (GSU) and the use of the common facilities.
2. An amendment to the Decision identifying Henrietta BESS LLC as the party that will have legal responsibility for the operation of the Henrietta BESS and will be the responsible party for compliance with the CEC conditions of certification and applicable laws, ordinances, regulations, and standards (LORS) for the Henrietta BESS Project.

The HPP and Henrietta BESS Project will be co-located on the same CEC-jurisdictional site. Specifically, the entire Assessor Parcel No. 024-190-070-000 is owned by MRP San Joaquin Energy LLC. A lease or easement will be provided to Henrietta BESS LLC, which will own and operate the BESS within that same parcel.

While the HPP and Henrietta BESS Project will have separate ownership and obligations under the conditions of certification, the two facilities will share some common infrastructure sufficient for the BESS project to appropriately be subject to a post-certification petition for project change under California Code of Regulations, title 20,

section 1769. Such integration includes the HPP and Henrietta BESS Project sharing the generator step-up transformer, the generation interconnection (gen-tie) line, and a common point of interconnect with the California Independent System Operator (California ISO)-controlled/ Pacific Gas and Electric Company-owned transmission systems. The proposed BESS project would not increase the output of the power plant beyond the CEC licensed capacity and would not exceed the California ISO Aggregate Capability Constraint of 99.4-MW at the point of interconnection. In addition, the proposed Henrietta BESS Project will not result in an increase in the HPP's hourly or annual air emissions above currently permitted limits.

The HPP and the Henrietta BESS Project will each have their own metering equipment and California ISO Resource ID numbers. MRP San Joaquin Energy LLC will remain responsible for the operations of the power plant and will remain as the party responsible for compliance with the CEC conditions of certification and applicable laws, ordinances, regulations, and standards (LORS) for the HPP. In like fashion, Henrietta BESS LLC will have legal responsibility for the operation of the BESS and will be the responsible party for compliance with the CEC conditions of certification and applicable LORS for the BESS.

The Henrietta BESS Project would be charged exclusively from the grid, particularly when excess renewable energy is available, storing this energy for later use during peak periods when renewable energy is less available, resulting in potentially lower total greenhouse gas (GHG) emissions when the stored, clean energy is used to replace energy sourced from GHG-emitting sources. Furthermore, dispatches from the Henrietta BESS Project would displace energy that would otherwise be generated, most likely from other more GHG and criteria pollutant intensive system power resources.

As stated in the petition, the Henrietta BESS Project will be constructed in part to support California's current need for additional electrical energy storage available for dispatch during peak load demand time periods in the summer and would advance the State's and the California Public Utility Commission's policy of 60 percent renewable power by 2030 and 100 percent by 2045 (Senate Bill 100). The project owner further states, the Henrietta BESS Project offers the California ISO a reliable dispatchable energy resource to the electrical grid.

CEC Staff Review and Conclusions

California Code of Regulations, title 20, section 1769 requires a project owner to petition the CEC for the approval of any change the project owner proposes to the project, design, operation, or performance requirements of a certified facility.

Consistent with California Code of Regulations, title 20, section 1769, the CEC staff has reviewed the petition for potential environmental effects and consistency with applicable LORS. Based on staff's analysis, contained below, staff has concluded that the proposed changes to the HPP would not have a significant effect on the

environment, or cause the project to fail to comply with any applicable LORS, with implementation of existing conditions of certification as adopted in the Decision or previous amendments to that decision, and adoption of new or modified conditions of certification in the areas of Biological Resources, Transmission System Engineering, and Worker Safety and Fire Protection. Consistent with California Code of Regulations, title 20, section 1769(a)(4), staff is bringing this petition to the Commission for approval.

Staff also concludes that none of the findings specified in California Code of Regulations, title 20, section 1748(b) apply to the proposed change.

Based on the additional biological and worker safety and fire protection mitigation (conditions of certification), staff is supplementing the existing staff assessment, consistent with Public Resources Code section 21166 and California Code of Regulations, title 14, section 15163.

The CEC staff concludes that, with the adoption of the recommendations in the analysis below, HPP would remain in compliance with applicable LORS, and the proposed changes to HPP would not result in any significant adverse direct, indirect, or cumulative impacts to the environment.

Staff intends to recommend approval of the petition at the February 28, 2023, CEC Business Meeting.

The [CEC's project webpage](https://www.energy.ca.gov/powerplant/simple-cycle/henrietta-peaker-project), <https://www.energy.ca.gov/powerplant/simple-cycle/henrietta-peaker-project>, has a link to the petition and the Staff Analysis on the right side of the webpage in the box labeled "Compliance Proceeding." Click on the ["Docket Log \(01-AFC-18C\)"](#) option. If approved, the CEC's Order approving this petition will also be available from the same webpage.

This letter has been mailed to the CEC's list of interested parties and property owners of all parcels within 500 feet of any affected project linear facilities and 1,000 feet of the project site. It has also been emailed to the HPP subscription list. The list is an automated the CEC email system by which information about this facility is emailed to parties who have subscribed. To subscribe, go to the [CEC's project webpage](#), cited above, scroll down the right side of the project's webpage to the box labeled "Subscribe," and provide the requested contact information.

Any person may comment on the Staff Analysis. Those who wish to submit comments on the analysis prior to the CEC Business meeting may do so by using the CEC's electronic commenting feature. Go to the [CEC's project webpage](#) and click on either the "Comment on this Proceeding," or ["Submit e-Comment"](#) link. When your comments are filed, you will receive an email with a link to them.

Written comments may also be mailed or hand-delivered to:

California Energy Commission
Docket Unit, MS-4
Docket No. 01-AFC-18C
715 P Street
Sacramento, CA 95814-5512

Comments will also be accepted during the scheduled business meeting. All comments and materials filed with the Dockets Unit will be added to the facility Docket Log and become publicly accessible on the [CEC's project webpage](#).

If you have questions about this notice, please contact Compliance Project Manager Joseph Douglas, Compliance Monitoring and Enforcement Unit, Safety and Reliability Branch, at (916) 956-9527 or via e-mail at joseph.douglas@energy.ca.gov.

For information on public participation, please contact the CEC's Office of Public Advisor, Energy Equity, and Tribal Affairs at (916) 957-7910 or email at publicadvisor@energy.ca.gov.

News media inquiries should be directed to the CEC's Media Office at (916) 654-4989, or by e-mail to mediaoffice@energy.ca.gov.

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HENRIETTA PEAKER PROJECT (01-AFC-18C)

Petition to Amend Commission Decision

EXECUTIVE SUMMARY

Joseph Douglas

INTRODUCTION

On August 23, 2022, the MRP San Joaquin Energy LLC, the project owner, filed a post certification petition ([TN#245663](#)) with the California Energy Commission (CEC) requesting to amend the Henrietta Peaker Project (HPP) CEC Final Decision (Decision) to install a 99.4-megawatt (MW) battery energy storage system (BESS) at the existing HPP. Staff has completed its review of all materials received.

The HPP is a 95-MW simple-cycle, natural gas-fired power plant located approximately one mile south of Highway 198 on 25th Avenue southeast of the City of Livermore in Kings County. The facility was certified by the CEC in January 2002 and began commercial operation in July 2002.

The HPP was licensed as a nominal 95-MW natural-gas fired, simple-cycle peaking facility consisting of two GE LM-6000 natural gas-fired combustion turbine generator (CTG) units.

The HPP is approved to use up to 158 acre-feet per year of water for plant operations. The source of this water is from the federal Central Valley Project and State Water Project allocations purchased through Kings County. The project also utilizes a permanent, single-pass reverse osmosis system for water deionizing treatment.

The CEC staff is supplementing the existing staff assessment to account for additional mitigation conditions of certifications for biological resources, land use, transmission system engineering, and worker safety and fire protection.

DESCRIPTION OF PROPOSED CHANGE(S)

The project owner is seeking approval to:

1. An amendment to the Decision for the HPP to change the project description to include the interconnection of the BESS at the low side of the existing generator step-up unit/main power transformer (GSU) and the use of the common facilities.
2. An amendment to the Decision identifying Henrietta BESS LLC as the party that will have legal responsibility for the operation of the Henrietta BESS and will be the responsible party for compliance with the CEC conditions of certification (COCs) and applicable laws, ordinances, regulations, and standards (LORS) for the Henrietta BESS Project.

The purpose of the CEC's review process is to assess whether the project changes proposed in the petition would have a significant impact on the environment or cause the project to not comply with applicable laws, ordinances, regulations, and standards (Cal. Code Regs., tit. 20, § 1769).

NECESSITY FOR THE PROPOSED CHANGE(S)

As stated in the petition, the primary purpose and need for this amendment is to support California's current need for additional electrical energy storage available for dispatch during peak load demand time periods in the summer and to advance the State's and the California Public Utility Commission's policy of 60 percent renewable power by 2030 and 100 percent by 2045 (Senate Bill 100).

CEC STAFF REVIEW AND CONCLUSION

California Code of Regulations, title 20, section 1769 requires a project owner to petition the CEC for the approval of any change the project owner proposes to the project, design, operation, or performance requirements of a certified facility.

Consistent with California Code of Regulations, title 20, section 1769, the CEC staff has reviewed the petition for potential environmental effects and consistency with applicable LORS. Based on staff's analysis, contained below, staff concludes that the proposed changes to the HPP would not have a significant effect on the environment, or cause the project to fail to comply with any applicable LORS, with the implementation of existing COCs as adopted in the Decision or previous amendments to that decision, and adoption of new or modified conditions of certification in the areas of Biological Resources, Transmission System Engineering, and Worker Safety and Fire Protection.

ENVIRONMENTAL SETTING

The existing HPP facilities occupy 7-fenced acres within the 20-acre HPP property. The planned Henrietta BESS facilities would be located on an approximately 3.1-acre area east of the existing HPP in the northeast portion of the overall 20-acre HPP property, and to the north of an existing 230-kilovolt transmission line right of way. The approximately 3.1-acre site, which would include battery storage system enclosures and switchyard, has been previously disturbed. The past disturbance has been associated with historical agricultural use, use as temporary construction laydown during development of the HPP in the early 2000s, and annual maintenance to control vegetation. The proposed Henrietta BESS Project site has not been used for agricultural production since at least 2016. The Henrietta BESS Project would also include use of approximately 1.5 acres of the HPP site for temporary construction laydown and construction personnel parking, and approximately 0.8 acre for a new stormwater detention basin.

STAFF’S ASSESSMENT OF THE PROPOSED PETITION

Staff’s assessment of the proposed changes considered the potential impacts to the population within the disadvantaged community, including the environmental justice population within a six-mile radius of HPP.

Staff reviewed the petition for potential environmental effects and consistency with applicable LORS. Staff’s conclusions for all technical and environmental areas are summarized in **Executive Summary Table 1**.

Executive Summary Table 1
Summary of Conclusions for all Technical and Environmental Areas

Technical Areas Reviewed	CEQA				Conforms with applicable LORS
	Potentially Significant Impact	Less Than Significant Impact with Mitigation (with Revised or New COCs)	Less Than Significant Impact (with or without Existing COCs)	No Impact	
Air Quality			X		X
Biological Resources		X			X
Cultural Resources			X		X
Efficiency				X	
Facility Design					X
Geological and Paleontological Resources			X		X
Hazardous Materials Management			X		X
Land Use		X			X
Noise and Vibration			X		X
Public Health			X		X
Reliability					
Socioeconomics			X		
Soil and Water Resources			X		X
Traffic and Transportation			X		X
Transmission Line Safety and Nuisance			X		X
Transmission System Engineering		X			X
Visual Resources			X		X
Waste Management			X		X
Worker Safety and Fire Protection		X			X

Areas shown in gray are not subject to CEQA consideration or have no applicable LORS the project must comply with.

For the technical area(s) of Biological Resources, Transmission System Engineering, and Worker Safety Fire and Protection, staff has proposed new COCs, or modifications to existing COCs. With the addition of new Biological Resources COCs **BIO-8** through **BIO-9** and Worker Safety and Fire Protection COCs **WORKER SAFETY-6** through **WORKER SAFETY-8**, and revised Land Use COC **LAND-3**, and Transmission System Engineering COC **TSE-5**, the project would not have a significant effect on the environment and would continue to comply with all applicable LORS. The details of the proposed revisions and additional conditions of certification can be found under the Biological Resources, Land Use, Transmission System Engineering, and Worker Safety and Fire Protection sections in this Staff Analysis.

For the remaining environmental and technical areas, the CEC staff has determined that the modified project would continue to comply with applicable LORS, and the project change would not result in any significant adverse environmental impacts or require a change to any COCs.

The basis for each of the CEC staff's conclusions are provided below:

AIR QUALITY

Impacts to air quality and greenhouse gases are expected to continue to be less than significant with the implementation of the existing Air Quality COCs in the HPP Decision. The proposed addition of the BESS is expected to comply with all applicable LORS during construction and no new LORS related to air quality would be triggered during operation. Significant impacts to air quality are not expected from the short-term construction and installation of the BESS and its associated equipment. Therefore, there are no expected significant air quality impacts from the proposed amendment to any population, including any environmental justice population. In addition, there are no proposed changes to the Air Quality COCs.

Construction emissions of criteria air pollutants and greenhouse gases include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and truck delivery trips. Construction of the BESS is expected to occur over an approximately 8- to 9-month period, with two additional months of testing and commissioning. The BESS would be located on 3.01 acres of flat land that will undergo grading, excavation, and re-compaction to support concrete foundations and achieve site stormwater control. The closest sensitive receptor is a residence located approximately 6,000 feet northeast of the project site.

Construction emission estimates are provided in Appendix C of the Petition to Amend. The emission estimates are below the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Air Quality Thresholds of Significance levels for construction emissions found in SJVAPCD's *Guidance for Assessing and Mitigating Air Quality Impacts* (2015). Therefore, the air quality impacts associated with construction emissions are expected to be less than significant.

Because the emission estimates are below relevant thresholds of significance and the nearest sensitive receptor is located approximately 6,000 feet from the project site, construction of the BESS would result in less than significant impacts to air quality.

Existing COC **AQ-C1** would reduce fugitive dust emissions during construction by requiring the project owner to prepare a Construction Fugitive Dust Mitigation Plan that will identify fugitive dust mitigation measures that will be employed during construction of the BESS.

To reduce emissions from equipment exhaust, the project owner has committed to using equipment with Tier 4 Final diesel engines for engines larger than 50 horsepower. The project owner is also required to comply with the diesel equipment mitigation measures outlined in existing COC **AQ-C2**, which requires the minimization of idling, use of ultra-low sulfur diesel fuel, and reporting of actual diesel equipment use.

Operational greenhouse gas emissions would result primarily from BESS cooling system refrigerant leakage and amortized periodic maintenance activities. Refrigerant leakage was estimated, conservatively assuming a 15 percent annual leakage rate, to result in the release 40 metric tons of CO_{2e} emissions. Greenhouse gas emissions associated with the 11-month construction/commissioning period were amortized over the 40-year lifetime of the project and calculated to result in 46 metric tons of annual CO_{2e} emissions.

The project's displacement of non-renewable electricity generating facilities during peak grid demand would result in the project having less than significant greenhouse gas-related impacts to the environment during operation.

BIOLOGICAL RESOURCES

Approximately 12 acres of disturbed annual grassland considered suitable habitat for San Joaquin kit fox would be lost. There is the potential for Swainson's hawk to nest within .5-mile of the project site and burrowing owl to use the adjacent surrounding area for forage and nesting. Staff recommends updating the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) COC **BIO-6** to include changes to avoidance and minimization measures for San Joaquin kit fox and burrowing owl since the licensing of the Henrietta Peaker project. Staff proposes a new COC **BIO-8** (Swainson's Hawk Impact, Avoidance, Minimization, and Mitigation Measures) which specifies pre-construction surveys and impact avoidance and minimization measures. Due to the loss of San Joaquin kit fox habitat staff also proposes a new COC **BIO-9** (Compensatory Habitat Mitigation for San Joaquin Kit Fox) that requires the purchase of 13 habitat conservation credits from the Kern Water Bank. Implementation of the existing conditions of certification and staff's newly proposed COCs **BIO-8** and **BIO-9** would reduce potential impacts to less than significant.

Please see the Biological Resources section of this document.

CULTURAL RESOURCES

At least three known cultural resources were located within the project site; however, all were evaluated as ineligible for listing in the California Register of Historical Resources. There are no other known cultural resources on the project site that could be impacted by the proposed project changes; however, new proposed ground disturbance could still unearth previously unknown buried cultural resources. If cultural resources are encountered during construction of the proposed project changes, implementation of COCs **CUL-1** through **CUL-6** in the Decision would mitigate any potentially significant impacts during construction and would ensure LORS conformance. The applicant recommends an additional condition for the treatment of unanticipated discoveries of human remains. The CEC staff, however, notes that sections 4.5 and 4.6 of the HPP Cultural Resources Monitoring and Mitigation Plan (prepared per COC **CUL-3**) already applies the same regulations outlined in the applicant's proposed condition of certification. Therefore, no changes to conditions of certification are required for this project change.

EFFICIENCY

This petition to amend would not impact the thermal efficiency of the power plant, because the BESS portion of the power plant would not use thermal energy to produce electricity.

FACILITY DESIGN

Installation of the BESS must be in accordance with the 2019 edition of the California Building Standards Code (CBSC), or to the 2022 edition of the CBSC if the initial engineering design drawings would be submitted to the CEC's delegate chief building official (DCBO) on January 1, 2023, or later. Implementation of the existing Facility Design COCs adopted in the Decision and construction compliance oversight by the DCBO would ensure this compliance.

GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

Construction of the proposed Henrietta BESS Project would require grading and excavation for site leveling, drainage control, and foundation construction at the BESS site and switchyard areas. Earthwork cut depth is estimated at approximately 2 to 3 feet for project improvements and up to 5 feet for the detention basin. According to the petition, the project will involve up to approximately 15,500 cubic yards of balanced cut and fill. The proposed BESS facility would consist primarily of modular battery storage system enclosures and inverters installed on concrete pad foundations or piles. In the event the final BESS foundation design includes driven piles versus concrete mat foundations, it is expected that 8 piles per enclosure would be required and installed to approximate depths of 15 feet below the ground surface. It is expected that percussion drivers would be used for pile installation. This installation process would not result in any soil cuttings or spoils.

The Henrietta BESS Project would include an approximately 690-foot-long overhead distribution line to connect the BESS switchyard to the existing HPP generator step-up transformers. The new overhead lines would be supported on 3 poles plus 2 dead-end structures. Foundations for the poles are assumed to be up to 4 feet in diameter and 15 feet deep per pole. Foundations for the dead-end structures are not noted but are expected to be similar in depth to the pole foundations.

Since the Henrietta BESS Project construction location and anticipated subsurface disturbance depths are expected to be similar to the HPP, native undisturbed soils are likely to be encountered. Compliance with applicable LORS along with adherence to the requirements of the existing paleontological resource COCs **PAL-1** through **PAL-6** would ensure that impacts related to geologic hazards and paleontological resources would be less than significant.

HAZARDOUS MATERIALS MANAGEMENT

The proposed BESS would use lithium-ion batteries. The extensive regulatory framework that applies to the shipment of hazardous materials on California highways and roads would ensure that the batteries would be delivered to the project site safely. The Hazardous Materials Business Plan would be updated to include the new BESS per COC **HAZ-4**. In addition, the batteries would be included on the list of hazardous materials contained at the site and reported in the annual compliance report per COC **HAZ-3**. Therefore, compliance with COCs **HAZ-3** and **HAZ-4** would ensure that any impacts related to hazardous materials management would be less than significant.

LAND USE

The Henrietta BESS Project is proposed for location on the Henrietta Peaker project site and would not divide an established community. The site is classified by the State Farmland Mapping and Monitoring Program as Vacant or Disturbed Land and therefore would not be a conversion of Farmland to non-agricultural use. With implementation of the existing conditions of certification for the Henrietta Peaker Project (the original project), the proposed amendment for the Henrietta BESS would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. For these reasons, Land Use impacts from the proposed Henrietta BESS would be less than significant. Staff proposes modifying existing COC **LAND-3** to eliminate its reference to an outdated code section number. This change does not alter the substance of the condition.

Please see the Land Use section of this document.

NOISE AND VIBRATION

Construction work associated with this petition would be temporary and would occur during the daytime hours of 7 a.m. to 7 p.m., Monday through Saturday. That is consistent with the local LORS. Any noise generated during these activities would result

in a less-than-significant impact with implementation of the existing Noise COCs in the Decision.

The project modifications, which include the addition of a 99.4 MW BESS, would not result in significant changes to the noise impacts during operations. The primary source of noise would be from the cooling system from the battery storage units and would be quieter than the existing noise sources on site. The batteries and inverters make very little noise and would be fully enclosed.

Furthermore, the project would continue to meet operational noise requirements established in the Decision.

Therefore, and since the nearest residential receptor is more than 3,000 feet away from the project site, the changes in this petition would create a less-than-significant impact due to construction and operational noise.

PUBLIC HEALTH

Toxic air contaminant (TAC) emissions from the project would be limited to diesel particulate matter (DPM) released during the construction phase, as normal operation of the BESS would release negligible TAC emissions. Staff analysis of a previous petition ([TN 53977](#)) to convert the facility's combustion turbines from simple cycle to combined cycle and construct new auxiliary equipment (e.g., diesel generators and boilers), found that DPM emissions related to project construction would have less than significant impacts on public health. Because the current project would have a shorter construction period (11 months as opposed to 15 months), would result in lower annual DPM emissions (0.4 tons per year as opposed to 0.75 tons per year), and the project owner is expected to comply with the diesel equipment mitigation measures listed in Air Quality COC **AQ-SC2**, the project is expected to have less than significant impacts on public health.

RELIABILITY

The project modifications would not adversely impact the reliability of the Henrietta Peaker Plant. The addition of the 99.4 MW BESS would increase grid reliability by serving the transmission grid it is connected to.

SOCIOECONOMICS

Construction of the Henrietta BESS at the existing HPP would require an average workforce of 30 to 35 workers and a peak workforce of 40 to 50 workers. Project construction would take approximately 8 to 9 months to complete with typical construction schedule of 7 am to 7 pm Monday through Saturday.

The Henrietta BESS Project would be operated remotely by existing personnel and no permanent onsite BESS staff would be required. Periodic inspections and maintenance activities would occur, requiring a maintenance workforce of approximately two workers one day a week. A chain-link fence would be installed for security. The BESS project facilities would also be protected by the existing security measures at the HPP.

There are no Socioeconomic COCs that would apply to proposed amendment. There would be less than significant workforce related impacts on population, housing, and public services.

SOIL AND WATER RESOURCES

The past disturbance at the proposed Henrietta BESS site has been associated with historical agricultural use and the development of the HPP in the early 2000s. The Henrietta BESS project would also include an additional 1.5 acres of the HPP site to serve as a temporary construction laydown yard.

Construction of the proposed Henrietta BESS Project would require grading and excavation at both the BESS site and laydown area for site leveling and stormwater control. Excavation would also be necessary during foundation construction at the BESS site. Earthwork is estimated to disturb soil to maximum depths averaging from 2 - 3 feet and is expected to move approximately 15,000 cubic yards of soil. According to the PTA, excavation design would balance earthwork cut-and-fill. The Henrietta BESS Project also includes construction of a 0.77-acre stormwater detention basin excavated to a maximum depth of 5 feet.

Water usage is anticipated up to 930,000 gallons, or 2.85-acre feet (AF) during the 9 months of construction. Water would be provided by the current State Water Project allocations to the HPP facility.

According to the petition, the project would comply with the relevant existing COCs stipulated in the Decision. It should be noted that COC **WATER QUALITY-2** is identified as applicable under Section 5.12.5 *Conditions of Certification* of the petition, but is mentioned as not applicable in Section 5.12.2.3 *Wastewater and Sanitary Wastes*. Since **WATER QUALITY-2** consists of measures to control stormwater during construction, not wastewater and sanitary wastes, staff assumes the reference in Section 5.12.2.3 was in error and this COC still applies.

The Henrietta BESS Project construction location and anticipated subsurface disturbance depths are similar to the HPP project. The project would conform to applicable LORS related to water quality and water resources. Potential significant impacts to water quality and water resources would be avoided through compliance with the applicable COCs stipulated in the Decision.

Therefore, with compliance with the existing LORS and COCs, the impacts of the Henrietta BESS project to water quality and water resources would be less than significant.

TRAFFIC AND TRANSPORTATION

Vehicle trips generated by the installation of the new BESS and associated transmission equipment would generate a maximum of 65 round trips per day during the construction period. A mobile crane would be required for placement of battery containers on a new concrete pad foundation or support piles. Construction worker parking and laydown area would be located on a 1.5-acre area within the HPP property. In addition, a 1,300-foot section of the existing perimeter road would be replaced to provide stable access to the Henrietta BESS Project site and laydown area. The road repair work would be conducted within the HPP site to improve an existing private road. Lastly, a vehicle-miles travelled (VMT) screening analysis was performed by the applicant and is consistent with the Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA. The VMT screening analysis concluded the project would not require a detailed VMT analysis because it would generate fewer than 110 trips per day during the temporary construction phase and operation of the BESS and transmission infrastructure would generate an additional two operational trips per week for weekly maintenance activities. Thus, the addition of the BESS would generate a negligible number of trips and is expected to have a less-than-significant VMT transportation impact. The temporary construction and testing activities are estimated to take approximately 11-months to complete. Operations and maintenance of the HPP would remain unchanged.

Installation and operation of the proposed BESS and associated transmission equipment would comply with COCs **TRANS-1** "Overweight and Oversized Transportation Permits", **TRANS-2** "Onsite Parking", **TRANS-3** "Hazardous Material Transportation Permits", **TRANS-4** "Encroachment Permits", **TRANS-5** "Designated Truck Routes", **TRANS-6** "Roadway Repairs" and **TRANS-7** "Traffic Control Plan" as applicable, including scheduling deliveries of heavy equipment during off-peak hours and obtaining heavy haul permits from the applicable jurisdictions, as required.

The project would not conflict with local plans or ordinances addressing circulation; cause a significant increase in vehicle miles travelled in the area; and would not result in a substantial increase in hazards or inadequate emergency access. Therefore, potential transportation impacts would be less than significant.

TRANSMISSION LINE SAFETY AND NUISANCE

The proposed Henrietta BESS Project will include an onsite 13.8 kilovolt (kV) switchyard that will connect to the low side (13.8 kV) of the existing nominal 13.8 kV/73 kV GSU. This connection will be made using a 690-foot-long overhead and onsite 13.8 kV cable. No upgrades to the offsite existing transmission line are needed. Therefore, the proposed installation of the BESS will not result in significant transmission line safety and nuisance impacts.

TRANSMISSION SYSTEM ENGINEERING

The CEC staff concludes that the proposed battery energy storage system, assuming compliance with existing TSE COCs and the revised COC **TSE-5** proposed below, would continue to comply with applicable LORs. Proposed COC **TSE-5** ensures the DCBO and the CEC have a complete set of permits for the interconnection of the battery storage system by requiring the submittal of the application to the California ISO for a Material Modification Assessment and the approval of that application before energization of the batteries. The proposed BESS would not cause additional downstream transmission impacts other than those identified in the approved HPP.

Please see the Transmission System Engineering section of this document.

VISUAL RESOURCES

The project modification proposes installation of 98 modular 8-foot-wide by 23-foot-long by 9.5-foot-tall battery enclosures, 49 8-foot-wide by 20-foot-long by 9.5-foot-tall inverter enclosures, and a 690-foot long 13.8 kV overhead line interconnection on the HPP site.

The project is located on relatively flat land in a rural agriculture area developed in large-acreage solar farms that include battery storage units.

There is no scenic vista or scenic resource designated or identified in the county General Plan in the vicinity.

The project is in a non-urbanized area according with Public Resources Code section 21071. An object of aesthetic significance is not on the site or in the vicinity. In accordance with section 21071, the project would not conflict with applicable regulations governing scenic quality (e.g., general plan, zoning) per the Decision.

The Decision states, "The existing visual setting is already degraded by Henrietta Substation and a variety of different transmission towers, poles and lines. The addition of the power plant project in this setting merely substitutes boxy and cylindrical structures with some greater visual mass as the first viewable feature on 25th Avenue." The project would be visually concordant with the existing character of the site and surrounding area. The project would not substantially degrade the existing visual character or quality of public views of the site and its surrounding.

The project includes new outdoor lighting. Light fixtures are to be shielded and directed onsite. New lighting would not create a new source of substantial light, glare, or reflectance that would adversely affect day or nighttime views in the area with the effective implementation of COCs **VIS-2** and **VIS-3**.

The project modifications would have a less than significant effect with the adopted COCs for visual resources.

WASTE MANAGEMENT

The Henrietta BESS Project would be expected to generate small quantities of waste during construction. Any construction waste generated would either be recycled or disposed of at a Class III landfill. No contaminated soil is expected to be encountered during site preparation/excavation activities; however, if contaminated soil is encountered it would be tested and, if appropriate, disposed of at a Class I landfill. If spent or degraded batteries need to be replaced during the operational phase or during decommissioning, the batteries would be handled as universal waste and would be recycled or disposed of in an approved manner in accordance with applicable LORS at the time of removal. No new or additional waste streams would be generated. Therefore, compliance with the existing LORS and COCs would ensure the BESS project's waste management impacts would be less than significant.

WORKER SAFETY AND FIRE PROTECTION

Staff has proposed the following new COCs **WORKER SAFETY-6, WORKER SAFETY-7, and WORKER SAFETY-8**. These COCs would ensure adequate protection to on-site workers and mitigate the fire risks posed to first responders and the offsite public. Staff concludes that with the adoption of the new COCs and continued compliance with the existing LORS and COCs would ensure the BESS project worker safety and fire protection impacts would be less than significant.

Please see the Worker Safety and Fire Protection section of this document.

ENVIRONMENTAL JUSTICE

CALENVIROSCREEN

The CEC staff reviewed CalEnviroScreen 4.0 data to determine whether the United States census tract where the Henrietta Peaker Project is located (6031001601) is identified as a disadvantaged community. This science-based mapping tool is used by the California Environmental Protection Agency (CalEPA) to identify disadvantaged communities based on geographic, socioeconomic, public health, and environmental hazard criteria pursuant to Health and Safety Code section 39711 as enacted by Senate Bill 535 (De León, Chapter 830, Statutes of 2012). The CalEnviroScreen 4.0 overall percentile score for this census tract is 91.62 and, thus, is identified as a disadvantaged community¹.

¹ The four categories of geographic areas identified by CalEPA as disadvantaged are: 1) Census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0, 2) Census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps, but receiving the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores, 3) Census tracts identified in the 2017 DAC designation, regardless of their scores in CalEnviroScreen 4.0, and 4) Lands under the control of federally recognized Tribes. Source: CalEPA Final Designation of Disadvantaged Communities: May 2022 <https://calepa.ca.gov/envjustice/ghginvest/>

ENVIROMENTAL JUSTICE

Environmental Justice Figure 1 shows 2020 census blocks in the six-mile radius of the Henrietta Peaker Project with a minority population greater than or equal to 50 percent. The population in these census blocks represents an environmental justice (EJ) population based on race and ethnicity as defined in the United States Environmental Protection Agency's *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*. Staff conservatively obtains demographic data within a six-mile radius around a project site based on the parameters for dispersion modeling used in staff's air quality analysis. Air quality impacts are generally the type of project impacts that extend the furthest from a project site. Beyond a six-mile radius, air emissions have either settled out of the air column or mixed with surrounding air to the extent the potential impacts are less than significant. The area of potential impacts would not extend this far from the project site for most other technical areas included in staff's EJ analysis.

Based on California Department of Education data in the **Environmental Justice Table 1**, staff concluded that the percentage of those living in the Lemoore Union Elementary School District (in a six-mile radius of the project site) and enrolled in the free or reduced-price meal program is larger than those in the reference geography. Thus, it is considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

Environmental Justice – Figure 2 shows where the boundaries of the school district are in relation to the six-mile radius around the Henrietta Peaker Project site.

Environmental Justice – Table 1
Low Income Data within the Project Area

SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced-Price Meals	
Central Union Elementary	1,753	899	51.3%
Lemoore Union Elementary	3,225	2,352	72.9%
REFERENCE GEOGRAPHY			
Kings County	29,525	20,919	70.9%
Source: CDE 2022. California Department of Education, DataQuest, Free or Reduced-Price Meals, District level data for the year 2021-2022, http://dq.cde.ca.gov/dataquest/ .			

The following technical areas (if affected) consider impacts to EJ populations: Air Quality, Cultural Resources (indigenous people), Hazardous Materials Management, Land Use, Noise and Vibration, Public Health, Socioeconomics, Soil and Water resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, Waste Management, and Worker Safety and Fire Protection.

Figure 1

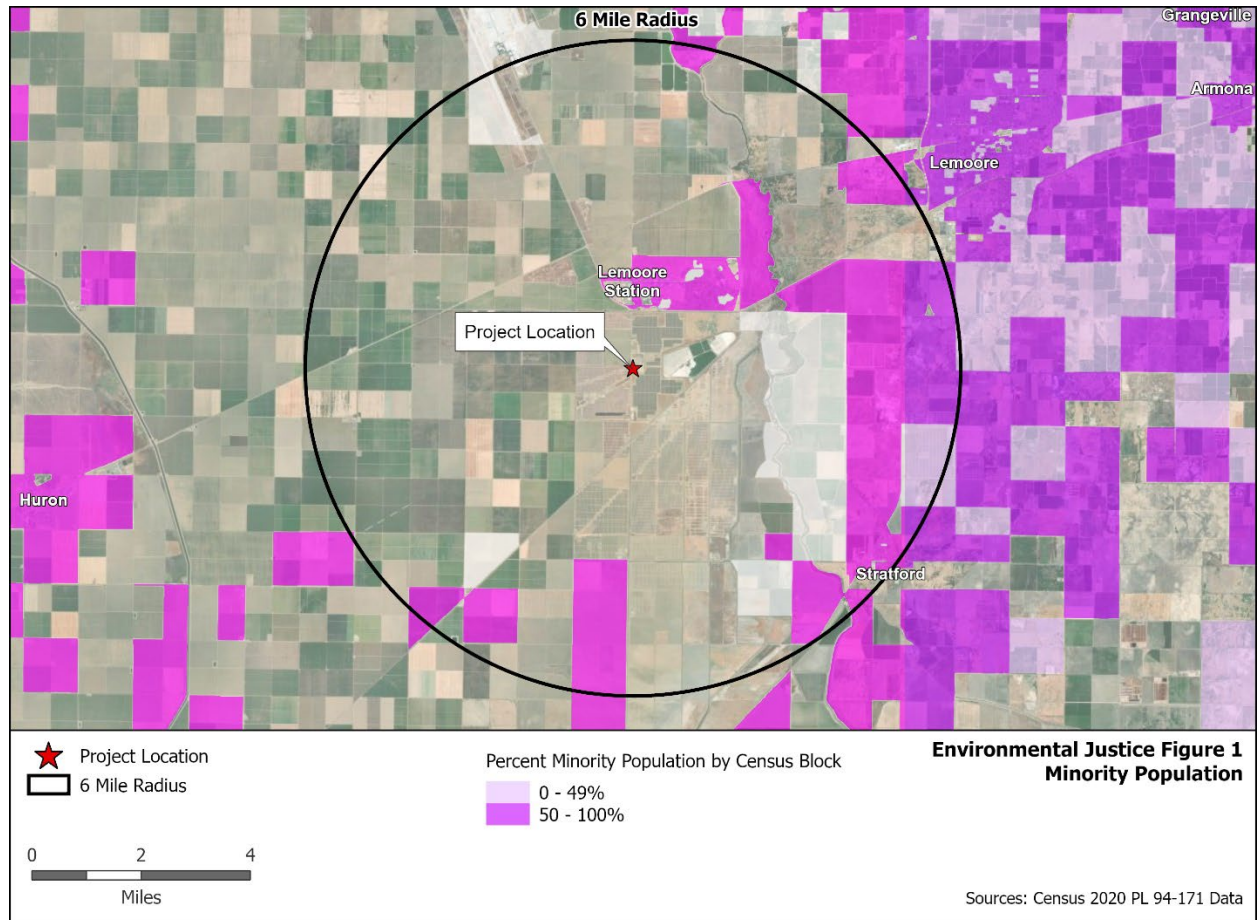
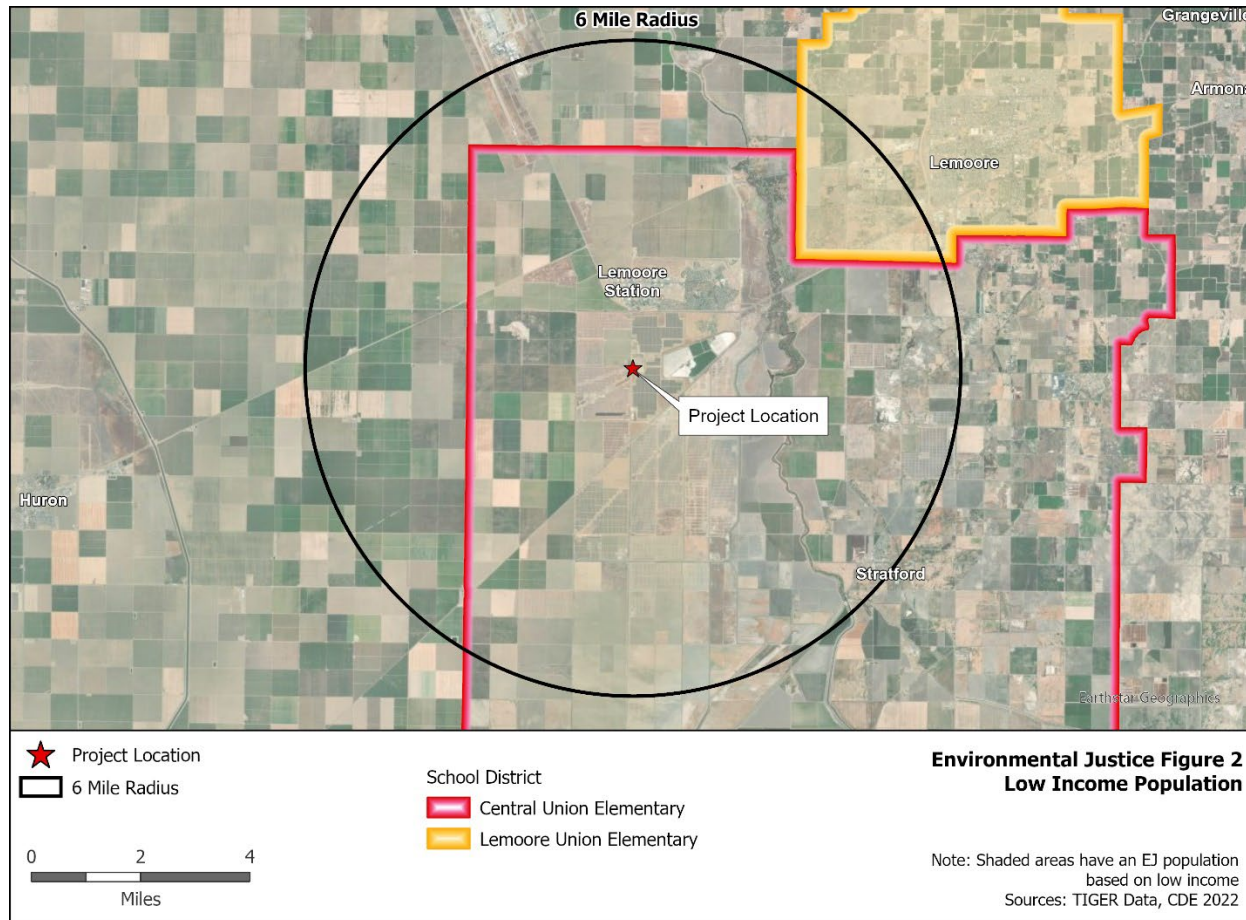


Figure 2



Environmental Justice Conclusions

All topic areas that consider impacts to EJ populations would be affected by this petition. Except for Worker Safety and Fire Protection, staff concludes that impacts would be less than significant or less than significant with implementation of existing COCs, and thus would be less than significant on the EJ population represented in **Environmental Justice Figure 1, Figure 2, and Table 1**. In the Worker Safety and Fire Protection analysis, staff proposes new COCs **WORKER SAFETY-6, WORKER SAFETY-7, and WORKER SAFETY-8** to mitigate potentially significant impacts on the environment. The CEC staff has determined that by adopting the proposed new conditions of certification, the proposed project changes would not cause significant impacts for any population in the project's six-mile radius, including the EJ population. Impacts to the EJ population are less than significant.

CEC STAFF RECOMMENDATIONS AND CONCLUSIONS

The CEC staff has reviewed the petition pursuant to California Code of Regulations, title 20, section 1769. Consistent with subdivision (a)(4), staff recommends the Commission

approve the petition and adopt staff's proposed new and modified conditions of certification.

Consistent with California Code of Regulations, title 20, section 1769, staff has reviewed the petition for potential environmental effects and consistency with applicable LORS. Staff concludes that the proposed changes to the HPP would not have a significant effect on the environment or cause the project to fail to comply with any applicable LORS, with the implementation of COCs as adopted in the Decision or previous amendments to that decision, and adoption of new or modified COCs in the areas of Biological Resources, Transmission System Engineering, and Worker Safety and Fire Protection. Staff also concludes the findings specified in California Code of Regulations, title 20, section 1748(b) do not apply to the proposed changes.

Based on the additional biological and worker safety and fire protection mitigation COCs, staff is supplementing the existing staff assessment, consistent with Public Resources Code section 21166 and California Code of Regulations, title 14, section 15163.

HENRIETTA PEAKER PROJECT (01-AFC-18C)

Petition to Amend Commission Decision

BIOLOGICAL RESOURCES

Andrea Stroud

INTRODUCTION

The CEC staff examined the Henrietta BESS Project post-certification petition ([TN 245663](#)) in relation to the technical area of Biological Resources. The purpose of this analysis is to determine whether the construction and operation of the proposed project would avoid significant impacts on biological resources and would be in compliance with applicable LORS.

This analysis is based on information provided in the HPP Application for Certification (01-AFC-18); the HPP post-certification petition to add battery energy storage; and discussions with the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS).

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

There are no new or changed biological resource LORS that would be applicable to the amended project as proposed.

SETTING

The project owner submitted a biological resources technical report as part of the post-certification petition. A reconnaissance level survey assessed the habitat suitability for potential special status species, to map existing vegetation communities and land cover types, to map any sensitive biological resources at the proposed Project site, the presence of potential jurisdictional waters and/or wetlands, any wildlife connectivity/movement features, and to record all observations of plant and wildlife species within the study area.

Rincon Biologist Adam Card conducted a survey of the study area on April 4, 2022. The study area consists of the entire HPP site plus a 300-foot buffer. According to the PTA the HPP site is approximately 20-acres with the proposed project site comprising approximately 12 acres. This is based on the acreages provided in the technical report for the land cover types occurring on the proposed Project site with the approximate acreage of 12.02 acres. The proposed project will contain the BESS, BESS switchyard, 13.8 kilovolt (kV) electrical interconnection from BESS to HPP, stormwater basin, construction laydown/parking area, and an access road.

The proposed Henrietta BESS Project is located on previously disturbed land adjacent and to the east of HPP. The proposed project site has been graded and disked from previous agricultural use and ongoing vegetation clearing for fire maintenance. To the north is a Pacific Gas& Electric (PG&E) Henrietta Substation. There is agricultural land and utility scale solar fields to the east and south. Twenty-fifth avenue runs north/south on the west side of the survey area and beyond all this is solar fields and

agricultural land. An overhead transmission line tower occurs on the eastern portion of the proposed project site.

Vegetation/Land Cover Types

Two land cover types, barren and disturbed annual grassland, occur on the proposed project site. The land cover type classification is based on habitat type classifications included in the California Wildlife Habitat Relationships System (2022).

Barren

Barren land cover type consists of bare ground. This area is heavily disturbed due to vehicle traffic and ongoing maintenance activities including grading, mowing, and discing. Barren land occurs on the eastern portion of the proposed project site and includes an unpaved access road that leads from the eastern portion of the proposed project site to Avenal Cutoff Road. Barren land cover 8.23 acres.

Disturbed Annual Grasslands

The disturbed annual grasslands land cover type consists of native and non-native species. The main species are wall barley (*Hordeum murinum*), which contributes 65 percent relative cover, and ripgut brome (*Bromus diandrus*) contributing 5 percent of the relative cover. Disturbed grasslands occur along the southern and eastern perimeters of the study area. Other plant species that occur in this area are common fiddleneck (*Amsinckia intermedia*), big salt brush (*Atriplex lentiformis*), redstem filaree (*Erodium cicutarium*), blue gum (*Eucalyptus globulus*), Russian thistle (*Kali tragus*), prickly lettuce (*Lactuca serriola*), dwarf mallow (*Malva neglecta*), kikuyu grass (*Pennisetum clandestinum*), and London rocket (*Sisymbrium irio*). Disturbed annual grasslands cover 3.79 acres.

Common Wildlife Species

Wildlife species observed during the reconnaissance survey include western fence lizard (*Sceloporus occidentalis*), killdeer (*Charadrius vociferus*), American crow (*Corvus brachyrhynchos*), American raven (*Corvus corax*), Brewer's blackbird (*Lanius ludovicianus*), Eriasian-collard dove (*Streptopelia decaocto*), and mourning dove (*Zenaida macroura*). The study area contains minimal California ground squirrel (*Otospermophilus beecheyi*) burrows. All the burrows observed were either less than 3-inches in diameter or were completely closed a few inches from the entrance of the burrow.

SPECIAL-STATUS SPECIES

The CEC staff conducted a 9-quad topographic database record search of the California Natural Diversity Database (CNDDB) (CDFW 2022). The search found three special status plant species and 17 special status wildlife species known to occur within 9 miles of the project site. Based on the existing land cover types, current disturbance onsite, and communications with USFWS and CDFW, there is potential for four species to

occur in the proposed project area: burrowing owl (*Athene cunicularia*), species of special concern; Swainson's hawk (*Buteo swainsoni*), state listed threatened; Tipton's kangaroo rat (*Dipodomys nitratoide nitratoide*), federal and state listed endangered; and San Joaquin kit fox (*Masticophis flagellum ruddocki*), federally listed as endangered and state listed as threatened.

Special-Status Plant Species

The three special status plant species that occur within 9-miles of the BESS site are California alkali grass (*Puccinellia simplex*), California jewelflower (*Caulanthus californicus*), and San Joaquin woollythreads (*Monolopia congdonii*). These species occur on alkali soils in chenopod scrub and valley and foothill grasslands. They would not occur on or adjacent to the proposed project site due to the high level of disturbance from grading and disking, ongoing vegetation clearing, and lack of alkaline soils.

Special-Status Wildlife Species

Special status wildlife species were not observed in or adjacent to the project area during the biological survey (April 4, 2022) ([TN 245663](#)). CDFW ([TN 245988](#)), requested pre-construction surveys for Swainson's hawk (SWHA) and burrowing owl (BUOW), surveys for Tipton's kangaroo rat (TKR), which includes trapping, and mitigation for San Joaquin kit fox (SJKF), since this species is known to occur in the area and was mitigated during the original licensing of the HPP project.

Swainson's Hawk

Protocol surveys were not conducted for SWHA and the CNDDDB shows occurrences within 5 miles of the proposed project site. There is no foraging habitat or suitable nest trees within or near the proposed project site for SWHA; however, there is a slight potential for them to nest on lattice transmission towers that occur near the proposed project.

Burrowing Owl

No protocol surveys were conducted for BUOW. There were a few burrows observed during the reconnaissance survey. Although California ground squirrel burrows were observed, all these burrows were either 3 inches wide or almost completely closed in, and therefore too small for a BUOW. Multiple CNDDDB occurrences occur in the vicinity of the proposed project site. The closest known BUOW occurrence is approximately 1.3 miles.

Tipton's Kangaroo Rat

Surveys were conducted for Tipton's kangaroo rat and followed *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats* (USFWS 2013). Surveys were conducted from October 5, 2022, through October 9, 2022. The results of the surveys were negative.

San Joaquin Kit Fox

The proposed project site is located within the southern extent of the San Joaquin kit fox range. Protocol level surveys to determine absence of this species were not conducted. However, since San Joaquin kit fox were known to occur during the original licensing of the HPP and suitable habitat exists on and around the project site, staff is assuming presence.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

DIRECT AND INDIRECT IMPACTS AND MITIGATION

The CEQA Guidelines define direct impacts as those impacts that result from the project and occur at the same time and place as project activities. Indirect impacts are caused by the project but can occur later in time or farther removed in distance and are still reasonably foreseeable and related to the operation of the project. Direct or indirect impacts on biological resources could be permanent or temporary in nature. All impacts that result in the irreversible removal of biological resources are considered permanent. Any impact considered to have reversible effects on biological resources can be viewed as temporary.

This subsection evaluates the potential direct and indirect impacts (both temporary and permanent) to biological resources from proposed BESS construction, operation, and maintenance. This section details staff's recommended COCs, as necessary, to reduce impacts to less-than-significant levels.

Construction Impacts to Special Status Wildlife

The permanent impacts of the proposed project would be located immediately east of the existing HPP. Development of the BESS, BESS switchyard, 13.8 kV electrical interconnection from BESS to HPP, stormwater basin, construction laydown/parking area, and an access road will result in permanent impacts to 12.02 acres. The project site is devoid of natural vegetation or natural communities and was previously impacted by the grading and disking from previous agricultural use and ongoing vegetation clearing for fire maintenance.

A Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) was developed and adopted for the construction of the HPP, as required in COC **BIO-6** in the Decision. Many biological resources that could be encountered during construction of the proposed project would be covered through avoidance and minimization guidance measures provided in the BRMIMP. The project owner should update the BRMIMP in order to consider any changes to avoidance and minimization measures for sensitive species. If a sensitive species is encountered, the BRMIMP implements avoidance strategies and mitigation measures for sensitive biological resources.

Swainson's Hawk

Construction activities within ½ mile of an active nest during the breeding season (February 15 - September 1) could cause nest abandonment or forced fledging (CDFG 1994) and result in take. While the possibility exists that SWHA may nest in one of the lattice transmissions towers, the probability is very low. However, staff's proposed COC **BIO-8** (Swainson's Hawk Impact Avoidance, Minimization, and Mitigation Measure) specifies pre-construction surveys and directs the project owner to follow impact avoidance and minimization measures. If a Swainson's hawk decides to nest during construction, then a biologist with experience in raptor behaviors would be required to monitor the nest and consult with the CEC and CDFW. Implementation of this condition would reduce impacts to this species below a level of significance.

Western Burrowing Owl

Western burrowing owls have the potential to occur near the proposed project site. No burrowing owls were observed during the reconnaissance survey and no burrows were found within 300 feet of the project site. There is potential for burrowing owls to occur in the project vicinity. Indirect impacts to burrowing owls during construction and operation can include increased roadkill hazards.

The CEC staff has proposed COC **BIO-6** BRMIMP, which requires a pre-construction site assessment to determine if there is owl habitat near the proposed project site. If habitat exists, then pre-construction surveys would follow. **BIO-6** recommends avoidance and minimization measures to protect owls that may nest near the proposed project site. Implementation of this condition would minimize impacts to this species below a level of significance.

San Joaquin Kit Fox

While no San Joaquin kit fox, natal dens, or burrows were observed on or within 300 feet of the proposed project site during reconnaissance surveys, the proposed project is within this species' range. Therefore, the construction of the proposed project would result in the loss of suitable (low quality) habitat for this species. If present on or near the proposed project site during construction, San Joaquin kit fox could be killed by heavy equipment or ground disturbance. Construction activities could also result in disturbance or harassment of individuals. These impacts to a federally- and state-listed species would be significant.

Staff has proposed an update to the BRMIMP to include current measures to protect San Joaquin kit fox. COC **BIO-6** BRMIMP also requires that a qualified biologist perform a pre-construction survey for San Joaquin kit fox dens within 200 feet of the project site. COC **BIO-6** also includes impact and avoidance measures if San Joaquin kit fox or their dens are found, such as establishing exclusion zones, establishing speed limits, providing for escape routes, and other measures to avoid harassment or other disturbance. Updating the BRMIMP and the Implementation of COC **BIO-6** would minimize impacts on San Joaquin kit fox from construction and operation of the proposed project.

The proposed project would permanently remove approximately 12.02 acres of foraging habitat for San Joaquin kit foxes and would fragment and reduce the value of foraging and denning habitat near the proposed project site. The project is within the southern part of the San Joaquin kit fox range, which is threatened by habitat loss and fragmentation. Implementation of staff's proposed COC **BIO-9** (Compensatory Habitat Mitigation for San Joaquin Kit Fox) would minimize impacts due to loss of habitat and potential take of the species.

The habitat compensation ratios for loss of San Joaquin kit fox habitat required by CDFW that apply to the proposed project area are 1:1 for permanent impacts (TN 245988). The mitigation of impacts to low quality San Joaquin kit fox habitat for the project would require the purchase of conservation credits through the Kern Water Bank. That is 12.02 acres of permanent habitat loss x 1 compensation ratio = 12.02 acres. Since conservation credits are only provided in whole acres, 13 conservation credits would be required. Staff's proposed COC **BIO-9** (Compensatory Habit Mitigation for San Joaquin Kit Fox) requires 13 acres of habitat conservation credits to be acquired from the Kern Water Bank. The CEC staff confirmed that the Kern Water Bank has plenty of acres of available conservation credits, which indicates that purchase of conservation credits to compensate for the habitat loss impacts for San Joaquin kit fox from the proposed project is possible.

Implementation of the CEC staff's COCs **BIO-6** and **BIO-9** would reduce impacts to the San Joaquin kit fox to less than significant.

CUMULATIVE IMPACTS

Under the CEQA Guidelines, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts" (Cal Code Regs., tit.14, §15130(a)(1)). Cumulative impacts must be addressed if the incremental effect of a project, combined with the effects of other projects is "cumulatively considerable" (Cal Code Regs. tit. 14, §15130(a)). Such incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (Cal Code Regs. tit. 14, §15164(b)(1)). Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis.

The CEC staff considered development within the vicinity of the proposed project, specifically those that resulted in the loss of agricultural lands. There are several solar photovoltaic (PV) projects surrounding the HPP and proposed project site that have contributed to the loss of agricultural lands and hence San Joaquin kit fox habitat. The development of the proposed project would further contribute to the significant cumulative impacts from loss of habitat for San Joaquin kit fox. The BESS Project, when considered with past, present, and reasonably foreseeable future projects, would contribute to the cumulative loss and degradation of habitats essential to the persistence and recovery of San Joaquin kit fox.

The CEC staff has concluded that the proposed project's contribution to cumulative impacts to special-status species can be mitigated below a cumulatively considerable level by implementation of the COCs **BIO-6**, **BIO-8**, and **BIO-9**.

CONCLUSIONS AND RECOMMENDATIONS

The project changes as proposed in the post-certification petition, by adding battery storage, would conform to applicable LORS and would not have a significant effect on sensitive species or their habitat near the project provided that the BRMIMP (**BIO-6**) is updated and implemented, and new Biological Resources COCs **BIO-8**, and **BIO-9** are adopted and implemented. The project changes, as proposed, have potential for impacts to biological resources that can be mitigated to a less than significant level through purchase of 13 conservation credits of San Joaquin kit fox habitat compensation lands in addition to the 10 acres required in the Decision for the HPP in 2002.

PROPOSED MODIFICATIONS TO CONDITION OF CERTIFICATION

SWAINSON'S HAWK IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-8 Pre-construction Swainson's hawk surveys shall be conducted within 30 days of February 15 through September 1, if construction activities occur during this time. The Designated Biologist shall perform pre-construction surveys in accordance with the following guidelines:

- 1) Surveys shall be conducted according to the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000).**
- 2) Project site mobilization and construction activities shall begin, after a pre-construction Swainson's hawk nesting survey within 1/2 mile, in accordance with the following:**
 - a) If the pre-construction survey determines there are no nesting Swainson's hawk pair and the Compliance Project Manager (CPM) and California Department of Fish and Wildlife (CDFW) concur, site mobilization and construction activities are allowed to commence.**
 - b) If a Swainson's hawk pair is nesting within 1/2 mile, site mobilization and construction activities must wait to begin until the non-nesting season of September 2 through February 14.**

- 3) If construction begins during the Swainson's hawk non-nesting season (September 2 through February 14) and an active nest is found within 1/2 mile of the project disturbance area during the nesting season (February 15 – September 1), then a qualified biologist experienced with raptor behavior shall be retained by the project owner to monitor the nest and shall along with the project owner consult with CPM and CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed to proceed if raptors are not exhibiting agitated behavior such as defensive flights at intruders, getting up from a brooding position, or flying off the nest. The Designated Biologist approved for raptor monitoring shall be on-site daily (from February 15 – September 1) while construction related activities are taking place. In consultation with the CPM and CDFW and depending on the behavior of the raptors, over time it may be determined that the on-site biologist may no longer be necessary due to the raptors' acclimation to construction related activities.

Verification: The project owner shall submit a report to the CPM and CDFW no less than 10 days prior to the start of any ground disturbing activities or construction equipment staging, that describes when Swainson's hawk surveys were completed, identification and qualifications of the biologist conducting the surveys, observations, and, if required, updates to the BRMIMP based upon findings. If project-related work is required within a Swainson's hawk nest buffer, the project owner shall submit the name and qualification of the proposed biologist to the CPM for approval no less than 30 days prior to disturbance within 1/2 mile of an active nest. The designated biologist shall contact the CPM and CDFW within 2 days of a work stoppage due to disturbance to the nesting Swainson's hawks. No less than 30 days after completion of construction within 1/2 mile of an active nest, the project owner shall provide to the CPM a written construction termination report identifying the results of monitoring during disturbance within the nest buffer.

COMPENSATORY HABITAT FOR SAN JOAQUIN KIT FOX

BIO-9 Prior to the start of any site mobilization or construction activities, the project owner shall acquire at least 13 acres of conservation credits from the Kern Water Bank in accordance with the Kern Water Bank Habitat Conservation Plan.

Verification: At least 30 days prior to the start of site mobilization activities, the project owner shall submit to the CPM documentation (letter, receipt, and a copy of the check) that it has secured at least 13 acres of mitigation

credits through the KWBHCP. Within 30 days following start of site mobilization, the project owner shall submit to the CPM a revised BRMIMP that includes a summary of the KWBHCP's terms and conditions.

REFERENCES

- California Department of Fish and Wildlife (CDFW). 2022. California Natural Diversity Database Rarefind 5, BIOS 6. Accessed November 2, 2022.
- CDFW. 2022. Comments from Larry Bonner California Department of Fish and Wildlife. September 12, 2022. TN 245988.
- CDFW. 2022. Wildlife Habitats – California Wildlife Habitat Relationships System. Available from <https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats>.
- California Energy Commission (CEC). 2002. Decision for the GWF Power Systems Co., Inc., Henrietta Peaker Power Plant Application for Certification, Docket NO. 01-AFC-18, Kings County, published on March 5, 2002.
- Henrietta BESS LLC. 2022. Petition for Post-Certification Amendment MRP San Joaquin Energy LLC, Henrietta Peaker Project, Docket NO. 01-AFC-18, Kings County, August 2022. TN 245663.
- Swainson's Hawk Technical Advisory Committee. 2000. *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*. May 31, 2000.
- U.S. Fish and Wildlife Service (USFWS). 2013. *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats*. USFWS Sacramento Field Office. March 2013.

HENRIETTA PEAKER PROJECT (01-AFC-18C)
Request to Amend Final Commission Decision
LAND USE
Andrea Koch

INTRODUCTION

The applicant proposes the Henrietta BESS Project as an amendment to the existing operational Henrietta Peaker Project. The Henrietta BESS Project is proposed in Kings County at 16027 25th Avenue in Lemoore, CA on APN 024-190-070-000, an approximately 20-acre property. The facility would be located on an approximately 3.1-acre area at the northeastern portion of the project property. The existing HPP is located on the western portion of the project property.

ANALYSIS

Compliance with Kings County LORS

Kings County's zoning designation for the project parcel is Exclusive Agriculture (AX). According to Table 4-1 in Section 407 of the Kings County Development Code, to locate electrical energy storage facilities in the AX zone, approval of a Conditional Use Permit (CUP) by Kings County would normally be required if the CEC did not have licensing and permitting jurisdiction over the project. Because the CEC has jurisdiction over the project, the CEC must ensure that the project complies with LORS, including the County's required findings for approving a CUP. The project meets the County's required findings for a CUP, as detailed below.

Kings County's required findings for a CUP (Section 1707 of the Kings County Development Code):

- a. The proposed use is consistent with the General Plan.
Analysis: The 2035 Kings County General Plan (General Plan) land use designation for the project site is AX PF (Exclusive Agriculture, Public/Quasi Public). The Henrietta BESS is consistent with this land use designation, as the "Public/Quasi Public" land use designation includes power facilities. Also, Land Use Policy B7.1.3 in the General Plan states that power generation facilities (which are similar in nature to energy storage facilities) may be sited on agricultural lands with approval of a conditional use permit.
- b. The approval of the conditional use permit for the proposed use is in compliance with the requirements of the California Environmental Quality Act (CEQA).
Analysis: The existing HPP was approved through the CEC's certified regulatory program under CEQA. The proposed BESS is a modification of the original project also subject to the CEC's certified regulatory program under CEQA. The previous environmental analysis and conditions of certification (COCs) apply, in addition to this new analysis and any modified conditions of certification. The conditions

ensure that impacts of the proposed battery energy storage system (BESS) would be less than significant.

- c. There will be no potential significant negative effects upon environmental quality and natural resources that could not be eliminated or avoided through mitigation or monitoring, or there will not be potential significant negative effects upon environmental quality and natural resources that could not be mitigated to the extent feasible, and a Statement of Overriding Considerations is adopted explaining why the benefits of the project outweigh the impacts that cannot be mitigated to a less than significant level.

Analysis: CEC staff determined that the proposed Henrietta BESS would have less than significant impacts on environmental quality and natural resources. COCs for the original HPP as amended in this analysis, many of which ensure impacts are less than significant, would apply to the Henrietta BESS.

- d. The proposed conditional use complies with all applicable standards and provisions of this Development Code and the purposes of the district in which the site is located.

Analysis: The proposed Henrietta BESS appears to meet the development standards in the AX zone. COC **LAND-3** for the existing HPP, which would also apply to the Henrietta BESS, would ensure that the project meets the applicable development standards. (See more details at the end of this Land Use subsection.)

According to Table 4-1 in Section 407 of the Kings County Development Code, electrical energy storage facilities in the AX zone are allowed with approval of a CUP by Kings County, which would normally be required if the CEC did not have licensing and permitting jurisdiction over the project. Because the CEC has jurisdiction over the project, the Commission must ensure that the project complies with local LORS, including the County's required findings for approving a CUP. The project meets the County's required findings for a CUP, as discussed here.

Kings County requires electrical energy storage facilities to be located within one mile of an existing public utility substation. (See Section 407 of the Kings County Development Code.) The Henrietta BESS meets this requirement, with the PG&E Henrietta Substation located to the north of the project property.

- e. The design, location, size and operating characteristics of the proposed conditional use and the conditions under which it would be operated or maintained will not create significant noise, traffic, or other conditions or situations that may be objectionable or detrimental to the public health, safety, or welfare, or materially injurious to other permitted uses, properties, or improvements in the vicinity.

Analysis: CEC staff found that the BESS would not create significant noise, traffic, air quality, or hazardous materials impacts to the public or to other uses, properties, or improvements. Please see the following sections of this analysis for

more details: Air Quality, Hazardous Materials Management, Noise and Vibration, Public Health, Soil and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, Waste Management, and Worker Safety and Fire Protection.

- f. That no process, equipment or materials shall be used which, are found by the Planning Commission, to be substantially injurious to persons, property, crops, or livestock in the vicinity by reasons of odor, fumes, dust, smoke, cinders, dirt, refuse, water carried wastes, noise, vibration, illumination, glare or unsightliness or to involve any undue risk of fire or explosion.

Analysis: There would be no process, equipment, or materials used which would be injurious to persons, property, crops, or livestock. Please see the following sections of this analysis for more details: Air Quality, Hazardous Materials Management, Noise and Vibration, Public Health, Soil and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, Waste Management, and Worker Safety and Fire Protection.

- g. That no waste material shall be discharged into a public or private sewage disposal system except in compliance with the regulations of the owner of the system.

Analysis: No waste material would be discharged into a public or private sewage disposal system. See the Waste Management section of this analysis for details.

- h. That all uses shall comply with the emission standards of the SJVAPCD.

Analysis: All uses would comply with the emission standards of the SJVAPCD. See the Air Quality section of this analysis for more details.

- i. The site plan includes all applicable information as described in Article 16, Section 1602.A.5.

Analysis: The submitted site plans contain the required elements described in this section of the Kings County Development Code.

Compliance with Existing Land Use Conditions of Certification

As for the CEC's requirements, the proposed Henrietta BESS Project must comply with the Land Use COCs (last amended February 6, 2020) for the existing HPP. These conditions and associated staff comments for the Henrietta BESS follow:

- **LAND-1:** Prior to the start of construction, the project owner shall submit an agricultural mitigation plan subject to the approval of the CPM. The ag mitigation plan shall include details as to how the on-site preservation of ag land on the subject property not converted for the power generation facility is to occur.

Verification: Thirty (30) days prior to site mobilization, the project owner shall provide the CPM with the finalized agricultural mitigation plan

Staff comments: The portion of the parcel unused for the existing HPP (on which the Henrietta BESS would be located) was required by **LAND-1** to be incorporated into

the agricultural mitigation plan. The agricultural mitigation plan for the Henrietta Peaker Project included a lease between the project owners and the Oliveiras family for continued farming of that 13-acre remainder of the property. However, as reported in the Petition to Amend for the Henrietta BESS, farming ceased on that portion of the property no later than 2016. Neither COC **LAND-1** nor the resulting approved agricultural mitigation plan mandated that the remainder of the parcel be preserved in perpetuity for agricultural use.

The State Farmland Mapping and Monitoring Program (FMMP) formerly classified the site as Farmland of Statewide Importance, but due to lack of irrigation since the 2015-2016 period, and due to surrounding land uses, the 2020 FMMP Maps designate the site as Vacant or Disturbed Land. (The applicant provided correspondence with Patrick Hennessy from the Department of Conservation regarding this change.) Therefore, the portion of the site on which the Henrietta BESS is proposed for location is no longer designated by the FMMP Maps as Farmland (CDC 2022).

Soil quality at the site is not ideal for farming. According to U.S. Department of Agriculture data, the soil map unit at the project site is 139, Lenthent Clay Loam, 0 to 1 percent slopes. The associated land capability classification (LCC) for this soil is 7s without irrigation (USDA 2022). An LCC of 7 indicates soil with severe limitations making it unsuitable for cultivation, limiting its use to mainly rangeland, forestland, or wildlife habitat. Subclass 's' indicates soils with problematic rooting zone issues, such as soils that are prone to drought, stony, or shallow (MapRight 2022).

According to U.S. Department of Agriculture data, the general irrigation potential of the project site is "very limited" due to the soil's excess sodium, low water-holding capacity, and excess salt (USDA 2022). However, if the site were to be irrigated, its LCC would be 3s. An LCC of 3 indicates soils with severe limitations that restrict plant choice and/or require special conservation practices. As discussed earlier, subclass 's' indicates soils with problematic rooting zone issues, such as soils that are prone to drought, stony, or shallow (MapRight 2022).

Due to the project site's poor-quality soil and FMMP designation of Vacant or Disturbed Land, in addition to the fact that **LAND-1** and the agricultural mitigation plan never required the site to be farmed in perpetuity, the BESS is not inconsistent with **LAND-1**.

- **LAND-2:** Prior to the start of commercial operation, the project owner shall provide to the CPM, a copy of their signed, notarized and recorded Notice, Disclosure and Acknowledgement of Agricultural Land Use Protection and Right to Farm Policies of the County of Kings, pursuant to Section 2 of Ordinance No, 546 (Right to Farm Ordinance) of the County of Kings.

Verification: Thirty (30) days prior to the start of commercial operation, the project owner shall provide to the CPM, a copy of their signed, notarized and

recorded Notice, Disclosure and Acknowledgement of Agricultural Land Use Protection and Right to Farm Policies for the County of Kings.

Staff comments: This is not required to be submitted, as it was submitted with the original HPP on the same parcel.

- **LAND-3:** Prior to the start of construction, the project owner shall provide to the CPM a site plan with dimensions showing the locations of the proposed buildings and structures in compliance with the minimum yard area requirements (setbacks) from the property line as stipulated in Section 406.D. Yard requirements of the Kings County Zoning Ordinance.

Verification: Thirty (30) days prior to the start of construction, the project owner shall provide to the CPM for approval, a site plan showing the HPP project in yard area compliance with Section 406.D. of the Kings County Zoning Ordinance.

Staff comments: In compliance with **LAND-3** for the original HPP, prior to the start of construction of the BESS, the project owner must submit this site plan to the CPM to confirm that the BESS will comply with the setback requirements for the Exclusive Agriculture zoning district. Also, note that the development standards are now found in Section 418 of the Development Code. Due to this change in the location of the development standards, staff proposes a modification to this condition (below) that would strike reference to the section of the Kings County Zoning Ordinance that contains the setback requirements.

With compliance with these COCs, the project modifications would have less than significant land use impacts and would comply with LORS.

CONCLUSIONS AND RECOMMENDATIONS

The Henrietta BESS Project is proposed for location on the Henrietta Peaker project site and would not divide an established community. The site is classified by the State Farmland Mapping and Monitoring Program as Vacant or Disturbed Land and therefore would not be a conversion of Farmland to non-agricultural use. With implementation of the existing conditions of certification for the HPP (the original project), the proposed amendment for the Henrietta BESS Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. For these reasons, Land Use impacts from the proposed Henrietta BESS would be less than significant. The CEC staff proposes modifying existing COC **LAND-3** to eliminate its reference to an outdated code section number. This change, shown below, does not alter the substance of the condition.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

- LAND-3:** Prior to the start of construction, the project owner shall provide to the CPM a site plan with dimensions showing the locations of the proposed buildings and structures in compliance with the minimum yard area

requirements (setbacks) from the property line as stipulated in ~~Section 406.D. Yard requirements of the Kings County Zoning Ordinance.~~

Verification: Thirty (30) days prior to the start of construction, the project owner shall provide to the CPM for approval, a site plan showing the HPP project in yard area compliance with ~~Section 406.D. of the Kings County Zoning Ordinance.~~

REFERENCES

- CDC 2022 – CA Department of Conservation. Farmland Mapping and Monitoring Program, Kings County. Accessed December 7, 2022. Available online at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Kings.aspx>
- MapRight 2022 – MapRight. Everything You Need to Know About Land Capability Classification. Accessed December 7, 2022. Available online at: <https://www.mapright.com/land-capability-classification/>
- USDA 2022 – U.S. Department of Agriculture, Natural Resources Conservation Service (USDA). Web Soil Survey. Custom Soil Resource Report for Kings County. Custom report created December 5, 2022. Available online at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx> and https://websoilsurvey.sc.egov.usda.gov/WssProduct/2bijfk0bt2uwbaiangp2amsy/GN_00000/20221205_17501605735_25_Soil_Report.pdf

HENRIETTA PEAKER PROJECT (01-AFC-18C)
Request to Amend Final Commission Decision
Transmission System Engineering
Laiping Ng and Mark Hesters

INTRODUCTION

The amendment proposes to install a 99.4-MW BESS within the existing HPP site. The Henrietta BESS Project would be interconnected to the PG&E transmission grid through the existing Henrietta Substation.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

The LORS from the original Commission decision still apply. No update is required.

ANALYSIS

The proposed 99.4 MW BESS, to be installed at the existing HPP site, would be connected to the low side of the existing HPP 13.8/73 kV transformers via approximately 690-foot-long 13.8 kV overhead lines. Three new poles and dead-end structures would be installed to support the overhead lines. Power would be delivered to the PG&E grid through the existing HPP gen-tie line.

An Energy Management System (EMS) controller would be installed and connected to the existing HPP control system to control the BESS and HPP output not to exceed 99.4 MW. In addition, a Post-Commercial Operation Date Modification Review was submitted to the California Independent System Operator (California ISO) and approval is anticipated by January 2023.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that the proposed battery energy storage system, assuming compliance with existing TSE COCs and the revised COC **TSE-5** proposed below, would continue to comply with applicable LORs. Proposed COC **TSE-5** ensures the DCBO and the CEC have a complete set of permits for the interconnection of the battery storage system by requiring the submittal of the application to the California ISO for a Material Modification Assessment and the approval of that application before energization of the batteries. The proposed BESS would not cause additional downstream transmission impacts other than those identified in the approved HPP.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

TSE-5 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to all applicable LORS, including the requirements listed below. The substitution of Compliance

Project Manager (CPM) and CBO approved “equivalent” equipment and equivalent substation configurations are acceptable. The project owner shall submit the required number of copies of the design drawings and calculations as determined by the CBO.

- a. The power plant switchyard and outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC), Title 8 of the California Code of Regulations (Title 8), Articles 35, 36 and 37 of the “High Voltage Electric Safety Orders”, National Electric Code (NEC), and related industry standards, **and the California ISO Interconnection Procedures.**
- b. Breakers and buses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
- c. Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner’s standards.
- d. Termination facilities shall comply with CPUC Rule 21 and PG&E applicable interconnection standards.
- e. The project conductors shall be sized to accommodate the full output from the HPP plant.
- f. The project owner shall provide an Executed Generator Special Facilities Agreement.
- g. **The project owner shall provide evidence of approval from the California ISO for the modification of existing interconnection or generation facilities.**

Verification: At least sixty (60) days prior to the start of construction of transmission facilities, the project owner shall submit to the CBO for approval:

- a. Design drawings, specifications and calculations conforming with CPUC General Order (GO) 95 or NESC, Title 8, Articles 35, 36 and 37 of the “High Voltage Electric Safety Orders”, NEC, CPUC Rule 21, applicable interconnection standards and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, underground cables, grounding systems and major switchyard equipment.
- b. For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on “worst case conditions” and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, “High Voltage Electric Safety Orders”,

NEC, CPUC Rule 21, applicable interconnection standards, and related industry standards.

- c. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements TSE-5 a) through g) above.
- d. Generator Special Facilities Agreement shall be provided concurrently to the CPM and CBO. Substitution of equipment and substation configurations shall be identified and justified by the project owner for CBO and CPM approval.
- e. **Prior to the start of construction of any project modification requiring approval from the California ISO, provide the interconnection approval to the CPM. Interconnection approval for modification of existing facilities can be in the form of an approved Material Modification Assessment or written approval of the proposed changes to the project and the existing interconnection facilities from the interconnecting authority.** Within 15 days after cessation of construction the project owner shall provide a statement to the CPM from the registered engineer in responsible charge (signed and sealed) that the switchyard and transmission facilities conform to the above listed requirements.

REFERENCES

HPP 2022, Permit to Amend Henrietta BESS (TN#:245663). Docketed on August 23,2022.

HENRIETTA PEAKER PROJECT (01-AFC-18C)
Request to Amend Final Commission Decision
WORKER SAFETY AND FIRE PROTECTION
Brett Fooks

INTRODUCTION

Middle River Power San Joaquin Energy, LLC filed a post-certification petition on August 23, 2022, requesting approval to install a 99.4-MW BESS operated by Henrietta BESS, LLC to provide power to the grid on the HPP property (HPP 2022).

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

COMPLIANCE

Worker Safety and Fire Protection Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Local	
2019 Edition of the California Fire Code (24 CCR Part 9)	King County currently enforces the 2019 edition of the California Fire Code (CFC).

ANALYSIS

Worker safety and fire protection are regulated through LORS, at the federal, state, and local levels. Industrial workers at the facility operate equipment and handle hazardous materials and may face hazards that can result in accidents and serious injury. Protective measures are employed to eliminate or reduce these hazards or to minimize the risk through special training, protective equipment, and procedural controls.

The construction for the installation of the BESS would comply with worker safety and fire safety measures contained in health and safety plans prepared in accordance with existing COC **WORKER SAFETY-1** in the HPP Decision. Updates to the power plant's existing Operations and Maintenance Safety Program, Emergency Action Plan, and Hazardous Materials Management Plan would be required to include sections particular to the BESS in accordance with existing LORS.

HPP relies on the local fire protection services provided by the King County Fire Department (KCFD). The BESS installations like the one that would be installed at HPP, are still a new technology for local fire fighters and their designs and technologies vary from installation to installation. Therefore, staff proposes new COC **WORKER SAFETY-6**, under which the project owner would be required to submit the fire protection plans for the BESS to the KCFD for their review and comment before construction could begin.

The CEC staff's evaluation of the safety of lithium-ion batteries determined that large lithium-ion BESS installations pose potential hazards. Because they store large amounts of energy, one of the principal hazards associated with lithium-ion BESSs is fire, which

could occur if a charged battery cell was somehow damaged, for example by being opened, punctured, or crushed. A fire could also be caused if a battery cell is short-circuited, overheated, or experiences thermal runaway. After such an event, it may burn rapidly with flare-burning effect and may ignite other battery cells in proximity. The resulting fire would produce corrosive and/or toxic gases including hydrogen chloride, hydrogen fluoride, and carbon monoxide, similar to a fire involving a like-amount of plastics, requiring first responders to wear self-contained breathing apparatus to control the fire safely. Overheating batteries may also produce flammable gases that have, under certain circumstances, lead to an explosion within the BESS container. Due to the potential for fire and explosion, staff concludes that HPP's BESS would present a significant risk that should be mitigated.

The CEC staff has reviewed the current regulatory framework regarding fire and life safety as related to the proposed lithium-ion BESS. While the current regulatory framework is evolving to address the risks involved with lithium-ion BESS installations, there are several current safety standards for BESSs that have been developed by industry standards groups including Underwriters Laboratories (UL) and the National Fire Protection Association (NFPA). One of the newest, issued in 2019 and revised in September 2022, is NFPA 855: Standard for the Installation of Stationary Energy Storage Systems. Others include UL 9540-2020: Energy Storage Systems and Equipment which lists requirements for BESSs supporting the local-area electric power systems or the electrical utility power grid, and UL 9540A-2019: Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems which provides the standard test methodology for determining fire and explosion hazards presented by a given BESS design when undergoing an overheating failure, such as thermal-runaway. The current edition of the California Fire Code (CFC) also contains fire safety requirements for stationary lithium-ion battery energy storage systems. Issuance of these recent standards and codes provide evidence that the regulatory environment is quickly evolving to accommodate new lithium-ion BESS technology and designs as they emerge.

Confirmation of potential hazards posed by BESS installations has been provided through field experience. An explosion in a remote BESS enclosure occurred at the Arizona Public Service (APS) McMicken site in April 2019. There, four first responders were seriously injured upon opening the door to a BESS after a suspected internal fire had subsided. The failure report issued by APS indicated that the suspected fire was an extensive cascading thermal runaway event initiated by an internal failure within one battery cell of the BESS. The BESS's internal fire suppression system discharged a clean agent preventing the fire from spreading to surrounding battery racks. However, the compromised batteries emitted a mixture of combustible gases, which accumulated inside the BESS container. Although the batteries themselves did not explode, upon opening the container door and admitting air into the BESS, the gas mixture exploded. The fire incident at McMicken demonstrates that flammable gases generated during severe overheating of Li-ion batteries must be adequately managed to protect onsite workers and first responders.

While three years have passed since the McMicken site explosion, most published standards and existing fire codes do not yet explicitly address the explosion hazard of remote outdoor BESS enclosures located away from occupied buildings. To address this risk, staff proposes new COC **WORKER SAFETY-7**, which would require that test results from a BESS hazard mitigation analysis performed using the method prescribed by UL 9540A be submitted by the project owner to the KCFD for review and comment, and to the Compliance Project Manager (CPM) for review and approval. Staff's proposed COC **WORKER SAFETY-7** would ensure adequate protection to on-site workers and to first responders by ensuring that explosion risks posed by the BESS are mitigated by the BESS fire protection plans to a level that is less than significant.

More recently, staff inspected the site of the Tesla Megapack fire that occurred on September 20, 2022, at the Elkhorn Battery Energy Storage Facility near Moss Landing, CA, where one out of a total of 256 Megapacks caught fire. The North County Fire Protection District (NCFPD) responded to the incident and proceeded to let the fire burn itself out per Tesla's emergency action plan for first responders. The fire department used onsite fire water monitors (water cannons) to cool adjacent modules to prevent them from overheating. Staff learned that during project commissioning, the project owner had provided training opportunities to the NCFPD for practicing on how to deal with a fire at the facility. The important takeaway from this incident is that proper training for first responders and the appropriate fire water supply infrastructure are critical for safely limiting damage and controlling the fire. Therefore, the CEC staff proposes new COC **WORKER SAFETY-8** which would require the project owner to provide the appropriate fire water supply infrastructure for the BESS and allow access to information about the facility for training of the local fire department.

CONCLUSIONS AND RECOMMENDATIONS

Based on the information provided in the petition, the CEC staff proposes new COCs **WORKER SAFETY-6**, **WORKER SAFETY-7**, and **WORKER SAFETY-8** which would provide adequate protection to on-site workers and would mitigate the fire risks posed to first responders and the offsite public to a level that is less than significant.

With the adoption of new COCs **WORKER SAFETY-6**, **WORKER SAFETY-7**, and **WORKER SAFETY-8** and continued compliance with the existing conditions of certification in the HPP decision, staff concludes that the proposed modifications would be in compliance with applicable worker safety and fire protection LORS.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

The CEC staff recommends adoption of the following new conditions of certification:

WORKER SAFETY-6 The project owner shall submit the fire protection plans for the Battery Energy Storage System (BESS) to the King County Fire Department (KCFD) for review and comment, to the Delegate Chief Building Official (DCBO) for plan check and inspection, and to the Compliance Project Manager (CPM) for review and approval.

Verification: At least sixty (60) days prior to the start of construction of the BESS project, the project owner shall provide the complete set of BESS fire protection drawings and specifications to the KCFD for review and comment, to the DCBO for plan check approval and construction inspection, and to the CPM for review and approval.

WORKER SAFETY-7 The project owner shall submit a BESS hazard mitigation analysis per UL 9540A to the KCFD for review and comment, to the DCBO for plan check and inspection, and to the CPM for review and approval. The hazard mitigation analysis shall include consideration of potential thermal runaway fault conditions occurring within a single battery storage rack, cell module or cell array. The analysis shall include mitigations to prevent flammable gases released during fire, battery overcharging, and other abnormal operating conditions within the BESS from creating an explosion hazard that could injure workers or emergency first-responders.

Verification: At least sixty (60) days prior to the start of construction of the BESS project, the project owner shall provide the hazard mitigation analysis to the KCFD for review and comment, to the DCBO for plan check and inspection and to the CPM for review and approval.

WORKER SAFETY-8 The project owner shall provide an approved fire water supply for use by first responders when responding to an emergency related to the BESS. The project owner shall also provide access to information and the facility for the local fire department to conduct training.

Verification: At least sixty (60) days prior to the start of construction of the BESS, the project owner shall:

- a) Provide the fire water supply plans to the KCFD for review and comment, to the DCBO for plan check and inspection, and to the CPM for review and approval.**
- b) Provide a copy of a letter from the project owner to the KCFD offering access to information and the facility for training of KCFD personnel for emergencies that could occur at the BESS facility.**

REFERENCES

HPP 2022, Petition to Amend Henrietta BESS. 23 August 2022, Docket No. 01-AFC-18C (TN#:245663)