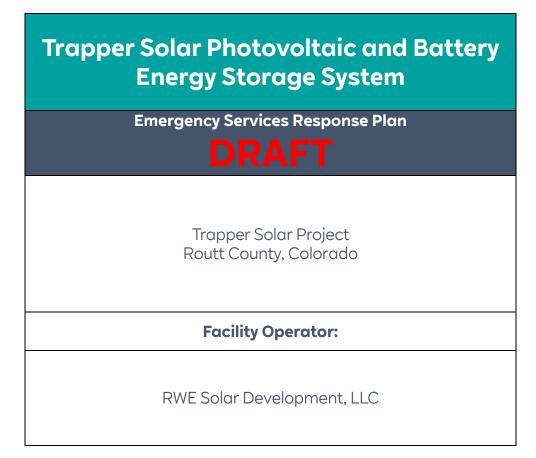
## **RWE Clean Energy, LLC**

**EHS Management System** 

ID: EHS 2.1 Ap. 2

**EHS 2.1 Ap. 2:** Emergency Services Response Plan Trapper (PV+BESS)

EHS 2.1 Ap. X – Preliminary Emergency Services Response Plan Trapper (PV & BESS)



# **RWE Clean Energy, LLC**

**EHS Management System EHS 2.1 Ap. 2:** Emergency Services Response Plan Trapper (PV+BESS)

ID: EHS 2.1 Ap. 2

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Offline versions are not controlled. The controlled version can be found at the RWECE EHS SharePoint page.

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# **RWE Clean Energy, LLC**

**EHS Management System EHS 2.1 Ap. 2:** Emergency Services Response Plan Trapper (PV+BESS)

## 2. Purpose

The purpose of this Emergency Services Response Plan (ESRP) is to provide employees, visitors and first responders with general awareness of the associated risks, hazards, and general emergency response techniques related to the photovoltaic & battery energy storage system (BESS) at the Trapper Solar and BESS facility during its operational period. The ESRP also describes actions to be taken to ensure the safety of all employees, first response personnel, and the surrounding community in the event of an emergency and is considered a supplement to the RWECE EHS&S Management System *Element 2.1 Emergency Preparedness and Response Program*.

All employees shall be trained in the actions to be taken should an emergency occur. Relevant elements of this ESRP will be communicated to all visitors during initial site safety orientation training.

This Emergency Services Response Plan provides emergency contact information and outlines procedures to mitigate and effectively respond to an emergency should one arise at the Trapper Solar & BESS Facility.

## 3. Project Scope

RWE is proposing to develop the Project, which would consist of an up to 250-megawatt (MW), utility-scale solar energy system; an up to 125-MW (4-hour storage energy capacity) battery energy storage system (BESS); and ancillary facilities. The Project would sit on approximately 3,030 acres of private and state-owned land in Routt County, Colorado, approximately 1.5 miles south of the town of Hayden (Project area). Project components would include solar panels mounted on trackers arranged in multiple arrays, transformers, direct current to alternating current inverters, a collection system that connects the arrays to a BESS, a substation, an operations and maintenance (O&M) building, and a switchyard. Project construction activities are planned to commence in summer of 2026. The Project is planned to be in service in winter 2027 and operate for approximately 35 years.

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The Project area and adjacent properties primarily consist of rangeland with some dryland farming. County Road (CR) 53 runs north to south through the eastern portion of the Project area (Figure 1). CR 61 passes through and borders the Project area to the north (see Figure 1).

The Project will be primarily accessed via U.S. Highway 40 to Poplar Street through the northern portion of the Project area (Figure 1). The Project is expected to provide electric power to the existing electric transmission grid through a new interconnection to the existing transmission lines adjacent to the southeast corner of the Project area. Note: See Appendix for facility map, PV, & BESS electrical layouts.

The project includes the following equipment:

### Solar / Photo-Voltaic

- 250MW DC
- PV Modules
- Single Axis Tracking system
- DC Combiner Boxes
- DC-AC Converters
- Medium Voltage Transformers

#### BESS

- Lithium Iron Phosphate (LiFePO<sub>4</sub>) battery system with 4-hour duration
  - o LG JF2 BESS Units
    - Each Unit consists of 3 M-link units and 1 E-Panel assembly
  - Each unit capacity 0.69MW / 5.1MWh (max)
  - Each unit contains 84 lithium-iron-phosphate battery modules (LiFePO<sub>4</sub>)
  - Non Walk-In Type (Non Occupiable) Containers
- 125 MW, 500 MWh (Total Operational Capacity)
- DC-AC Converters
- Meduim Voltage Transformers

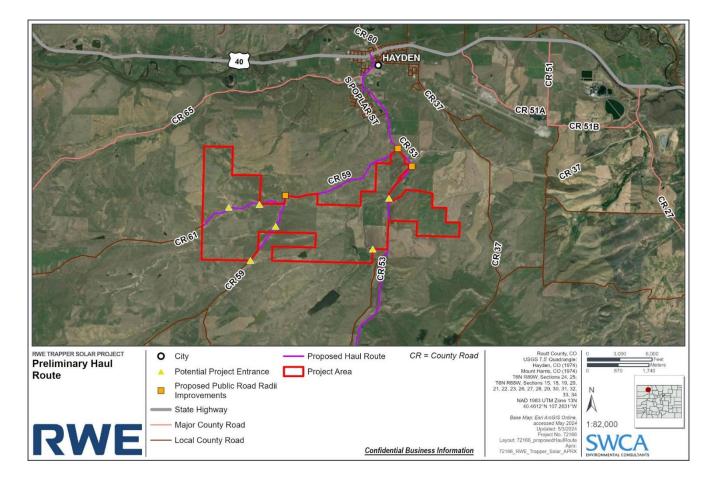
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#### **Substation**

- Main Power Transformer
- High-Voltage circuit breaker
- Medium-Voltage circuit breakers with associated disconnect switches
- Control enclosure with protection and control relay panels
- Metering equipment
- SCADA and communication equipment



The project's substation connects into the existing Airey-Vienna 69kV transmission line via overhead line .

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RWECE Emergency Dispatch will contact the following local agencies in the event of an emergency:

- West Routt Fire Prevention District (Fire and Rescue)
- Routt County Emergency Medical Services (EMS/Medical Emergencies)
- Routt County Sheriff (Police)
- Hayden Police Department (Police)

## 4. Emergency Contacts

### 4.1 Internal

Safety Manager:	TBD
O&M Site Manager:	TBD
Project Manager:	TBD
Construction Manager:	TBD
Switchyard Manager:	TBD

PHONE NUMBER PHONE NUMBER PHONE NUMBER PHONE NUMBER

## 4.2 External

For All Emergencies, Please Call 911 Trapper Solar & BESS 911 Address: XXXXXX Address		
	Local Site Emergency Contacts	
Police and Non- Emergency Vehicle- Related Incidents	Routt County Sheriff's Office 970-879-1090 2027 Shield Drive Steamboat Springs, CO 80487 Hayden Police Department 970-276-2535 249 Hawthorne Street Hayden, CO 81639	
Fire Department(s)	West Routt Fire Department 970-276-3511 500 S. Poplar Street Hayden, CO 81639	

EHS 2.1 Ap. 2: Preliminary Emergency Services Response Plan Template

# **RWE Clean Energy, LLC**

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	Routt County EMS 970-870-5551
Local Hospital	The Memorial Hospital 970-824-9411 750 Hospital Loop Craig, CO. 81625
Utility	XXX-XXX-XXXX XXXX Address
LG Support	Phone Number Address

## 5. Facility Entry

The Trapper Solar and BESS facility is a fenced and gated installation. The installation will be access controlled via a main gate and multiple secondary access gates which will be locked at all times. The Substation and BESS facility will be surrounded by a nominal 7-foot chainlink fence topped with 3 strands of barbed wire.

Operations personnel will support the site from the Operations building which is located in the southern portion of the site. The 911 address of the Trapper Operations & Maintenance building has not been provided but will be included in an updated version of this plan.

The site's interior access roads shall be maintained to facilitate accessibility to the site by emergency personnel, especially during inclement weather. RWECE will ensure ongoing upkeep activities are in place by the start of the project's construction.

A Knox Box (emergency key / Document box) will be provided by RWECE in coordination with the local fire department requirements. The exact location of the Knox Box will be determined during detailed design.

## 5.1 Authorized & Unauthorized Access



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Permission to enter the Trapper facility must be obtained from the RWECE Authorized point of contact (Site Manager or Other Designated Person).

Note: All other entry is considered unauthorized.

Emergency Contact Number	Main
Austin Dispatch Center (24 Hours)	+1(512)482-8008
Site Manager	See "Emergency Contacts" for contact info.

Before entering the facility, evaluate the site to determine if an alarm, indicated by red beacon, has been activated. If there's visible smoke, flame, gas cloud, or visual / audible emergency indication <u>STOP</u>, do not enter the solar Array, BESS, or substation area and follow the general guidelines outlined in this ESRP. Site specific emergency indicators will be added to this plan prior to operation.

RWECE Austin Dispatch Center or Site Supervisors will facilitate authorization to enter the Trapper facility. County officials will need to provide advance notice to RWECE Austin Dispatch Center or designated Site Supervisor when scheduling facility visits for nonemergency purposes.

## 6. Solar / Photo-Voltaic System Overview

The Trapper Solar Facility consists of multiple photovoltaic modules arranged in an array which harnesses approximately 250MW of direct current (DC) voltage which is converted into alternating current (AC) at a voltage of 34.5kV. The AC current is then routed to the project's Substation via an underground collection system, where its voltage is stepped-up to 69kV and then connected via an overhead line to the existing Transmission line.

# **RWE Clean Energy, LLC**

**EHS Management System EHS 2.1 Ap. 2:** Emergency Services Response Plan Trapper (PV+BESS)

## Main system components and general description:

- Solar / Photo-Voltaic (PV) Modules Convert the energy from Sunlight into DC voltage
- Tracking System Supports the PV modules and is arranged for the most continuous solar exposure.
- DC Collection System Brings the voltage from the modules towards a central location
- DC Combiner Boxes Combines the voltage from the PV modules into a medium voltage underground DC collection system.
- Inverters Convert DC to AC (60 hertz)
- Switchgear Coupling between the Transformer and the AC Collection System
- Transformers Convert Medium voltage AC to High Voltage AC
- AC Collection System (Underground) Routes high voltage AC from transformer to Substation

## 6.1 Potential Hazards & Failure Modes

Potential hazards while working on or around a Solar Facility are typically electricity and grass/wildland fires. Grass and wildland fires can be the result of failed electrical equipment or other external influences.

## 6.1.1 Electrical Hazards

Electrical equipment, including overhead powerlines, should always be treated as energized. Associated hazards include electric shock, arc flash and electrical fire. Hidden electrical equipment can also pose hazards to persons.

Note: Do not trench or dig within the facility as there are numerous buried electrical cables present.

# **RWE Clean Energy, LLC**

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## 6.1.2 Grass / Wildland Fires

The site should be free of combustible vegetation with only a ground cover of maintained vegetation adjacent and beneath the solar racking. Flying embers from off-site fires may inundate the area during fire events. The modified fuel areas and project features will resist ignition from ember showers. Ignition of the ground cover could result in a fast moving, but lower intensity fire that will burn in a patchy manner on the site beneath the modules. This type of fire would be relatively short-duration as vegetative fuels are consumed rapidly. There would not be a sustained source of heat and or flame as there would be with surrounding wildfires.

To minimize the risk of grass & wildland fires, RWECE has an ongoing practice to limit or reduce vegetation growingwithin the PV arrays and substation area utilizing a combination of herbicide application and mechanical cutting (mowing and trimming) which greatly reduces fire behavior.

Extinguishment of grass/wildland fires will be per Fire Department policies and procedures.

Note 1: <u>Do Not drive Fire Department Apparatus among the PV array</u>. Stay on improved and maintained site roads.

Note 2: For additional information regarding grass and wildland fire prevention, refer to the RWECE Vegetation Management & Wildfire Prevention Program.

## 6.1.3 Electrical Equipment Failure

If a component of the solar facility suffers a failure, this failure could lead to an equipment fire. If a piece of electrical equipment is burning, fire fighting approach should be as follows:

- Take a defensive approach and maintain a safe distance
- Do not spray water on burning electrical equipment

•

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**EHS Management System EHS 2.1 Ap. 2:** Emergency Services Response Plan Trapper (PV+BESS)

Water can be used to cool adjacent exposures and to prevent the fire from spreading

- Allow burning electrical equipment to self consume
- Do not drive among the array or between rows on PV Modules.

## 6.2 Solar / Photo-Voltaic Safety Features

Solar facilities are designed to meet the National Fire Protection Association (NFPA) 780 fire code as well as the National Electric Code.

#### 6.2.1 Fire Break

Per the project Vegetation Management Plan, a minimum 10-foot-wide strip of grass outside of the project fence will be maintained/mowed to prevent fire from spreading from the project site to adjacent vegetation or structures, should fire occur.

Site access roads accessing the main gate are designed to meet the International Fire Code Standard of a minimum 20 feet wide (Section 503 Fire Apparatus Access Road).

Perimeter roads, as well as roads providing access to the inverter equipment pads shall be 12 feet wide. The perimeter roads provide a fire buffer, accommodate for project O&M activities, and facilitate onsite circulation for emergency vehicles.

Note: For additional information regarding fire breaks, refer to the RWECE Vegetation Management & Wildfire Prevention Program.

## 7. Battery Energy Storage System (BESS) Overview

The Trapper BESS facility consists of container-style battery enclosures and associated equipment supplying 125 MW 4 hour/ 500 MWh that will interconnect to the Project's substation. The BESS facility helps manage grid stability by charging during times of excess electricity production and discharging to the grid during peak hours or times of lower solar output.

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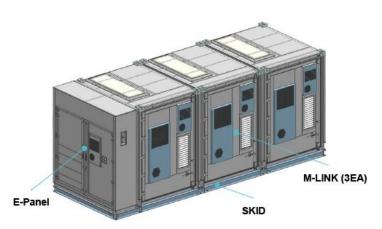
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Overview of the LG JF2 DC-Link BESS Container:

Length: 23.5 Feet Width: 8 Feet Height: 9 feet



## 7.1 Potential Hazards & Failure Modes

Hazards include the potential for electrical shock and arc flash. Proper personal protective equipment (PPE), as identified on associated Arc Flash Labels, shall be worn when accessing the project substation, BESS area, or associated equipment.

Note: Access to Electrical equipment shall only be conducted by RWECE Qualified and Authorized Electrical workers.

Lithium Iron Phosphate (LiFePO4) batteries are generally safe, but under certain conditions there can be an increased fisk for the release of toxic gases and / or fire.

## **Battery Energy Storage Systems Risk Reduction**

Potential hazards related to BESS are primarily associated with the possibility of thermal runaway occurring from a malfunctioning or damaged battery. Newer battery technologies have minimized the occurrence of thermal runaway through a system of protections, including internal cell monitoring and partitioning, container design and features, ventilation and air conditioning systems.

The Project's BESS will include self-contained container units. The Project will use battery storage systems that are NFPA Standard 855-compliant, are Underwriters Laboratories certified, and include built-in failsafe and cooling systems designed to prevent thermal runaway and the spread of fire. Under normal operations, BESS facilities do not contain,

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store, or generate hazardous materials in quantities that would represent a risk to offsite receptors. In addition, the Project's preventative measures and fire and safety systems make an accident condition very rare. Nevertheless, because BESS facilities do store energy, a battery thermal runaway can occur if the temperature in a cell or an area within a cell rises due to thermal failure, mechanical failure, or internal/external short circuiting. The battery storage system to be used in this project has been tested following UL 9540A, a test method developed by Underwriters Laboratories to address safety concerns identified by the building codes and the fire service in the United States. The UL 9540A test results help both BESS manufactures and code authorities to understand the impact of battery thermal runaway to the built environment and any fire protection mitigation required to contain an event.

The Project must meet industry standards for adequate separations, cascading protections, and suppression systems to limit failure to a single battery container. BESS must use an energy management system for 24/7 monitoring, management, and balancing of cell voltages, currents, and temperatures to ensure every cell remains within its safe operating parameters. The system must transmit an alarm signal if potentially hazardous temperatures or other conditions, such as short circuits, over voltage, or under voltage, are detected. This system is capable of controlling and isolating individual BESS container from the rest of the system both remotely and manually.

The Project will feature a pre-engineered BESS equipped with integrated operational management systems, fire safety, and thermal management systems, such as HVAC, ventilation, gas, heat and smoke detection and alarms, and fire suppression systems. In addition to the many individual standards referenced, a failure mode and effects analysis must be performed for each system and requires a test to ensure safe compatibility of the system's parts.

The proposed batteries and containers will also include the following important monitoring and safety components:

- Modular battery racks designed for ease of maintenance
- An integrated fire detection and suppression system
- An integrated thermal management system
- An integrated battery management system

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The fire detection system will be connected to a fire alarm and control panel within each container, which can then be connected to a site-level fire control center.

## 7.1.1 Thermal Runaway

Thermal runaway is the uncontrollable self-heating of a battery cell. It begins when the heat generated within a battery exceeds the amount of heat that can be dissipated to its surroundings. An overheated cell may generate flammable and toxic gases, and, if temperatures around the cell are high enough, the emitted gases may ignite. This phenomenon can cascade to adjacent cells and progress to portions of subassemblies of the BESS. Thus, the term "runaway". All BESS components utilized on RWECE installations have been tested according to UL9540A ensuring minimal risk of cell-to-cell and module-to-module propagation during a thermal event.

It is RWECE's Policy to allow BESS systems which have reached a Thermal Runaway condition, where fire is present, to burn and self-consume which will minimize the potential for re-ignition and allow the constituents to be consumed through complete combustion. Fire Protection Water shall not be utilized on a burning BESS Container. Adjacent BESS Containers should be sprayed with water to cool them from any radiant heat. Any ground fires should be extinguished and any potential exposures protected.

## 7.1.2 Off Gassing

Gasses released from battery energy storage systems during thermal runaway are flammable and toxic. The type of gas released depends on the battery chemistry involved but typically includes gases such as: carbon monoxide, carbon dioxide, hydrogen, methane, ethane, and other hydrocarbons.

## 7.1.3 Stranded Energy

Stranded energy is the term used for when a battery has no safe way of discharging its stored energy. This commonly occurs after a BESS fire has been extinguished and the battery terminals have been damaged. This is a shock hazard to those working with the

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damaged BESS since it still contains an unknown amount of electrical energy. Stranded energy can also lead to reignition of a fire within minutes, hours, or even days after the initial event

## 7.1.4 Deep-Seated Fires

BESS units are comprised of batteries that are housed in a protective metal or plastic casing within larger containers. These layers of protection help prevent damage to the larger system but can also block water from accessing the seat of the fire. Due to the deep seated nature and difficulty of penetrating the failing batteries with water, a defensive firefighting tactic is recommended, where water will be used as exposure protection.

## 7.2 Causes of Failures

There are several situations which could result in a full or partial failure of a battery that could potentially lead to fires, explosions, and/or the release of toxic gases.

## 7.2.1 Thermal Abuse

BESS are intended to operate over a temperature range provided by the manufacturer and tightly controlled during operation. If operating outside the acceptable temperature range, the BESS may not work as intended, may result in premature aging of the battery, and can lead to failure. Thermal abuse can be caused by external sources such as, contact with burning or overheated adjacent cells, elevated temperatures, exposure to external heat sources, or failure of battery cooling systems.

## 7.2.2 Electrical Abuse

Electrical abuse takes place when a battery is overcharged, charged too rapidly, or externally short-circuited. This can also occur if the battery is discharged too rapidly or if the battery is over discharged below its specified bottom voltage. Electrical abuse can lead to an inoperable BESS unit potentially resulting in overheating, fire, and /or failure.

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The Battery Management System closely monitors the charging and discharging of each BESS module to ensure that electrical abuse is prevented.

## 7.2.3 Mechanical Abuse

Mechanical abuse occurs if the battery is physically compromised if the battery is crushed, dropped, penetrated, or otherwise physically damaged. The BESS unit enclosures are designed and rated to protect the internal components from mechanical abuse. Bollards are utilized as an additional protective device in areas where vehicular traffic is present.

## 7.2.4 Internal Faults

Internal faults can be the result of, the use of low-quality materials, or deficiencies in the manufacturing process. In order to safeguard against these types of failures, RWECE procures BESS and other critical electrical components from Tier-1 Suppliers only and ensures that the highest standards of quality are adhered to during manufacturing.

## 7.2.5 Environmental Impacts

Environmental factors include ambient temperature extremes, seismic activity, floods, ingress of debris, rodents, corrosive mists (salt fog in certain marine locations), potentially leading to damage within the BESS, if not well-controlled. Each Bess unit assembled to IP55 standards and is designed to maintain defined temperature and humidity conditions, as well as filtration of particulate within each enclosure. Parameters are monitored closely by the BMS. See below for Environmental specification specific to the LG JF2 DC Link BESS Units:



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Environmental	Specification
Ingress rating	IP 55
Seismic	ASCE 7-16 SDs 1.2
Operating Temperature	-30~50°C
External Storage Temperature	-20∼45°C (TBD) (Within 8 Month)
Altitude	< 2,000m
Noise	< 80dB

## 8. BESS Safety Features

The Trapper BESS facility and its associated equipment is designed to meet the following codes and standards in order to ensure that hazards are addressed and mitigated:

- National Electrical Code
- 2023 NFPA 855 Standard for the Installation of Stationary Energy Storage Systems
- UL 9540 Standard for Energy Storage Systems and Equipment
- UL 1973 Standard for Batteries
- UL 9540A Standard for Test Method for Evaluating Thermal Runaway Fire Propagation
- Internaltional Fire Code Chapter 12 Compliant

The technology will include specific fire detection, suppression, explosion and temperature control managed through the BMS (Battery Management System) <u>Features that include the following:</u>

- Smoke & Gas Detectors
- Temperature Sensors
- Controls & Monitoring
- Fire Alarm Control Panel (FACP) with Horn & Strobe
- Liquid Cooling System & HVAC
- Active Ventilation
- Emergency Shut-Offs

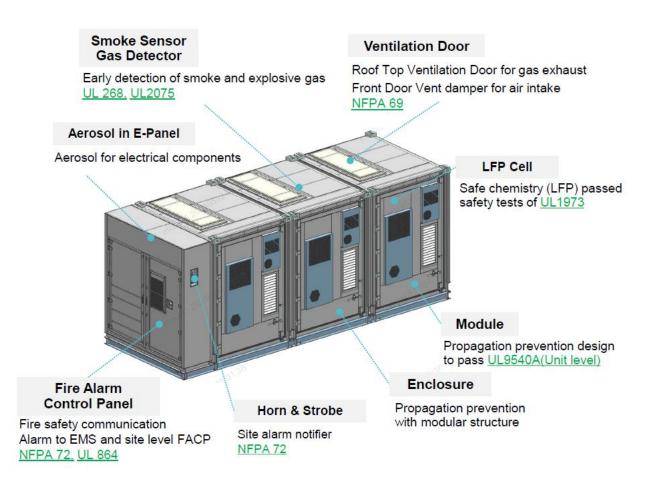
See Below for a general overview of the safety features of each BESS Container:



#### **EHS Management System**

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## 8.1 Thermal Management System

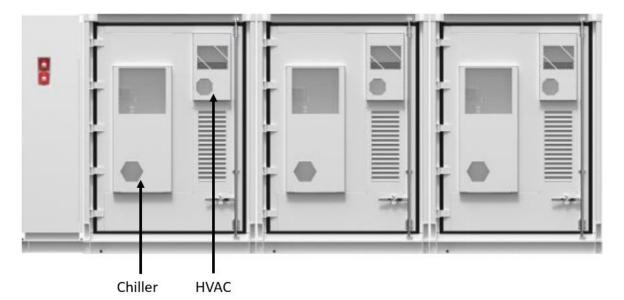
Each BESS unit is equipped with a thermal management system which ensures each BESS unit is operating with the designed temperature envelope. The system uses an 85-95% Ethelyne-glycol based liquid cooling system. The coolant mixture is circulated through the battery racks and through the heat exchanger of the chiller. Temperature of the coolant mixture is regulated in the thermal management system via heatexchangers and a closed-loop HFC-32 refridgerant system.

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Temperature of the battery racks and coolant mixture are monitored through the use of temperature sensors and managed through the battery management system. (BMS)

The thermal management system works autonomously and does not require user interface to turn on the system when needed or to adjust temperature settings.

In addition to the liquid-cooled internal battery thermal management, the ambient air within each BESS container is controlled by an HVAC unit mounted on the door. The purpose of the HVAC is to regulate the enclosure temperature and humidity levels to the specified parameters. Additionally there is an intake airfilter to minimize accumulation of dust and other particulate ingress. The HVAC operates similar to a conventional residental HVAC system and utilizes R-513A Refridgerant.

## 8.2 Controls & Monitoring

Control and monitoring is provided through the Battery Management System (BMS) located in the E-panel of each BESS unit.

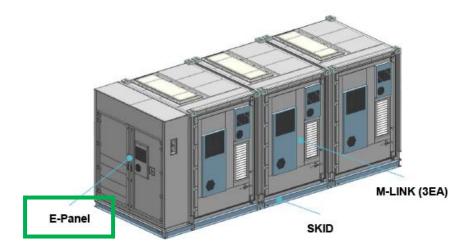
The main purpose of the BMS is to identify abnormal battery conditions or deviations in normal system operating conditions and isolate or shut down operations of the modules if any parameters are violated. The main tasks of the BMS include:



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- Temperature management;
- Battery operation management;
- Operational status monitoring;
- State of charge (SOC) management; and
- Battery cell balancing.

The BMS collects and processes all battery rack data as well as enclosure periphery data. BMS data and warnings are sent, in real-time, to the SCADA (Supervisory Control And Data Acquisition) monitoring system. The BMS will initiate safe shutdown of the system if faulty conditions are met or predefined limits are reached.



The BESS safety and emergency concepts include shutting down the system, or parts of the system, if current and voltage thresholds are exceeded, in the event of communication errors, in the event of a fire, or another thermal event.

## 8.3 Emergency Shutoffs

There are emergency stop buttons located on the exterior of each BESS unit. The emergency Stop Button (E-Stop) cuts off the DC power from the battery system thus isolating the battery from the remainder of the system.

Note: Emergency shut off <u>does not discharge</u> the BESS system.

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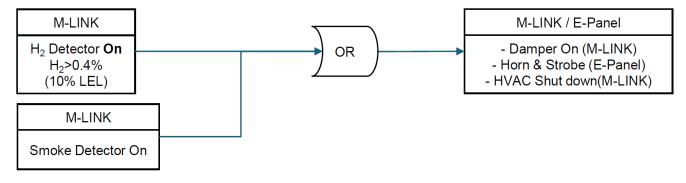
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#### 8.4 Smoke & Gas Detectors

Each M-Link module is equipped with both smoke detector and a dedicated Hydrogen gas detector. Additionally, each E-Panel is equipped with a smoke detector. If any one smoke detector is triggered or if any hydrogen detector senses levels at or above 10% of the Lower Explosive Level (LEL), the unit is automatically shut down. At this time the horn and strobe will activate, the HVAC will shut down, and the active ventilation will automatically activate.

There will be visual indication of which sensor has been activated which can be seen on the Fire Alarm Control Panel on each unit as well as via a remote monitoring software.



#### 8.5 Visual & Audible Alarms

On the side of each E-Link cabinet, there is a site alarm notifier. This consists of a Flashing Strobe as well as an audible alarm sound. Both the visual and audible signals automatically activate if any one smoke detector or hydrogen detector is activated, or if the aerosol coolang agent is released into the E-Panel.

#### 8.6 Aerosol Cooling Agent

In the event of an electrical failure within the E-Panel, there is an aerosol fire suppression generator. The activation of the Fire Extinguishing Generator (FP-500S, FirePro) occurs if smoke or flames are detected with the E-panel enclosure. Upon Discharge of the aerosol

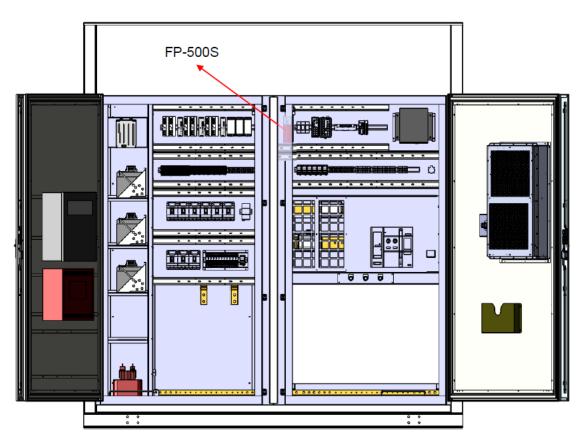
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agent, the visual and audible alarm will sound and the unit will safely shut-down.



Generator Max. Coverage Volume(4.58 m<sup>3</sup>) > E-Panel Inner Volume (4 m<sup>3</sup>)

#### 8.7 Fire Alarm Control Panel (Addressable)

There is an NFPA compliant Fire Alarm Control Panel (FACP) located in the E-Panel Enclosure. Notification will be displayed on the LCD screen of the FACP if any individual smoke detector or hydrogen detector is activated. Additionally, if there are trouble or communication errors with any of the detectors or if the aerosol fire surpession agent is released, notification will also appear on the screen of the FACP.



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NFS-320E	
Appearance	

### 8.8 Explosion Protection

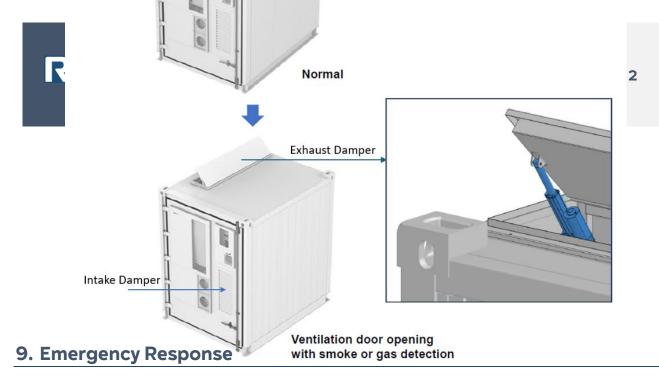
A safe distance shall always be maintained between site personnel / emergency responders from any BESS unit exhibiting a fire or the potential for an off-gassing or fire event.

Note: Responders shall maintain a minimum safe distance from any involved equipment experiencing an alarm condition or discharging smoke or fire, while taking into consideration factors such as wind and accessablity.

#### Active Ventillation:

The ventilation system is capable of activating on each M-Link independently based on signals from any one smoke or Hydrogen detector (at or above 10% LEL) and the HVAC system will shut down automatically to minimize potential ignition sources.

There is no forced induction of outside air. Instead the system works on the principle of natural convection where there is an actuated intake damper located on the M-Link door and an actuated exhaust damper located on the top of each unit. Both intake and exhaust dampers will open automatically if a signal is received from any individual detector.



All RWECE Operations personnel entering the Trapper Solar and Storage Facility are to be trained and knowledgeable in emergency response protocol. No employee is required or permitted to place himself or herself in danger of harm in order to facilitate extinguishment, evacuation or rescue. All rescue operations will be performed by trained professionals.

There are no municipal hydrants located in this area. Water for firefighting operations will come from a combination of fire department apparatus from the fire departments and mutual aid partners capable of carrying water to the incident scene. Local fire department knowledge of the area will also be utilized for securing a fill site to sustain water supply if needed.

Water should be used to protect adjacent exposures, such as homes, forested areas, and adjacent equipment, as needed, to limit the potential of the fire spreading.

## Note: If BESS Unit is on fire, allow BESS equipment to self-consume.

## 9.1 Remote & 3<sup>rd</sup> Party Monitoring

In accordance with NFPA 72 standards, the BESS facility is monitored 24/7 by a NFPA 72 compliant certified third party fire alarm monitoring company. In the event that an alarm is received, the alarm is routed to the 24/7 NFPA 72 compliant certified third party fire alarm monitoring company. The NFPA 72 compliant certified fire alarm company will work with RWECE to validate the alarm and, if validated, call the emergency

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dispatch. Then the NFPA 72 compliant certified third party fire alarm monitoring company will call a provided RWECE call list including the 24/7 control center. This process will be tested prior to facility operation with RWECE, the NPFA 72 compliant certified fire alarm monitoring company, and emergency dispatch.

In the event that an emergency situation is identified, either through control panel notification, visual identification, or remote monitoring, the following general emergency response measures shall be initiated.

The following general steps summarize the emergency response process:

## 9.2 Assessment & Notification

- If there is any threat or potential threat to life or safety, call 911 immediately to summon the aid of public safety responders
- Assess the situation to determine potential safety concerns to life and the environment, with life safety as the priority.
- Notify the site manager of the identified emergency situation.
- Site manager will also notify emergency services directly.
  - It is important that the information being relayed be specific and identifies, at a minimum, the following: [1] type of emergency services needed, [2] specific BESS container/enclosure, or equipment in question, [3] any isolation process required and [4] any site specific considerations such as fire, heat, smoke, etc.
  - Direct local emergency response personnel to the entry point(s) identified on the site plan in the Appendix.

## 9.3 Evacuation

- Upon identifying an emergency condition that requires evacuation, communication to all employees and visitors shall be made.
- In the event of an emergency, the muster point shall be located XXXX. The muster location will be provided on Site map in Appendix 2.

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- Site manager or designee shall account for employees and visitors at the muster point and any unaccounted for persons will be reported to the first responders/emergency services.
- Site supervisor will direct employees and visitors to primary or alternate evacuation routes to safely evacuate the site.

## 9.4 Communicate with Emergency Services

- Site supervisor or designee, when available, shall be posted at a safe distance as a flagger to assist with directing emergency services to a safe location for briefing. All incoming Emergency Services Units shall stage and a command post shall be set up in an area deemed safe. An RWECE representative will respond as quickly as possible.
- RWECE shall provide a call-list in a knox box so that first responders can initiate communication with designated personnel.
- Staging for command post and other emergency activities shall take consideration to remain up wind and up hill when possible, due to smoke plume, off-gassing, and potential runoff.
- Communicate any change in condition that may have occurred since the initial 911 call.
- Report any missing individuals to the scene commander.
- Inform scene commander of potential hazards: such as heat, smoke, state of electrical equipment (e.g., live, isolated.), etc.
- Site supervisor or designee will liaise between fire department and utility in the event that energy needs to be isolated.
- Provide the fire department with all appliable SDS documents and assist with isolation of electrical equipment (if doing so does not endanger life.)

## 9.5 Safety Perimeter & Stand-Off Distances

• Stand-off distance shall be established & maintained between emergency personnel and the affected BESS unit. (Taking into account wind and accessibility)

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## 9.6 Protect Adjacent Exposures

- Let the Equipment Self-Consume. Burning electrical equipment is already damaged and must be replaced.
- Protect adjacent exposures, such as homes, forested areas and adjacent equipment, as needed, to limit the potential of the fire spreading.
- If the fire must be suppressed, the Site Manager (or Designee) will provide guidance to local authorities on how to proceed safely.
- Direct contact with the BESS container is not required.
- DO NOT OPEN THE DOORS.

## 9.7 Drainage, & Water Run-Off

- As stated above, water use during a fire will primarily be used to cool adjacent structures. The fire will be allowed to self consume.
- Water used to cool adjacent structures will be similar to standard stormwater and should not contain additional contaminants beyond normal operations.
- However, should water be used on the fire for any reason, water can be contained using various methods including absorption mats, barriers, and temporary diking.
- In the unlikely event that water is used directly on a fire, this water can be retained until confirmation of water quality is determined.

## 9.8 Overhead Powerlines & Onsite Electrical Equipment

- Overhead powerlines are always energized and shall be treated as such
- Other electrical equipment such as sub-station main power transformer are also to be considered energized at all times.
- Even if a BESS unit is disconnected, the batteries will still be energized with stored energy and shall be treated as such.
- DC Voltage is always present around PV Modules. **Even at Night.**

#### 9.9 Important Considerations

• Identify and validate the hazard in order to minimize injury.

EHS 2.1 Ap. 2: Preliminary Emergency Services Response Plan Template

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- Refer to SDS for important information regarding battery chemistry.
- It is suggested that emergency responders handle response to BESS facilities in a similar manner to any other energized electrical enclosure.
- Electrical components produce gas during combustion. All responders should use a self-contained breathing apparatus (SCBA) during fire and post-fire operations.
- Any pooling that occurs as a result of fire suppression activities may present an electrical hazard and should be avoided.
- DO NOT assume the system is de-energized and do not attempt to de-energize any equipment.

## 9.10 After a Fire

- Firewatch after a fire or thermal event shall take place for a minimum of 48 hours to include continuous monitoring of gas levels and temperatures utilizing thermal imaging camera(s) and calibrated gas detection equipment.
- Firewatch personnel shall be assigned by RWECE and shall have a means of continuous communication to site management.
- Hazards after a fire should be identified to ensure proper personal protective equipment (PPE) is available for clean-up crews and hazardous materials (HAZMAT) teams. This may include respirators to protect personnel from any known gases that continue to be generated from hot cells.
- RWECE will comply with applicable firewater retention and cleanup measures that may be required by local, state or federal regulations.
- Once the site has been turned over to RWECE, the site supervisor shall direct onsite personnel on procedures for securing the site for safety and pending investigation.
- Care should be taken to ensure damaged equipment containing energy have been safely de-energized in accordance with disposal procedures, if possible, before handling and disposal.
- If unable to completely de-energize equipment involved in a fire, care should be taken with handling or dismantling equipment as it may still contain hazardous



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energy levels. Proper PPE is required.

## 10. Safety Data Sheets (SDS)

The safety data sheet (SDS) for the solar modules and BESS Containers provide additional information about the risks and hazards associated with the Equipment. The SDS provides guidance on components of emergency response, safe handling and safe storage of the materials. A copy of the SDS will be provided as Appendix 1 of this document and will be part of the First Responders Information provided in the "Knox" Document Box at the Trapper main Gate, as well as kept readily available at the O&M Building.

## **11.** Public Safety

Note: Access to the Trapper Solar & Storage Facility is limited to trained & qualified RWE Clean Energy Staff and Maintenance personnel only.

All BESS and substation equipment at the facility is protected by a nominal seven foot chain link security fence and secured according to local and code requirements. Access to the BESS and substation occurs through the main gate which is secured and access controlled. Only RWECE operations personnel have access to the Project. The entire facility perimeter, including the PV array, is protected by woven-wire, game-friendly, fencing. Signs signifying "Authorized Personnel Only" and warning of the danger of energized equipment are posted on the perimeter fence. Emergency contact information signage as well as muster area location will also be posted.

## 12. Drills & Training

RWE Clean Energy shall provide training for First Responders prior to energization. This training shall include review of the ESRP and Site Orientation.

Regular training and emergency drills shall be conducted in coordination with local Fire

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Department(s). Any change of Equipment or Site Layout will be communicated directly to Fire Officials via an updated ESRP.

Note: Access to Electrical equipment shall only be conducted by RWECE Qualified and Authorized Electrical workers.

## 13. Program Updates

This Emergency Services Response Plan shall be reviewed and updated by RWECE site management no less frequently than a bi-annaul basis. The updated plan shall be reviewed with local first responders during each update period.



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# **14.** Appendix 1 – Safety Data Sheets (SDS)

Bess Safety Data Sheets from OEM shall be provided in this section Including FirePro Aerosol BESS Cells Dilectric Fluids Glycol Coolant Etc.

## 15. Appendix 2 - Facility Map

Facility Map to be provided in this section with all points of Entry and Egress clearly marked, as well as location of muster points and emergency equipment, to include; fire control panel(s), Water supply points, fire extinguishers, spill kits, etc. This will need to be done for both Construction and Operations and this ESRP be updated accordingly.

## 16. Appendix 3 - Site Layout

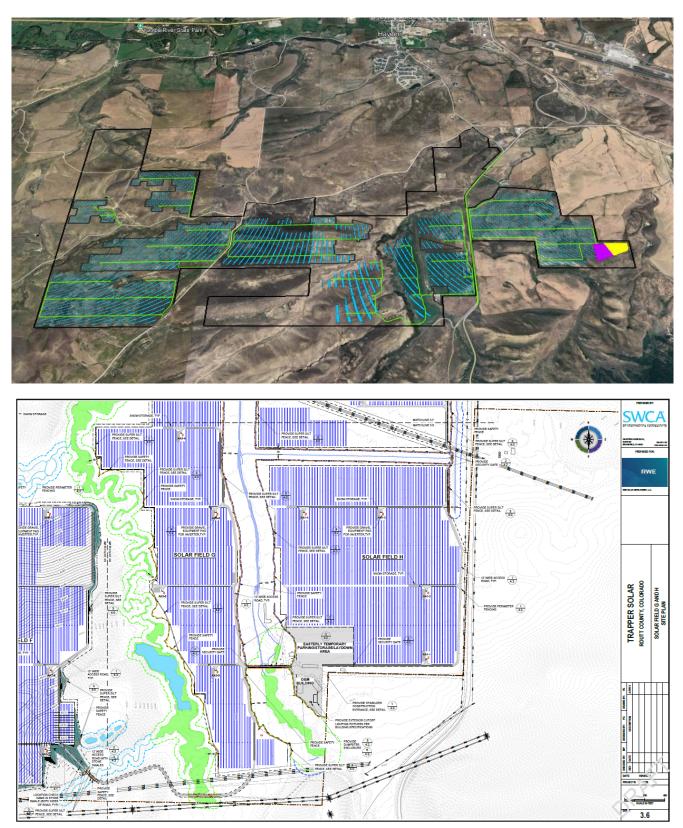
Site layout to be provided in this section.

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