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Stantec

Memo

To:	Leonidas Payne California Energy Commission	From:	Caitlin Barns Stantec Consulting Services, Inc.
File:	Fountain Wind Project (23-OPT-01)	Date:	September 8, 2023

Re: Response to Deficiency Letter Docketed August 31, 2023

COMMUNITY BENEFITS DATA REQUEST

DATA REQUEST

Community benefits agreements are required under the applicable statute which states, "the commission *shall not certify* a site and related facility under this chapter unless the commission finds that the applicant has entered into one or more legally binding and enforceable agreements with, or that benefit, one or more community-based organizations…" (Italics added; PRC 25545.10(a).) To implement this statutory requirement, Title 20, California Code of Regulations, sections 1877(g) requires that the Opt-in application include the applicant's "plan or strategy, including a timeline for execution," to obtain legally binding and enforceable agreements. Additionally, under Title 20, California Code of Regulations, section 1878(c), no later than 45 days after an application is deemed complete, or a later date set forth by the executive director, the applicant shall provide the executed agreements required under Public Resources Code section 25545.10.

On January 3, 2023, the applicant filed a document entitled, Community Benefits Program (TN 248296-2). The document was drafted in 2021 and contains a list of projects the applicant proposes to fund to benefit the local community. The document largely contains descriptions of specific projects that the applicant is willing to fund purportedly based on community feedback. The project list is not current and contains outdated information. On several occasions, including most recently on July 27, 2023, in a meeting with CEC staff regarding outstanding data requests, the applicant has stated its intent to provide updated information on community benefits. However, to date the applicant has not submitted updated information and details about the proposed community benefits including a plan or strategy, and a timeline for execution, to obtain legally binding and enforceable agreements as required under Title 20, California Code of Regulations, section 1877(g).

For these reasons, the information provided by the applicant on community benefits does not meet the requirements of Public Resources Code section 25545.10 or the implementing regulation at Title 20, California Code of Regulations, section 1877(g). The CEC staff requests that the applicant submit information on the proposed community benefits agreement(s) that meets the provisions in Public Resources Code section 25545.10 and information on the applicant's plan or strategy, including a timeline for execution, to obtain these legally binding and enforceable agreements. (Title 20, CCR, sections 1877(g)).

APPLICANT RESPONSE

Pursuant to the conversation on July 27, 2023, the Applicant has been diligently working to finalize a legally binding and enforceable agreement with a community-based organization within Shasta County and provides the following information on the status of that agreement:

- The Applicant proposes to contract with a community-based foundation with an established presence in Shasta County to guide the distribution of funds for various community improvement projects to benefit the immediate project area, such as the communities of Burney, Montgomery Creek and Round Mountain. Funding for these improvement projects will be made via grants from the foundation from an endowment supplied by the Applicant.

- As of late August, the Applicant has received a form of endowment agreement from the foundation which is undergoing internal legal review and approval by the Applicant.
- The Applicant expects to execute a legally binding and enforceable endowment agreement by the end of September, and will provide a signed version of the agreement shortly after execution.
- The Applicant anticipates it will be able to provide a copy of the signed agreement no later than 45 days following the CEC's determination that the application is complete.

WILDFIRE DATA REQUESTS

BACKGROUND: UNDERGROWTH AND FLASHY FUELS

The applicant indicates they would remove taller woody vegetation in the 80-foot-wide corridor; however, the greatest risk of ignition is in the flashy fuels which are defined as materials such as grasses, leaves, draped pine needles, fern, tree moss and some kinds of slash, that ignite readily and are consumed rapidly when dry. Sometimes woody vegetation has higher fuel moisture and could suppress spot fires or ignition potential.

DATA REQUEST WF2-01: Provide a discussion of how often and over what radius or area flashy fuels will be cleared in areas near project structures and equipment, access roads, parking areas, and where project construction/demolition and operational activities will occur.

APPLICANT RESPONSE

In compliance with recognized vegetation management standards, the area beneath above ground collector lines (80-foot-wide corridor) will be maintained appropriately free of tall, woody vegetation via regular mowing to provide for safe operations and allow access for equipment inspections, vegetation control, and maintenance. The project's vegetation management practices will be based on various state and federal standards applicable to above ground electrical systems and vegetation management to support safe and reliable operations. For instance, the North American Electric Reliability Corporation (NERC) establishes standards to manage vegetation to prevent encroachment into electric lines. Additionally, California Public Utility Commission (CPUC) General Order 95, and California Department of Forestry and Fire Protection (CAL FIRE) administered Public Resource Code (PRC) 4292 and PRC 4293, promote woody vegetation management to prevent encroachment and manage fire risk. These vegetation management practices inherently create fuel breaks around electrical equipment and the associated ROW and reduce the risk of taller vertical vegetation (typically woody vegetation) interacting with electrified equipment. In response to the background information referenced in the Data Request, woody vegetation may indeed have higher moisture content and could suppress or reduce ignition potential; however, it is counterintuitive to manage for woody vegetation within the above round collection corridor given the applicable vegetation management standards, increased potential for taller woody vegetation interaction with electric equipment, and the absence of fuel break protections provided by taller vegetation. Woody vegetation will be managed to minimize the ignition potential of flashy fuels.

Vegetation within access road corridors, buried electric line corridors, and turbine pad sites will also be maintained free of tall, woody vegetation through regular mowing. Other project infrastructure, including the O&M facility, substation and switching station, access road surface, and the 15-foot gravel ring around the base of turbines will be maintained free of any vegetation.

Reference: Reference

Prior to construction the Applicant will prepare a project-specific Fire Protection Plan (FPP). The FPP shall require that hazardous fuels (e.g., wildland vegetation) in Project-managed corridors and rights-of-way shall be removed and maintained as needed upon regular inspection pursuant to best practices and as determined by wildfire mitigation experts' direction under the FPP and as required by state and federal fire safety regulations. "Flashy fuels" that occur within the project disturbance footprint will inherently be removed during the initial grading associated with the construction process. The size and location of the fuel removal area will be dependent on the specific type of activity and the environmental conditions at the time the activity is proposed to take place but will generally be limited to the area of temporary and permanent disturbance. A component of the PFF includes recognition of fire risk associated with construction activities, as well as potential fuel sources. Prior to activities that increase risk of ignition (e.g., blasting, grinding, welding, cutting etc.), the immediate work area will be cleared of potential flashy fuels (e.g., dry grass, pine needles, etc.).

BACKGROUND: RED FLAG DAYS AND HIGH FIRE DANGER/HAZARD

The applicant indicates that when the National Weather Service issues a Red Flag Warning (an alert that high winds and dry conditions could lead to rapid or dramatic increases in wildfire activity), the project-specific Fire Prevention Plan would require that the applicant and its contractors must cease all non-emergency work to respond to changes in fire risk. However, fires can start on days in which fire weather is bad and there are no red flag warnings. The applicant has indicated that a fire condition monitoring program will be implemented to monitor meteorological data during project construction and operations as part of the Fire Prevention Plan.

DATA REQUEST WF2-02: Please provide a summary/description of the fire conditions monitoring program and the meteorological triggers (independent of issued Red Flag Warnings) that would be developed/used to determine if high fire hazards exist and what measures would be taken to reduce fire ignition hazards on high fire hazard days.

APPLICANT RESPONSE

The Project-specific FPP would include a fire conditions monitoring program to monitor meteorological data during construction and operation. During both construction and operation, the designated Fire Coordinator would continuously monitor weather conditions during hot and dry weather. Meteorological conditions that would trigger cessation of activities would vary with the condition and the activity but will specified in the FPP and will be designed to reduce fire risk to the greatest practical extent. Factors such as humidity, wind speed, and temperature are the key watch factors. Should the National Weather Service issue a Red Flag warning, all non-emergency work would cease on the Project site. Activities may also be curtailed during Fire Weather Watches issued by the National Weather Service. A Fire Weather Watch means critical fire weather conditions are possible but not imminent or occurring.

On high-fire-hazard days without a Red Flag Warning, the following measures would be taken to reduce fire ignition hazards:

- Prior to construction, the Project applicant shall designate primary and alternate Fire Coordinators such that a Fire Coordinator is present at all times during Project construction. The Fire Coordinator shall be responsible for ensuring that crews have sufficient fire suppression equipment, communication equipment, shall lead and coordinate fire patrols, ensure that the required clearances are followed onsite, and ensure that all crew members receive training on the FPP and its components.

Reference: Reference

- The FPP shall use industry-approved fire behavior and fire spread modeling such as 'FlamMap' to develop thresholds and triggers for certain activities, including curtailment of construction-related activities that increase risk of ignition (e.g., blasting, grinding, welding, cutting, excavating, driving, etc.) The models will provide parameters based on temperature, wind speed, topography, fuel types, fuel moisture and relative humidity to establish work stoppage guidance.
- For vehicles within control of the contractor, the contractor shall require vehicle drivers to conduct a visual inspection of the vehicle for potential sparking risks prior to operation of the vehicle. This inspection should include, but not be limited to a check of tire pressure and an inspection for chains or other vehicle components that could drag while driving, For subcontractors or vendors where vehicles are not within the control of the contractor, the contractor or Applicant shall develop a standard brochure to send to vendors that shall provide educational materials about fire risks associated with vehicles and shall provide an inspection checklist.
- The Applicant and/or its contractors shall have water tanks, water trucks, or portable water backpacks (where space or access for a water truck or water tank is limited) sited/available in the study area for fire protection.
- During construction of the Project the Applicant and/or its contractors shall implement ongoing fire patrols during construction hours and for 1 hour after the end of daily construction and hotwork.
- All construction crews and inspectors shall be provided with radio and/or cellular telephone access that is operational within the Project Site to allow communications with other vehicles and construction crews. All fires shall be reported immediately upon detection.
- The Project Applicant and/or its contractors shall require that all internal combustion engines, stationary and mobile, be equipped with spark arresters in good working order.
- The Project Applicant and/or its contractors shall require that light trucks and cars with factory-installed mufflers be used only on roads where the roadway is cleared of vegetation.
- The Project Applicant and/or its contractors shall require that equipment parking areas and small stationary engine sites are cleared of all extraneous flammable material.
- The Project Applicant and/or its contractors shall include a monitoring and inspection protocol for turbines and electrical infrastructure.
- The Project Applicant and/or its contractors shall include protocol for disabling re-closers and de-energizing portions af the electrical collection and transmission systems.
- The Project Applicant and/or its contractors shall prohibit smoking in wild/and areas, with smoking limited to paved areas or areas cleared of all vegetation.
- The Project Applicant and/or its contractors shall ensure all vehicles will be equipped with a fire extinguisher.
- The Project Applicant and/or its contractors shall ensure all construction workers receive training on the implementation of the FPP including how to conduct a fire patrol, proper use of firefighting equipment, and procedures to be followed in the event of a fire, vegetation clearance and equipment usage requirements, turbine, and electrical equipment inspections.

- As construction may occur simultaneously at several locations, each construction site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires.
- The Applicant shall enforce a requirement that construction personnel park any vehicles within roads, road shoulders, graveled areas, and/or cleared areas (i.e., away from dry vegetation) wherever such surfaces are present at the construction site.
- The FPP shall require that all construction vehicles, including vehicles transporting supplies and materials, and any O&M related vehicles, are regularly inspected to minimize vehicle fire hazards.
- The FPP shall include provisions for fire prevention and fire control/suppression when using tracked equipment such as dozers, excavators, cranes, etc., that will be working near vegetation that may be ignited by sparks associated. with metal tracks and natural surfaces (i.e., rock).
- If emergency work needs to be undertaken during Red Flag Warning conditions, the FPP shall advise that extreme caution must be taken and preventative measures shall be implemented such as application of ground-based fire retardants/gels/foams on nearby (within 30 feet, or more depending on the type of 'emergency work') vegetation or other flammables.
- The FPP shall specify when use of public roadways by construction related vehicles, including those traversed by the public near the project site, will be limited or ceased due to critical fire weather (CFW) periods and when Red Flag Warnings (RFW) have been issued, with an objective of ensuring there will not be a significant impact to any emergency response plans or emergency evacuation plans.

In addition, the Applicant will implement the following voluntary fire prevention strategies during construction and operation of the project:

- In addition to dust abatement equipment (i.e., water trucks), when vegetation and/or timber disturbing Operations occur, a 200 Gallon water truck will be kept on site. All water trucks and water trailers will be capable of pumping water through a fire hose at sufficient volume and pressure (20 gallons per minute at 115 psi) to effectively attack a fire start. Devices capable of communicating with fire agency dispatch services from the operating site will be required for all Construction and Operations.
- All vehicles must have at least a 5-pound fire extinguisher in working order with valid and dated inspection ticket. All heavy equipment are required to carry no less than the equivalent of a 10-pound fire extinguisher in working order with valid and dated inspection ticket.
- The Applicant or its employees, agents, contractors or subcontractors shall conduct a diligent aerial or ground inspection within the first two hours after cessation of construction related Operations each day during the dry period when fire is likely to spread. The person conducting the inspection shall have adequate communication available for prompt reporting of any fire that may be detected.
- On high-fire-hazard days without a Red Flag Warning during Fire Season (May 1 to October 31), the Applicant will measure Humidity every 2 hours with a handheld device capable of measuring relative humidity. The Applicant will keep a daily log of humidity readings and all construction related activities would cease construction-related activities when relative humidity drops below 20%.

Reference: Reference

BACKGROUND: INTERFERENCE IN AERIAL FIREFIGHTING ACTIVITIES

Current information in the record indicates that due to the height of the proposed turbine towers, aerial firefighting will be precluded over and near the proposed project. The inability to use aerial firefighting due to the project may result in significant impacts to the environment and public safety. The applicant has indicated that it will coordinate with Cal Fire and provide Cal Fire with maps of turbine locations, but such action does not appear to mitigate for the loss of aerial firefighting activities. Given the unique situation of a project that impacts firefighting in an area prone to wildfires, and the importance of aerial firefighting in mountainous wooded areas, information is necessary to ensure impacts are fully assessed and appropriate mitigation, if possible, is developed.

DATA REQUEST WF2-03: Other than providing maps of the project structure locations, how will the applicant ensure that wildfire firefighting activities by Cal Fire, Shasta County Fire Department, or other local fire departments are not impeded by the project structures?

APPLICANT RESPONSE

The statement “aerial firefighting will be precluded over and near the proposed project” is not accurate. In a memorandum prepared by Bret Gouvea, Chief, CAL FIRE/Shasta County Fire during the County’s review of the project in 2021 (Appendix A), Chief Gouvea explained that while obstacles such as wind turbines create some risk for aerial fire fighters, such obstacles are commonplace and do not preclude effective aerial firefighting. The distinction between potential hazards to aerial fire fighters and ability to use aerial equipment on wildfires is important. According to the Chief, “the key to working in this environment is knowledge of their existence.” Maps are prepared showing “the type of hazard, exact location and the height of the hazard.” Chief Gouvea clarifies: “these safety mitigations allow CAL FIRE to conduct aerial firefighting operations throughout the state in various hazard conditions.” Thus, the suggestion that the proposed turbines will result in “significant impacts to the environment and public safety” due to preclusion of aerial firefighting is not supported by the record and is the opposite of the conclusion by the Shasta County Fire Chief in 2021. Furthermore, the Project design, and specifically turbine spacing and alignment in linear “strings,” provides open corridors up to 1.3 miles wide before access by both fixed-wing and rotary-wing aerial firefighting equipment. To summarize, wind turbines do not preclude the use of aerial firefighting equipment, their location and height simply need to be made known to pilots as are other aerial obstructions across the state In consideration of this information and other information, the County’s EIR concluded that the project would create a less than significant impact to the environment and public safety based on wildfire risks.

The record also contains testimony by wildfire expert, Dan Quigley, former CAL FIRE Chief in Siskiyou County, who was retained by the Applicant explaining that fire retardants could be successfully applied by both fixed wing and rotor wing aircraft in between and around the turbines.

DATA REQUEST WF2-04: Provide a plan that indicates how the applicant will ensure that adequate firefighting capabilities are in place to mitigate the loss of aerial firefighting at and near the project site, including coordination with Cal Fire, Shasta County Fire Department, and local fire agencies.

APPLICANT RESPONSE

The data request mistakenly assumes that the project will need to “mitigate the loss of aerial firefighting at and near the project site.” Because aerial firefighting will in fact be possible at and near the site, no mitigation is required to address such a loss. As noted in the record, by the Shasta County Fire Chief and confirmed by the project’s wildfire experts, aerial firefighting, particularly the use of helicopters, will still be possible at and near the

Project. and the full suite of aerial firefighting assets, including air tankers and helicopters, can be effectively used along and within the perimeters of the Project area.

Furthermore, aerial firefighting is an adjunct to effective ground-based firefighting. The Project will facilitate greater ground-based firefighting access, which wildfire experts also explain is the most effective and commonly used means of containing and suppressing wildfires (TN# 248297-3). The existing landscape within the Project area consists of a nearly homogenous young pine plantation with very limited break in the continuous dense forest compounded with complex topography. These factors pose increased challenges to a ground-based response. The Project, with its associated infrastructure including roadways and turbine pad sites, will improve access to the site for firefighting purposes compared to existing conditions. The Project will create access breaks in the existing dense vegetation, specifically up to 510 acres of defensible space, that will provide for increased opportunities to slow and contain the spread of wildfires and access to heavy ground equipment involved in wildfire response. In addition to the 510 acres of defensible space, the project will be implementing up to 687 acres of shaded fuel breaks along all the primary and secondary access roads.

Shasta County's EIR concluded that the project would create a less than significant impact to the environment and public safety based on wildfire risks.

BACKGROUND: WILDFIRE IGNITED BY NACELLE OR TURBINE FIRE

The applicant indicates that the turbines shall be equipped with fire detection and prevention technology. The nacelles will include automatic fire extinguishing/suppression systems. The applicant's Mitigation Measure 3.16-2a requires a monitoring and inspection protocol for the turbines and electrical infrastructure.

DATA REQUEST WF2-05: Provide a detailed description of the fire suppression system for the nacelle including the method of fire suppression and presence of any fire suppression chemicals.

APPLICANT RESPONSE

Fire events in modern turbines are rare, and turbines with fire suppression systems in the nacelles make wildfire risk even less likely. This technology combined with the wildfire mitigation features of the project and development and implementation of a FPP ensure adequate firefighting capabilities are in place. As stated above, the record demonstrates there will not be loss of aerial firefighting at or near the project. Shasta County's EIR concluded that the project would create a less than significant impact to the environment and public safety based on wildfire risks.

Technology that will be deployed at the Fountain Wind Project will include a two-part fire detection system (arc detection and smoke detection) and a fire suppression system. The two fire detection systems continuously monitor the turbine for signals that fire may be imminent, and operate even if the wind turbine is not in operation.

Arc Detection System

The first and most important line of protection against a nacelle fire is the standard arc detection system that finds the light flash from an arc and disconnects the source of power in less than 100 milliseconds. A light flash from an arc is sufficient to shut down the wind turbine immediately and remove the energy source.

Reference: Reference

Advanced Smoke Detection (ASD) System

The primary objective of the ASD is to sense the smoke in the nacelle and switchgear compartments. The ASD shuts down the wind turbine, disconnects the switchgear, and activates the alarm sounders in the wind turbine. The detection system has a number of intelligent fire detectors, which contain optical smoke and thermistor temperature sensors. To prevent incorrect alarms, the detectors operate in a mode in which smoke and heat must be sensed to start an alarm. An alarm results in a wind turbine shutdown and a report is sent through the SCADA (communications) system to the Project's offsite control center, monitored 24/7.

Fire Suppression System

In case of a fire incident, the electrically activated fire suppression system actively suppresses fire at the source by de-energizing hazard zones and utilizing a suppression agent. The fire suppression agent is a residue-free, non-corrosive, electrically non-conductive fluid. The agent is the most environmentally friendly on the market today, with an ozone depletion potential of 0 and global warming potential of 1. The suppression system shuts down the turbine in approximately 10 seconds. Connected to a back-up power source, the fire suppression system continues operation after the main switchgear is turned off and limits fire dispersion and further damage. The fire protection system can even operate after the wind turbine is disconnected from the grid to give alarms to the personnel present in the wind turbine and send data to the Project control center.

DATA REQUEST WF2-06: Provide description of the monitoring and inspection protocol for the turbines and nacelles and a schedule for inspections of the fire prevention and fire suppression systems in the nacelle to ensure they remain in peak operating condition.

APPLICANT RESPONSE

The FPP will contain a section addressing the monitoring and inspection protocol for the turbine and nacelles, including scheduled inspections of the fire suppression systems to ensure reliable performance. These protocols will include the manufacturer's recommendations on equipment maintenance, part replacement, local environmental factors and recommendations by wildfire experts as well as turbine technicians.

DATA REQUEST WF2-07: In the event the automatic fire suppression does not fully extinguish a fire in the nacelle or turbine, how would the fire be controlled/extinguished to prevent it from starting a wildfire?

APPLICANT RESPONSE

Modern wind turbines are extremely safe, reliable and pose little fire risk. Modern wind turbines with fire suppression systems provide even further protection, especially when properly maintained as will be the requirement for this Project. If a fire ignites, there is still little chance a fire would escape beyond the turbine or nacelle due to the instantaneous response by the detection and suppression systems. In the unlikely event it does, the fire safety mitigation measures described above would reduce the likelihood that it would spread. Specifically, the turbine pad and an additional area around the pad site would be comprised of non-flammable concrete and gravel. A 186-ft-radius, 2.5-acre area around the turbine pad would be maintained clear of vegetation and other potential fuels to prevent fire from spreading. The turbines are connected via a SCADA communications system to monitor every aspect of the turbine, including fire detection and fire suppression functions. Operators continuously monitor the Project and will be alerted to any irregular conditions and will respond in accordance with the FPP and other protocols. Additional fuel breaks throughout the project act to prevent fires from spreading (see response to WF2-01) and all-weather roads provide for immediate access in the event heavy firefighting equipment is needed to access the turbine site.

Reference: Reference

Appendix A: Letter from Bret Gouvea, CAL FIRE/Shasta County Fire Chief

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

COOPERATIVE FIRE PROTECTION
Since 1980

SHASTA COUNTY FIRE DEPARTMENT

Bret Gouvea
Chief

Paul

This letter is a response to a public comment letter you received regarding the Fountain Wind DEIR and aerial firefighting. The below comments are based on my consultation with the CAL FIRE Tactical Air Operations Unit (TAO).

Aerial hazards do pose a safety concern for aerial firefighters; however, they are something that we must work around on a daily basis. Though it is not an ideal condition to work in, it is understood that there is always the potential for these conditions to exist. Whether it's power lines, antenna towers, windmills, cell towers or cables/wires spanning a drainage or any other aerial hazard, the key to working in this environment is knowledge of their existence.

Additionally, every CAL FIRE Air Attack Base has an aerial hazards map that identifies the type of hazard, exact location and height of the hazard. Prior to the start of each fire season, all aerial firefighters are briefed on these hazard maps daily. When non-base aircraft arrive at a new base, they are briefed on these hazard location maps. These safety mitigations allow CAL FIRE to conduct aerial firefighting operations throughout the state in various hazard conditions.

Thanks

Bret Gouvea
Chief
CAL FIRE / Shasta County Fire