

# FIELD KNOCKNAGAEEL

Field Knocknagael would be located directly adjacent to the existing Knocknagael substation. The built infrastructure (batteries, cables, access tracks, etc.) is proposed to cover an area of approximately 7 hectares.

We'll also provide landscaping to reduce visual impacts and we'll provide biodiversity enhancements to ensure we are having a positive ecological effect on the land we use.

Field Knocknagael will be made up of the following components:

- **Battery energy storage units**, which will be used to store the energy from the grid.
- **Power conversion systems** (including inverters and transformers), which convert energy from alternating current to direct current, so that it can be stored by the batteries.
- An **on-site substation**, which either steps up or steps down the voltage of the energy being stored, so that it can be transferred to or from the grid.

- An **underground cable connection** to connect the battery to the existing Knocknagael substation.
- **Site access tracks** to allow vehicles (including emergency vehicles) to safely get around the site.
- **Drainage arrangements** to allow surface water to drain from the site at the same rate as the existing fields.
- **Site security**, including CCTV, fencing and lighting.
- **Landscaping**, including earth bunds and native species mix planting, to reduce visual impacts and contribute to biodiversity enhancement.





# HOW WE'LL MANAGE THE CONSTRUCTION PROCESS

The construction of Field Knocknagael will involve careful planning and management to minimise disruption to local communities and roads.

Before we start building, we'll develop detailed management plans and agree these with The Highland Council to ensure works are carried out responsibly, and all impacts are reduced as much as possible.

## Construction Environmental Management Plan (CEMP):

Our CEMP will set out procedures and mitigation measures to manage and monitor environmental impacts during construction such as:

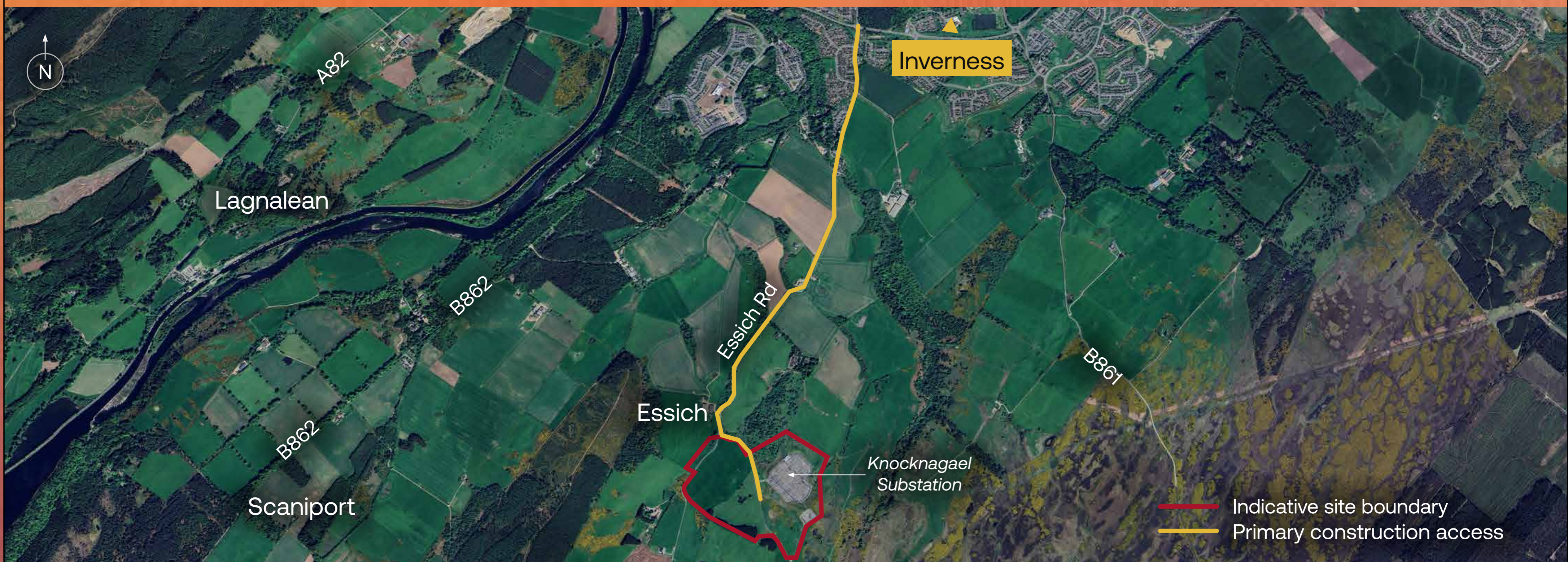
- Noise, dust and vibration controls
- Measures to prevent mud and stone on roads
- Waste management and recycling
- Pollution prevention guidance
- Ecological protection.

We'll work closely with The Highland Council and other stakeholders to agree the detailed CEMP requirements.

## Construction Traffic Management Plan (CTMP):

Our CTMP will be implemented to effectively manage all construction traffic to and from the site, including:

- Agreed routes for construction vehicles to avoid sensitive areas;
- Agreed construction working hours;
- Details of any road upgrade or widening works if required;
- A procedure for monitoring road conditions and remediation works if required;
- Measures to encourage worker vehicles to avoid peak times or vehicle share where possible;
- Contact details to raise any road safety issues; and
- Coordination with any other planned developments in the area to manage cumulative traffic impacts.





# FIRE SAFETY MANAGEMENT

Safety is our top priority. We take a comprehensive approach to fire risk management through careful design, operating procedures, and emergency planning.

## Battery Design and Safety Systems

- Batteries must be compliant with all relevant fire codes and safety standards, and we'll only use batteries with the highest fire safety ratings and performance.
- Battery containers are fitted with early fault and fire detection technology, internal fire suppression systems, and reinforced casing to ensure fires do not spread to other units.
- Appropriate separation distances are provided between battery strings, access roads, and surrounding features (e.g. security fencing, planting schemes) to ensure firebreaks are in place.

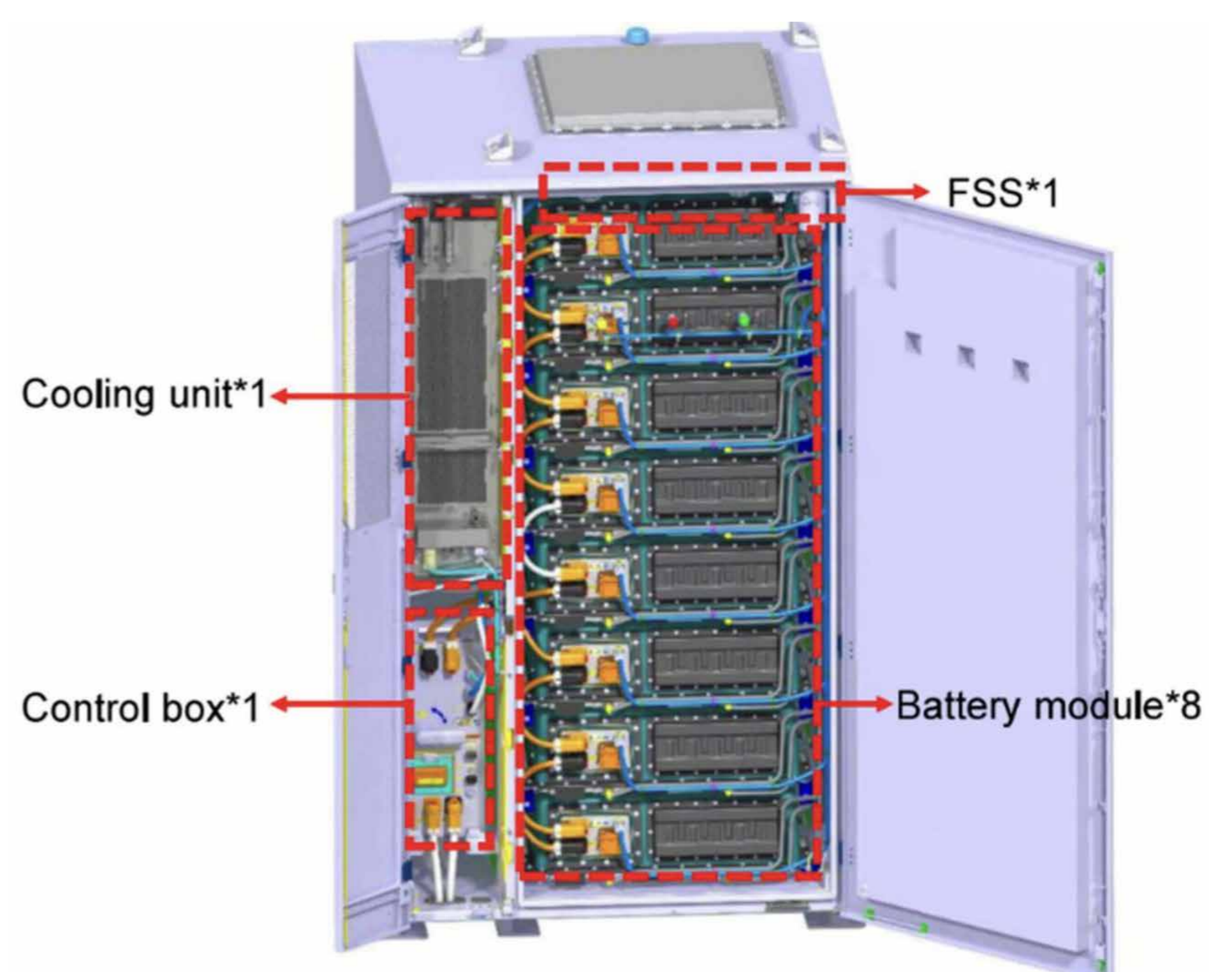
## Emergency Planning and Response

- A detailed Battery Safety Management Plan is being developed, which will be agreed with relevant authorities before the project starts operating. This identifies potential hazards and associated safety mechanisms for the long-term operation of the Project. An outline version of the Plan will be submitted with the planning application.
- Field is continuing to engage with the National Fire Chiefs Council and Scottish Fire and Rescue Service across our portfolio of projects, including regular on-site consultations and site familiarisation visits. An Emergency Response Plan will be prepared in consultation with the Fire and Rescue Service for use in the unlikely event that there is an emergency on site.

## Construction & Operation Oversight

- 24-hour surveillance and fault detection systems will ensure any faults are identified, isolated and responded to as quickly as possible, including de-energisation when necessary.
- Field will undertake routine site inspections, maintenance and testing throughout the life of the project.

Field is committed to implementing industry best practices and working closely with fire authorities to ensure the safety of our facilities, our staff, and local communities. We welcome any further inputs as we finalise the fire safety approach for Field Knocknagael.





# OUR OTHER BATTERY SITES

Field's experienced team manages each battery storage project's full lifecycle. With projects going through every stage of development and operation, we apply learnings and best practices across our portfolio to ensure reliable, safe and sustainable facilities. A brief overview of three of these sites is included below:



## Field Auchteraw

50 MW, near Fort Augustus  
*In construction*

Field Auchteraw will be capable of producing up to 50 MW of electricity once operational. Located near Fort Augustus, Field is continuing to work closely with The Highland Council, with the project expected to start operating in late-2024.

The project demonstrates Field's expertise in developing battery storage on greenfield sites while prioritising landscaping and biodiversity measures to complement the surrounding environment. We've worked closely with the local community to manage traffic impacts; including implementing a one-way system for construction traffic to half the number of construction vehicles on a sensitive local road in response to concerns raised by the community.



## Field Oldham

20 MW, near Manchester  
*Operational*

Field Oldham started operating in 2022 and can produce up to 20 MW of electricity. The site is located in a warehouse in the Greater Manchester region.



## Field Gerrards Cross

20 MW, Buckinghamshire  
*Operational*

Field Gerrards Cross started operating in April 2024 and can produce up to 20 MW of electricity. The site occupies an existing industrial site alongside an operating water treatment plant.

With automated systems, industry-leading safety protocols, and 24/7 remote monitoring in place, Field Gerrards Cross and Field Oldham highlight our commitment to safe, responsible operations.



# WHAT OUR BATTERIES WILL LOOK LIKE

Our battery units will be housed in secure cabinets, similar to those shown in the images below, which were taken at our Field Newport site. These allow for a modular design where individual battery racks can be easily accessed during routine inspections and maintenance.

Field Knocknagael will comprise multiple battery cabinets arranged in rows, known as ‘strings’. These will be connected via underground cables to other important electrical infrastructure like transformers, an on-site substation, and underground cabling to the main grid connection point at the existing Knocknagael substation.

To reduce visual impacts of the proposal, the batteries will be set back from roads and properties as much as possible. Earthworks and native landscaping will also be incorporated to help screen and soften views of the site.

The visualisation shows how Field Knocknagael storage could look from surrounding viewpoints, once operational. While the infrastructure will be visible, our design aims to minimise impacts on the local landscape as much as possible.





# FREQUENTLY ASKED QUESTIONS

## **When will Field Knocknagael be built?**

We'll be submitting our planning application to the Scottish Government in Summer 2024. If we are granted consent, we would look to start construction in 2027 and it will take about two years to complete construction.

## **How will our local community benefit?**

We're currently working with the National Schools Partnership\* to deliver a community-based programme in local schools to encourage and equip young people to explore careers in STEM and renewable energy. Field will work with local schools to provide information to students about how to build a career in the renewable energy sector.

## **Will the project impact trees or ecology?**

Tree and hedgerow removal will be avoided where possible. At Knocknagael, there are several sensitive trees located on-site which we have carefully designed around so that these trees can be retained. We also carry out full ecological surveys to identify any potential ecological impacts, and we provide biodiversity enhancements to compensate for any impacts that do occur. This is typically through the planting of native species as part of our landscaping, which will also help to minimise any potential visual impacts.

## **Will the project impact archaeology?**

There are several non-designated heritage assets located across the site, comprising possible hut circles. Whilst we hope to avoid these areas if possible, excavation may be required. If excavation is required, we'll work closely with The Highland Council to ensure artefacts are appropriately investigated and recorded in accordance with relevant protocols.

## **Will the project cause flooding or impact drains?**

Because our projects contain electrically sensitive equipment, flood risk is a key consideration during site selection and project design. We carry out detailed flood modelling to ensure equipment is located outside or above any modelled flood depths, which also ensures there is no increase to flood risk on or off-site.

We'll also build appropriate drainage infrastructure to ensure surface water run-off is managed across the site. These will include sustainable drainage solutions which can collect and discharge water into existing drains at an appropriate run-off rate.

## **How are cumulative impacts assessed with other developments in the area?**

We are aware of several other developments proposed in the surrounding area. We are working with other developers where possible to ensure that cumulative impacts, particularly in relation to noise, traffic and visual impacts, are appropriately managed. The final details of these mitigation measures will be agreed before construction starts, when the exact timelines for all projects are known. We welcome any feedback or knowledge from the local community about other proposals you are aware of, so that we can ensure these are appropriately considered.

## **Are the batteries safe?**

Grid-scale batteries are safe facilities. We work hard throughout site design, construction and into operation to ensure the safety of our sites. We only use batteries that have best-in-class fire safety performance and will be compliant with all relevant fire safety standards.

The batteries will be constantly monitored and in the unlikely event that a fire does occur, the facility will employ automatic fire detection and suppression systems.

We're also working with the Scottish Fire and Rescue Service to ensure suitable emergency response procedures are in place, including a Battery Safety Management Plan.

## **How will the site security be managed?**

The security and safety of our battery storage facilities is extremely important. Field Knocknagael will have robust security measures in place, including:

- Perimeter fencing and secure gated access to prevent unauthorized entry
- 24/7 CCTV monitoring of the site
- Appropriate security lighting to aid CCTV coverage
- Routine inspections and maintenance by Field's operational staff.



# FREQUENTLY ASKED QUESTIONS

**How will noise impacts be assessed and managed?**

The main noise associated with batteries are the cooling fans, which keep the batteries from overheating. For Field Knocknagael, we'll carry out a detailed noise assessment to model the predicted noise levels from the operational battery equipment against existing background levels.

This assessment will identify any potential noise impacts on nearby noise-sensitive receptors like homes. Where potential impacts are identified, we'll incorporate mitigation measures into the design, such as acoustic fencing, earth bunding, and careful orientation of equipment, to ensure operational noise meets relevant regulations.

During construction, noise will also be carefully managed and monitored through our Construction Environmental Management Plan to minimise temporary disturbances to local communities.

**How does this help Scotland's energy security?**

Scotland has set an ambitious target of becoming net zero by 2045. Achieving this will require a massive increase in renewable energy generation and widespread electrification of transport and heating.

However, this transition also creates challenges around managing Scotland's energy security and resilience as we need more electricity and become more reliant on weather dependent renewable resources like wind and solar power..

Projects like Field Knocknagael act as giant electric reservoirs, charging up when renewable energy is being produced, ensuring a steady supply of electricity, regardless of the variable renewable conditions. They allow more renewable energy to be used and reducing dependence on fossil fuels.

By storing abundant Scottish renewable energy for when it's needed, batteries will play a vital role in keeping the lights on across the country as we decarbonise towards a net-zero future.

**Why do we need batteries in this area?**

The Highlands has an abundance of renewable energy resources like wind, hydro and tidal power.

Locating the batteries in close proximity to the Highlands' renewable assets like wind farms ensures this stored energy can be utilised as efficiently as possible, with minimal transmission losses.

At a local level, we've selected a site as close as possible to the existing Knocknagael substation, which prevents the need for unnecessarily long and intrusive grid connection cables or overhead lines.

**Will the project impact local traffic?**

Once operational, the project will have minimal impact on local traffic, with only occasional visits required for maintenance.

When the project is being built, construction traffic will be managed through a Construction Traffic Management Plan. This will include details of construction traffic numbers, vehicle routing and working hours. As with all aspects of the development, we welcome input from the local community to help reduce any impact on local roads where possible.

A pre-condition survey of the local roads will be carried out to assess the ability of the local road network to accommodate the construction, operational and maintenance traffic associated with the project and any necessary upgrade works will be undertaken ahead of construction. Remediation works will be carried out post-construction if required.