SCE
Supplemental Testimony: Dave Kobus
Dave Kobus
EXH-1064

BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITING EVALUATION COUNCIL

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| In the Matter of the Application of:<br><br>Scout Clean Energy, LLC, for Horse Heaven Wind Farm, LLC,<br><br>Applicant. | DOCKET NO. EF-210011<br><br>SUPPLEMENTAL TESTIMONY OF DAVE KOBUS ON BEHALF OF SCOUT CLEAN ENERGY |

# SUPPLEMENTAL TESTIMONY OF DAVE KOBUS

# ON BEHALF OF

# SCOUT CLEAN ENERGY

**AUGUST 8, 2023**

## I. INTRODUCTION:

Q. Please state your name, occupation, and business address.

A. My name is Dave Kobus. I am the project manager for the Horse Heavens Clean Energy Center. My business address is 1385 Cortland Avenue, Richland, Washington.

Q. What is the purpose of your supplemental testimony?

A. I was deposed on July 26, 2023. Upon review of my deposition transcript, supplemental testimony is necessary to clarify and elaborate on statements made during my deposition.

Q. Are you able and willing to submit supplemental live testimony and cross examination regarding these changes?

A. Yes I am.

## II. BATTERY ENERGY STORAGE SYSTEMS ("BESS"):

Q. During the deposition, you were asked questions about fire suppression systems in the BESS. (Kobus Deposition, pg. 111, ln. 22 to pg. 112, ln. 25; pg. 124, ln. 7 to pg. 133, ln. 15.) Are there any clarifications you would like to make with regard to that testimony?

A. Yes. In recent days we have learned that sprinkler systems do not provide the best means of fire suppression. Instead, the information attached to this testimony provides the most accurate and current information, which will be submitted to EFSEC. Attached to this testimony as Exhibit A is Scout's complete and accurate information regarding fire suppression at BESS facilities.

**EXHIBIT A: Scout Clean Energy Planned Modification Regarding BESS Facilities and Fire Suppression:**

As additional battery storage facilities have been constructed around the world in recent years, industry experts including members of the National Fire Protection Association (NFPA) 855 standard committee, members of the International Fire Code standard committee, and the Society of Fire Protection Engineers, have developed updated guidance for fire protection systems at these units based on large scale fire testing results. At the time of the Application for Site Certification in February 2021, Benton County had adopted the 2015 version of the International Fire Code (IFC). This version of the code had no requirements for lithium-ion battery installations. In order to comply with the latest guidance, the Project is updating the thermal runaway mitigation design of its Battery Energy Storage System (BESS) to align with the updated guidance.

Scout will procure batteries that are listed to UL9540,[1] have completed UL9540A large scale fire testing, and are designed in accordance with NFPA 855 2023ed[2] and the 2021 International Fire Code. The battery enclosures will be installed according to the "remote, outdoor" installation requirements of NFPA 855, including vegetation control to prevent the spread of any fire. The battery enclosures will be equipped with fire detection, but not suppression. Scout will recommend that a fire within a battery enclosure will be allowed to fully consume itself. An Emergency Response Plan will be provided prior to facility operations to train the first responders on the hazards associated with an event.

Additionally, after the full system has been designed but prior to construction, a Hazard Mitigation Analysis will be provided by a licensed fire protection engineer detailing the hazards associated with each failure mode and the associated mitigations. As part of the Hazard Mitigation Analysis, an analysis will be performed using data from the UL9540A fire testing to show that a fire inside one battery enclosure will not propagate to the adjacent battery enclosures. The Hazard Mitigation Analysis will also address the gas composition of venting during a thermal runaway event to ensure the battery siting does not present a risk to public health due to toxic gases.

In addition to updated information for the BESS, as it has been determined that the Project Site is not serviced by an adequate and reliable municipal-type water supply for supplying firewater to the occupied Operations and Maintenance Building, Scout will provide a water tank sized for

[1] UL9540, as previously mentioned, is a set of standards that an energy storage system (ESS) must meet. UL9540a is a method of evaluating thermal runaway in an ESS; it provides additional requirements for battery management systems (BMS) used in ESS. UL 9540A will continue to evolve to reflect changes in ESS installation requirements, advancements in fire science, and the needs of the ESS industry and code authorities.

[2] NFPA 855 (Standard for the Installation of Energy Storage Systems) is a National Fire Protection Association Standard developed to define the design, construction, installation, commissioning, operation, maintenance, and decommissioning of stationary energy storage systems including traditional battery systems such as those used by utilities.

structural firefighting purposes in accordance with NFPA 1142: Standard on Water Supplies for Rural Firefighting.

*The following information will be added to Appendix P (Emergency Response Plan):*
Although fires within industrial-scale lithium-ion battery energy storage systems are rare and expected to become even more rare with the updated NFPA 855 and IFC 2021, when fires do occur, these systems present several unique hazards for first responders. Battery cells do not have a single point of disconnect that can be used to de-energize the system. Instead, there will always be stranded energy in the battery cells. The amount of energy is dependent on the state of charge of the batteries at any given time. Additionally, lithium-ion batteries have the potential to enter thermal runaway, which generates heat and flammable gases. If a thermal runaway or fire event begins inside a battery container, the fire detection system will notify site operational personnel and first responders. First responders should not attempt to extinguish the fire or arrest the thermal runaway. The battery containers will be designed to contain the event until it fully consumes itself. Attempting to extinguish the event creates a risk of a deflagration event, which substantially increases the risk to first responders. Applying water to the event also creates the scenario where the event will smolder for days or weeks without being fully extinguished. When the event is allowed to fully consume itself, the duration of the event is only a few hours. Additional training will be provided to the first responders prior to the battery system being placed into commercial operation.

**Rationale for change:** Fire protection systems best management practices have been evolving in recent years including since the time the ASC was developed in 2020-2021. Fire suppression using either water or aerosol clean agents have been shown to be ineffective at arresting thermal runaway. Applying water to batteries has caused thermal runaway events to smolder for many days, allowing flammable gases to build up. Aerosol clean agents may prevent a fire, but do not arrest thermal runaway so flammable gases continue to be generated. While both water and aerosol fire suppression methods may prevent flaming, they do not arrest the thermal runaway chemical reaction, and they can increase the risk of a deflagration event. As a result, the best practice for fire protection is now considered to consist of the control measures described above, intended to prevent the spread of fire between containers in the unlikely event that a fire occurs.

**Changes to Resource Impacts:** No change to previous analysis. This information is provided as information on current best practices based on questions received during the adjudication process.