About the Capricorn BESS Project

THE PROJECT

The proposed Capricorn BESS will help in meeting the Queensland Government's aim to increase renewable energy supply, generate jobs and support economic growth for the future.

The Capricorn BESS is to be located adjacent to the existing Bouldercombe Substation and the approved Bouldercombe Solar Farm.

Figure 1. Project Site

KEY COMPONENTS

Capacity: 300 MW / 1200 MWh

Structure:

- BESS containers
- Inverters and medium and high voltage power stations
- Electrical equipment including primary transformers, auxiliary transformers, harmonic filters, and control rooms
- Administrative and operations & maintenance buildings and associated facilities

Construction Period: Approximately 12-18 months

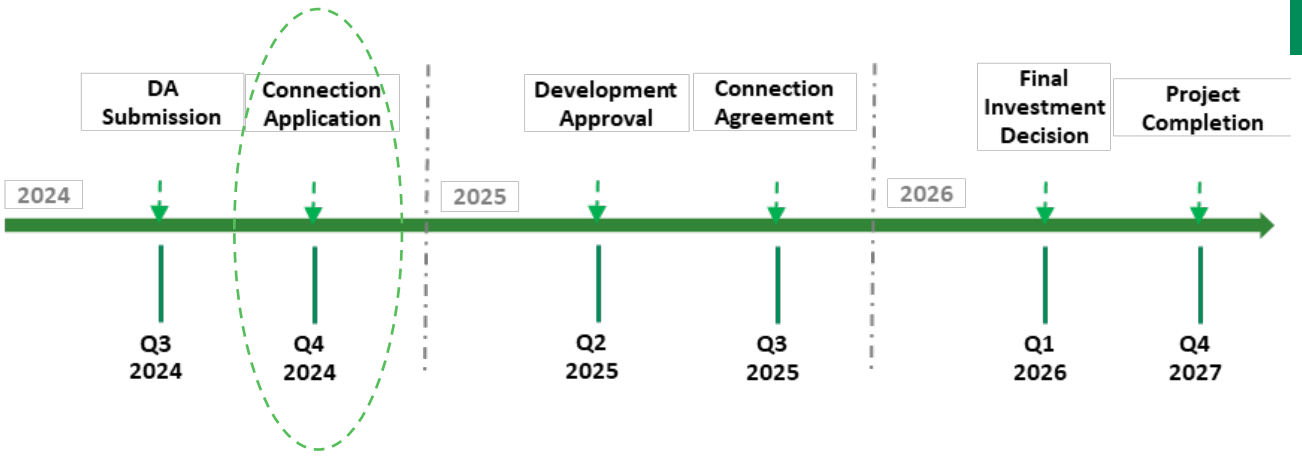
Jobs: 80-100 jobs during the construction phase and up to 10 full-time employment opportunities once operational.

PROJECT STATUS

A range of technical studies have, and will be, conducted to inform the Project. These include studies to inform the Development Application, as well as additional studies so that EGPA can understand potential impacts of the Project on the local community. The list of technical studies includes:

- Stormwater Assessment Report
- Traffic Impact Statement
- Cultural Heritage Due Diligence
- Landscaping Plan
- Noise Assessment Report
- Hazard Incident Management Plan
- Ecological Survey and Assessment
- Social and Economic Context Analysis

The Development Application was submitted to the Rockhampton Regional Council on 4 September 2024.



NEXT STEPS

The Development Application is undergoing assessment by the Rockhampton Regional Council.

If required, a Request for Further Information may be requested.

Once EGPA has responded to the Request for Further Information (if issued), the Development Application will be publicly notified and the community will have an opportunity to provide submission on the Capricorn BESS Project.

Scan the QR Code or visit our website to find out more:

https://www.enelgreenpower.com/our-projects/in-development/capricorn-bess-project

About Enel Green Power Australia & Creating Shared Value

WHO WE ARE

Enel Green Power®, develops and operates renewable energy plants worldwide. Our projects have a total capacity of around 64 GW via wind, solar, geothermal, and hydroelectric power, as well as BESS facilities.

Enel Green Power Australia (EGPA), a joint venture company co-owned by Enel Green Power SpA and INPEX Renewable Energy Australia Pty Ltd, currently operates three renewable energy plants totalling 310 MW of installed capacity.

Figure 1. Flat Rocks Wind Farm

CREATING SHARED VALUE

EGPA seeks to deliver sustainable community-based initiatives alongside its renewable energy developments. EGPA is committed to a 'Creating Shared Value' approach, which focuses on identifying and expanding the connections between societal and economic progress.

EGPA has a focus on identifying initiatives that are:

- Investments in communities: medium-long term involvement in community support projects, also in partnership with local organisations, aimed at tackling significant problems both for the local area and for EGPA. For example, projects linked to a wider strategy for the benefit of the community, or specific initiatives dedicated to communities close to the project; and
- Commercial initiatives with a social impact: contributions to activities related to the core business. Examples of such initiatives are marketing campaigns that also provide benefits for the community or that include charitable contributions.

Creating Shared Value initiatives are identified via the development of a Social and Economic Context Analysis (SECA). The SECA is not a statutory requirement; instead, it is an internal requirement of EGPA.

CREATING SHARED VALUE EXAMPLES

- EGPA sponsored Port Augusta City Council's Access and Inclusion program where ten local community members with disabilities underwent intensive training for 26 weeks, thereby enabling them to acquire critical skills for pursuing future employment locally (Bungala Solar Farm)
- EGPA has partnered with the Port Augusta City Council to sponsor the Malka Awards. Local Indigenous artists are celebrated through an annual art show and exhibition (Bungala Solar Farm)

- Partnership with Agriculture Australia to undertake research on Agrivoltaics, which is defined as the simultaneous and mutually beneficial use of the same land for agriculture and solar photovoltaic energy (Cohuna Solar Farm)
- Sponsorship of STEM program - school industry partnership playing a pivotal role in promoting STEM education and inspiring the next generation to pursue tertiary qualifications and careers in STEM

DO YOU HAVE SUGGESTIONS FOR CREATING SHARED VALUE INIATIVES?

We welcome your suggestions!

Please provide your suggestions via the Community Survey, accessible via the QR Code or visit our website:

https://www.enelgreenpower.com/our-projects/in-development/capricorn-bess-project

For local community and stakeholder enquiries, please contact:

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Community Engagement & Sustainability Officer

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About Battery Energy Storage Systems

WHAT IS A BESS?

- Battery Energy Storage Systems (BESS) use rechargeable batteries to store electricity.
- They can store power from renewable energy generators or from the electricity grid during times of low demand.
- Stored electricity is released when needed, such as during peak demand periods or power outages.
- BESS systems are effective ways of managing the unpredictability of renewable energy sources by storing excess power and using it later.
- This makes the power grid more flexible and reliable, allowing it to handle more renewable energy sources efficiently.
- BESS can help diminish the reliance on less sustainable energy alternatives, thereby contributing to the reduction of greenhouse gas emissions and combating climate change.

INTEGRATION TO THE GRID

- Capricorn BESS will be connected and store electricity directly from the power grid.
- Electricity stored in a BESS is typically used during periods of high demand (also known as peak hours). This helps to stabalise the grid by providing additional power when it's needed most.
- BESS can also be utilised for energy arbitrage which involves storing energy when prices are low and using it when prices are high, ultimately leading to cost savings.
- During a power outage or other emergencies, BESS can provide crucial backup power to maintain essential services.

Figure 1. Example of a BESS Project

SUPPORTING POWER IN QUEENSLAND

- The Queensland Government has established a 50% renewable energy target by 2030.
- As of 30 June 2024, 27% of the electricity generated in Queensland is produced from renewable energy sources (solar, wind hydro, bioenergy and rooftop photovoltaic)[1].
- BESS support the transition to renewable energy generation by absorbing and releasing energy on demand.
- The proposed Capricorn BESS will help in meeting the Queensland Government's aim to increase renewable energy supply, generate jobs and support economic growth for the future.

[1] Department of Energy and Climate. 2024. Queensland's Renewable Energy Targets. Queensland Government. Retrieved from: https://www.energyandclimate.qld.gov.au/energy/reasons-for-renewable/renewable-energy-targets

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Capricorn BESS Project: Stormwater

STORMWATER ASSESSEMENT

A Conceptual Stormwater Assessment was undertaken for the proposed Project, that included a review of potential stormwater related risks, a consideration of runoff flow paths that may be changed by the Project, a review of erosion risk and impact assessment for stormwater.

Objectives: Identify the extent to which the Project will impact on stormwater quantity and quality.

Methodology:

- Desktop review of ground elevation, hydrology and watercourse maps.
- Desktop review of climate and water flow data.
- Desktop review of spatial information and lidar data.
- Identification of surface water features.
- Assessment of potential impacts on surface water quality.
- Assessment of potential for risk of erosion.
- Identification of risks to the Project from surface water (including flooding).

ASSESSEMENT OUTCOMES

The Conceptual Stormwater Assessment concluded that:

- The Project is unlikely to result in any changes to the overland flow characteristics of the Fitzroy Basin catchment.
- The proposed BESS infrastructure is located within an area of minor flooding within the 1% Annual Exceedance Probability flood event.
- The Project is unlikely to increase the likelihood of flooding or affect the volume of stormwater runoff at a catchment level.

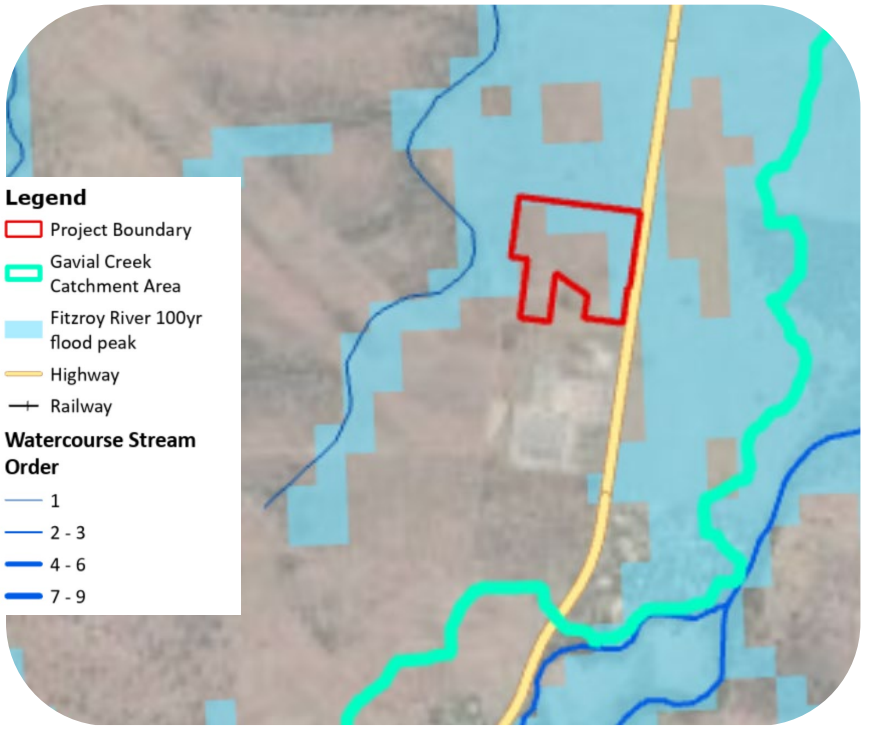

Figure 1. Flood Mapping

WATER IMPOUNDMENT

To ensure environmental damage does not occur, the facility is designed to contain a volume of liquid discharged from the site. As a result, impacts to groundwater are unlikely as the Project will not have interface with groundwater sources.

NEXT STEPS

A Stormwater Management System will be developed at the detailed design phase.

An environmental management plan will be developed to manage spills and leaks and erosion and sediment.

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Capricorn BESS Project: Noise

PRELIMINARY NOISE ASSESSEMENT

A Preliminary Noise Assessment was undertaken using an environmental noise modelling software,

Objective: Characterise the existing noise environment and predict noise levels during operation of the Project.

Methodology:

- 10-minute operator-attended noise measurements were undertaken at Noise Monitoring Locations during the day, evening, and night periods on 24 July 2024.
- Instrument calibration was checked before and at the conclusion of monitoring.
- Meteorological conditions were observed during the attended noise monitoring. Wind and temperature conditions were measured with a handheld anemometer.
- Noise monitoring was conducted in the absence of both rainfall and windspeeds above 5 metres per second.

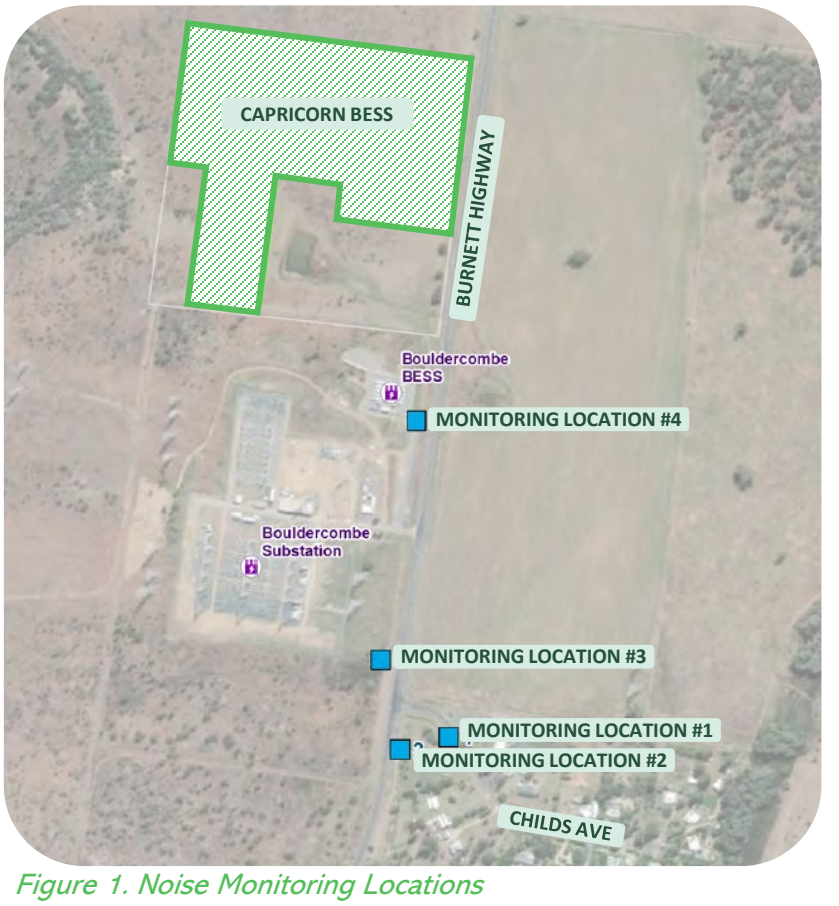

Figure 1. Noise Monitoring Locations

ASSESSEMENT OUTCOMES

Noise levels are predicted to meet acoustic quality objectives set out in the Environmental Protection Policy (Noise) Acoustic Quality Objectives, during the day, evening and night.

For reference, the quiet countryside is approximately 30 dB(A).

The nearest Sensitive Receptors are representative of locations that will potentially experience the highest operational noise impacts during operation.

Monitoring Location / Sensitive Receptor	Distance from Nearest Project Noise Source	Predicted Project Noise Levels, L_{eq} dB(A) *	Acoustic Quality Objectives, L_{eq} dB(A)
#1: 1 Childs Avenue	612 m	29.5	42 (Day & Evening) 37 (Night)
#2: 2 Childs Avenue	625 m	31.6	42 (Day & Evening) 37 (Night)
#3: 'Glenlands' Residence	1,887 m	19.7	42 (Day & Evening) 37 (Night)

Note: * Day: 7am to 6pm; Evening: 6pm to 10pm; Night: 10pm to 7am
Note: No results for Monitoring Location #4 as it is not a residential sensitive receptor

NEXT STEPS

A re-assessment of potential noise impacts will be undertaken using final equipment selections and relevant manufacturers' noise data at the detailed design stage of the Project.

The re-assessment will consider potential cumulative noise impact.

Design and implementation of noise attenuation will be considered if noise criteria is not met.

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Capricorn BESS Project: Traffic

TRANSPORT ROUTE

The delivery of construction machinery and BESS components will travel along the State Controlled Road Network to the Project site. The specific location where the components may be transported from is yet to be determined, however it is anticipated that they will be transported from the Port of Gladstone.

A Traffic Impact Statement was undertaken and found:

- The Project is not expected to have any impact on the Local Road Network.
- At the peak construction phase, 90 daily vehicle trips are estimated to occur over the State Controlled Road network. Conservatively up to 20% of trips will occur in the AM peak and 20% will occur during the PM peak.
- Up to 20 traffic movements may be generated during operations, which will have a negligible effect on the operation of the Burnett Highway.

Figure 1. Key Transport Routes

Data reviewed as part of the Traffic Impact Statement:

- For the peak hour review: 2020 segment data was reviewed as the 2021-2023 data was not available.
- For the background traffic volumes summary: 2023 DTMR Traffic Census count was used.

SITE ACCESS

The Project will be accessed from the Burnett Highway via a new access location.

The proposed access location will be designed in accordance with the requirements of the Department of Transport and Main Roads, and have sight distances of 297 m, that exceeds the Minimum Safe Intersection Sight Distance requirement of 285 m.

Figure 2. Street View of Proposed Access Location

An access in accordance with the TMR Standard drawing SP-02 which is constructed to the same level as the Bouldercombe Substation is proposed.

Figure 3: Proposed Access Location

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Capricorn BESS Project: Emergency Management

BATTERY TECHNOLOGY

The battery chemistry of the proposed batteries is lithium-iron phosphate (LiFePO4, or simply LFP), which are one of the safest battery chemistries within the industry.

FIRE RISK

Although electrical fires can occur, they are far less likely to with the right measures are in place.

A Hazard Incident Management Plan analysed the credible fire scenarios that may occur at the site, to assess whether the protection measures would be adequate to combat the hazards associated with the site. It was concluded that the designs and proposed fire protection adequately managed the credible fire risks at the site.

FIRE PROTECTION MEASURES

A range of fire protection systems will be fitted, such as:

- Gaseous fire protection system
- Thermal detection
- Smoke detection
- Audible and visual alarms
- Fire system emergency start
- Emergency stop
- Water fire safety system
- Gas fire safety system
- Pressure relief valve
- 6 blast panels
- Thermally insulated rockwool top and sides
- Water impoundment

NEXT STEPS

An Environmental Management Plan will be developed to manage potential spills and leaks and erosion and sediment during construction and operation.

A Bushfire Management Plan will be implemented.

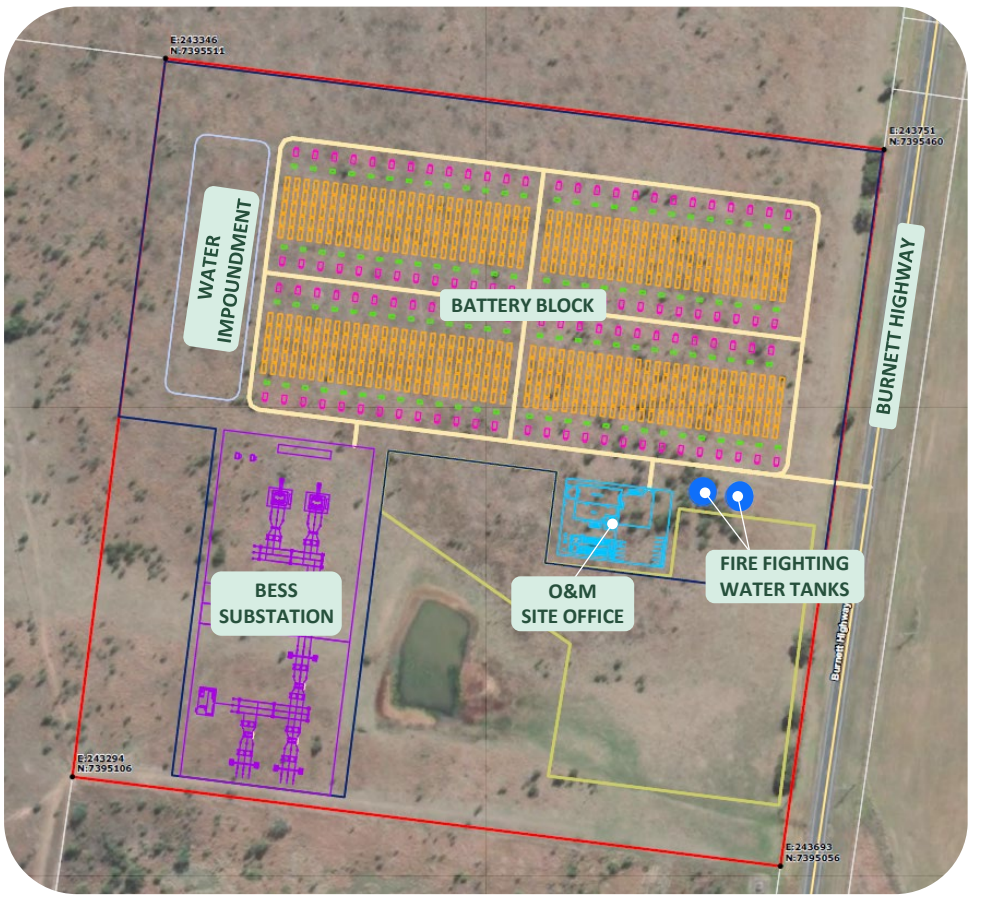

Figure 1. Site Infrastructure

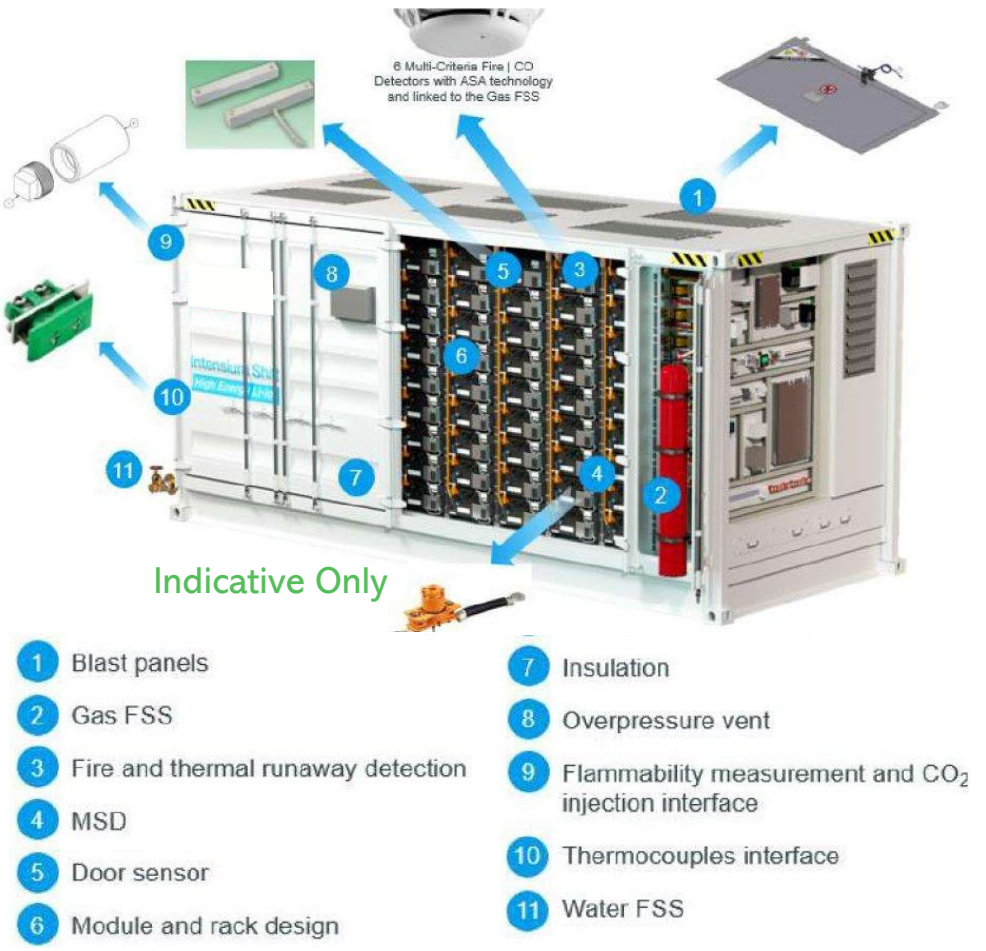

Figure 2. Indicative BESS Fire Protection System Layout

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