

West of Beaully Asset Replacement Projects October 2023

Feedback event on new replacement substations at Deanie
and Culligran

Consultation event for alternative replacement substation
sites at Aigas and Kilmorack

The events will be
taking place on:

Monday 23rd October
5pm-8pm

Cannich Village Hall IV4 7LY
(Deanie, Culligran,
Glen Strathfarrar VISTA)

Tuesday 24th October
11am-1pm

Cannich Village Hall IV4 7LY
(Deanie, Culligran,
Glen Strathfarrar VISTA)

Wednesday 25th October
2pm-7pm

Kilmorack Hall IV4 7AG
(Aigas and Kilmorack)



Scottish & Southern
Electricity Networks

TRANSMISSION

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Who we are

We are SSEN Transmission, the trading name for Scottish Hydro Electric Transmission. We are responsible for the electricity transmission network in the north of Scotland, maintaining and investing in the high voltage 132kV, 220kV, 275kV and 400kV electricity transmission network.



Our network consists of underground and subsea cables, overhead lines on wooden poles or steel towers, and electricity substations. It extends over a quarter of the UK's land mass, crossing some of its most challenging terrain.

Our first priority is to provide a safe and reliable supply of electricity to our communities. We do this by taking the electricity from generators and transporting it at high voltages over long distances through our transmission network for onward distribution to homes and businesses in villages, towns and cities.

Our operating area is home to vast renewable energy resources and this is being harnessed by wind, hydro and marine generation.

Working closely with National Grid ESO, the electricity system operator for Great Britain, we enable these electricity generators to connect to the transmission system by providing their connections and allowing the electricity generated by them to be transported to areas of demand across the country.

Scotland's transmission network has a strategic role to play in supporting delivery of the UK and Scotland's Net Zero targets.

We are already a mass exporter of renewable energy, with around two thirds of power generated in our network area exported to demand centres further south. By 2050, the north of Scotland is expected to need 40GW of low carbon energy capacity to support Net Zero delivery. We currently have around 8GW of renewable generation connected in the north of Scotland.

As a natural monopoly, we are closely regulated by the GB energy regulator, Ofgem, who determines how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network in the north of Scotland. These costs are shared between all those using the transmission system, including generation developers and electricity consumers.

Following a minority stake sale which completed in November 2022, we are now owned 75% by SSE plc and 25% by Ontario Teachers' Pension Plan Board.

As a stakeholder-led business, SSEN Transmission is committed to inclusive stakeholder engagement, and we conduct this at an 'Advanced' level as assessed by AccountAbility, the international consulting and standards firm.

What are the West of Beaulay Asset Replacement Projects and why are they needed?

Project need

The proposed West of Beaulay Asset Replacement Projects include a total of four substations requiring upgrading at Deanie, Culligran, Aigas and Kilmorack. The need for the projects is being driven by operational requirements and asset condition assessments of the existing substations serving the hydro power stations at each location. The existing substations were built in the 1960s, connecting the hydroelectric generation assets to our transmission network, which are coming to the end of their operational life. The deterioration in condition poses a risk of failure, resulting in the hydro power stations unable to distribute renewable power and risking reliability of electricity supply to customers.

Project overview

The four substations requiring replacement are separate projects, but due to relative geographical relationships and delivery programmes, they were initially progressed collectively through the site selection process (see page 6 for more information on the site selection process). The new substations are required to be located on sites outwith the existing compounds (but need to be within 1km to manage electrical losses) due to modern transformers requiring more space, health and safety standards and the challenge to keep the hydro power stations connected to the network during the project timeline.

Public consultations were held covering the four replacement substation sites in June and October/November 2022. Following feedback from our stakeholders, including the local community, we decided to pursue alternative sites for the replacement substations at Aigas and Kilmorack.

The events being held in October 2023 are:

- Feedback events for Deanie and Culligran (final consultation on proposed site options D and C respectively).
- A voluntary consultation event for Aigas (the new optimal site option is under 2 hectares triggering local planning application requirements, with this additional voluntary consultation event taking place).
- First of two statutory consultation events for Kilmorack (the revised optimal site option is over 2 hectares, triggering a major planning application threshold with two new public consultation events required. The second event will be taking place in January 2024 (tbc).

See page 5 for more information on our consultation process.

The following elements are anticipated requirements for each of the four new substations:

- Design and construction of a new offline substation compound with a single 132/11 kilovolt (kV) transformer, with indicative platform sizes of 60m x 55m (not exceeding 48m x 100m for Aigas)
- A new 132kV circuit breaker and disconnecter
- Control building housing 11kV switch gear as well as communications and protection and control equipment, with a maximum height of 5m
- Landscaping and biodiversity requirements
- Permanent access to the sites
- Upgrade of existing/new access tracks and temporary site compounds and construction laydown areas (where required).

Following the construction of the new substations, existing substation structures and equipment shall be decommissioned and may be removed.



Existing external transformer arrangement needing to be replaced (at Deanie & Culligran)



Existing internal transformers needing to be replaced (at Aigas & Kilmorack)

The consultation process

Engagement to date

In June and October/November 2022, we consulted with our stakeholders in Cannich Village Hall and Kilmorack Hall, explaining the need and scope for the four new replacement substations and sought feedback on our initial site selection options. We published a Public Event Summary Report on our project webpage, along with other information presented at these events: www.ssen-transmission.co.uk/projects/west-of-beaulay-asset-replacement-projects/

Following the initial consultation events, the project team has sought to ensure that comments or concerns raised have informed, where possible, the replacement substation locations and primary considerations for the designs as they have progressed. This includes substation layout (indoor/outdoor) design, landscaping enhancement and screening opportunities. Outwith the formal consultation periods and events, we have continued to provide a dedicated webpage for the projects and liaise with a wide range of stakeholders to help inform the development and design.

For transparency, we are continuing to present the four asset replacement projects together to ensure that all local community members are aware of the full extent of the proposals.

What we are sharing with you today

In October 2022, we originally submitted a Proposal of Application Notice (PAN) to The Highland Council for each of the four substations. As part of the formal process, the Scottish Government advise a minimum of two public events take place for 'major' or 'national' scale developments prior to a planning application submission. The first of these statutory events took place in October/November 2022 over two days. Due to feedback received following these initial events (as set out on pages 13 and 19), changes in the substation programmes are outlined below.

Deanie and Culligran

Initial site selection options D and C respectively have continued to be developed and refined. These mark the second and final statutory public consultation events (third overall). This is a feedback event where we are presenting our updated proposed substation designs, informed by stakeholder feedback, and have set out our responses to feedback received to date.



Aigas

Due to feedback received about the initial site selection option F, the project team have pursued an alternative site at a brownfield location (see page 15 for further information). As the site boundary is now below 2 hectares, this substation will be a local planning application and does not require the two statutory public consultation events. Therefore, this is a voluntary event for Aigas, where we are presenting our optimal site option and current design.

Kilmorack

Due to feedback received regarding the initial site selection option B, the project team have pursued an alternative site (see page 17 for further information). As the site boundary is above 2 hectares, this substation will be a major planning application and will follow the formal PAN process described above. This event is the first of two statutory public consultation events for Kilmorack where we are presenting a new optimal site option and initial design. We welcome feedback (**feedback form is at the back of this booklet, closing date 5pm Wednesday 22nd November**) following the event to help inform further refinement before the second statutory public consultation for Kilmorack.

Substation site selection process

Overview of site selection process

SSEN Transmission has developed and implemented a formal process for the selection of sites for new substations of 132kV and above. The main aim of the process is to provide a consistent approach to the selection of new substation sites, underpinned by our statutory obligations to:

'Develop and maintain an efficient, coordinated and economical electricity transmission system in its licenced area' and in so doing, to 'have regard to the desirability of preserving the natural beauty, of conserving flora, fauna and geological and physiographical features of special interest and protecting sites, buildings and objects of architectural, historic or archaeological interest; and do what we reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects' (Electricity Act 1989, Section 9 (2) a and b).

Our site selection process ensures the design, consenting, construction and operation of a substation is done in a manner that is technically feasible and financially viable whilst, on balance, creating the least disturbance during construction and operation to the environment and the people who live, work and use the area for recreation.

The West of Beaulieu Asset Replacement Projects are currently at Stage 2 - detailed site selection.

For most new substation projects following pre-site selection activities, the approach follows two principal stages, each iterative and increasing in detail and resolution; bringing cost, technical and environmental considerations together in a way which seeks the optimal balance at both stages. This staged process leads to the identification of a finalised proposed substation site, which will be taken forward for planning consent.

The key site selection stages are:

Pre-site selection activities

The starting point in all substation site selection projects is to establish the need for the project and to select an optimum engineering option to deliver it. This process will be triggered by the preparation of several internal assessments and documents.

Stage 1: initial site screening

This stage seeks to identify technically feasible, economically viable and environmentally acceptable site options within a defined area. The search area may vary depending on terrain, other infrastructure, designated areas and features, and connection options or electrical loss tolerances. The aim is to identify several potential sites which can be initially assessed for suitability, with an optimal site identified.

Stage 2: detailed site selection

This stage seeks to confirm and thereafter finalise and refine the optimal substation site options. This includes seeking to avoid physical, environmental and people amenity constraints (where possible), whilst remaining acceptable to stakeholders and economically viable; all whilst taking into account physical engineering and connection requirements. The four sites have been subject to EIA screening.

Following this current public and associated stakeholder consultation (undertaken at all four sites), the optimal site options being pursued will be updated to include any feedback and feasible modifications and refinements reflected in advance of a planning application submission.

The planning application process

The outcome of each substation site selection process will culminate in seeking consent under the Town and Country Planning (Scotland) Act. Each application will identify:

- The site boundary (the Planning Red Site Line Boundary – see pages 9, 11, 16 and 18) including any access routes (up to the public road).
- The proposed development in relation to the site boundary, with dimensions of all permanent structures, buildings, perimeter fencing, and any key drainage features (SuDS pond) and electrical features, such as transformers.
- Any required hard and soft landscape planting proposals (both in situ and remote to the proposed site) will also be identified and detailed as part of each planning submission.

Environmental Impact Assessment

In the case of Deanie and Culligran, following screening, the application will be subject to Environmental Impact Assessment (EIA) under the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Should the proposed developments at Aigas and Kilmorack be deemed non-EIA (through development size/scale or number and significance of potential environmental effects), a voluntary Environmental Appraisal (EA) will be carried out and submitted in support of the application.

Engineering and economic considerations

Our Transmission Operators licence requires us to provide best value for customers and GB consumers. As a natural monopoly, SSEN Transmission are closely regulated by the GB energy regulator Office of Gas and Electricity Markets (Ofgem), who determine how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network.

These costs are shared between all those using the transmission system, including generation developers and electricity consumers. We therefore work to strict price controls which means the following engineering and economic considerations form a key part of our site selection process:

Construction

The costs and practicalities associated with constructing new platforms can vary considerably with location, depending on ground conditions, topography and underlying geology.

This means considering access and delivery routes, space for laydown and construction compounds, alongside consideration of future use. The topography and underlying ground conditions dictate how much material must be removed and moved to create a level site with a suitable base. Importing and exporting large quantities of aggregates and spoil is expensive and is not environmentally desirable due to impacts associated with transport. We can also use topography to our advantage, utilising existing ridges, mounds and slopes to provide screening for the site. This can reduce the amount of additional hard and soft landscaping required.

Operations

Our sites will be operational for a long time and will require ongoing maintenance and repairs by our Operations Team.

They need to be able to access the site easily and safely in all weathers. More exposed sites will likely need more maintenance during their life. In addition, where we have created or enhanced local habitats, we take on the responsibility for long term maintenance of landscaping to ensure it is successful.

Any potential impacts to the operation of the existing network and security of supply for our customers (both demand and generation) must be carefully considered and minimised where possible.

Connections

Each new substation requires to be connected to both the affected existing power station and 132kV overhead lines, so proximity to both of these is desirable.

The further away from these points of connection the identified site is, the greater the engineering challenges and cost as more infrastructure is required to be installed. Underground cables, whilst less visually intrusive, are more expensive than equivalent overhead lines.

By minimising the 11kV cable route lengths, we are able to make more efficient use of the renewable energy that is generated at each hydro-power station.

Given the fixed location of the power stations, reducing any new overhead infrastructure is a key consideration.

Forestry and biodiversity

The cost and environmental impacts of felling trees and any compensatory planting must be factored into the assessment.

SSEN Transmission is committed to achieving a biodiversity net gain of 10% on projects. Choosing a site with more tree felling or in more ecologically rich habitats will incur greater costs, both to remove the trees and then provide compensatory planting and habitat creation/enhancements.

Noise mitigation/technology

The plant and equipment used in the construction and connection of each substation will vary in cost.

Site location can drive the use of alternative technologies, driven by factors such as wind speed, altitude, proximity to coast etc. The available footprint may also dictate the use of alternative technologies in order to fit the required plant and equipment, which can come at a price.

Some plant and equipment may also require to be housed indoors at an additional cost. The choices between cable and overhead line in connecting the site with the wider network will also affect the cost of the project.

It is unlikely that any significant noise mitigation will be required across the four sites, due to the relatively small size of the transformers and surrounding background noise levels relative to sensitive noise receptors.

However, should operational levels and background noise modelling identify a need, then mitigation would be in the form of enclosures or walls that are designed to absorb any noise above agreed tolerable levels (in line with British Standards (BS)).

Environmental and community considerations

The initial optimal site options at Aigas and Kilmorack were revised due to concerns and feedback from stakeholders during consultation. For Aigas, this related to flood risk potential, landscape and visual impacts, landowners, and local community concerns. For Kilmorack, concerns were raised regarding impacts on the existing landscape character, wider landscape and visual impact, cultural heritage, and landowners. A decision was therefore made to review and extend the initial search criteria and area. The revised preferred site options are detailed on pages 16-19.

The main areas of assessment during site selection are outlined below. It should be noted that any potential impacts which concern the population have been considered under the umbrella of the "environmental considerations". These include potential impacts on visual amenity, noise, proximity to residential dwellings, recreational receptors and flood risk.

Designated areas

The proposed developments at Deanie and Culligran are located within or close to the Glen Strathfarrar National Scenic Area (NSA), Glen Affric to Strathconon Special Protection Area (SPA), Glen Strathfarrar Site of Special Scientific Interest (SSSI) and Strathglass Special Area of Conservation (SAC). Any mitigation that may be required will be detailed in the EIA reports accompanying the planning applications.

Aigas and Kilmorack are not within any statutory designated sites, and if an EIA is not required by The Highland Council then a voluntary Environmental Appraisal will be submitted alongside the individual planning applications.

Landscape and visual

The appearance of the substations within the landscape and how/where they will be seen has been carefully considered. Site selection has also been guided by effects on nationally valued landscape, with particular consideration of:

- Deanie and Culligran projects in relation to the National Scenic Area and Wild Land Areas
- The importance of Glen Strathfarrar Road Core Path, Public Rights of Way and other recreational access routes in the sensitive landscape
- Landscape character, visual amenity and wider heritage assets (including several listed buildings in and around Kilmorack).

Mitigation is anticipated to include using existing landform features and the creation of sympathetic, hard and soft landscaping, with the natural landform offering opportunities for screening views of the proposed developments from key visual receptors.

Hydrology and geology

The following hydrological aspects have been considered as part of the site selection process for each of the substations:

- Private water supplies
- Groundwater dependent terrestrial ecosystem (GWDTE's)
- Potential for flood risk
- If any designated sites are hydrologically linked to the site.

An appropriate site drainage plan for both the construction and operational phases has been developed to ensure no adverse impacts on the surrounding water environment.

Cultural heritage

There are no designated or non-designated heritage assets within the four proposed developments. This includes:

- World Heritage Sites
- Scheduled Monuments
- Inventory Garden and Designed Landscapes
- Listed Buildings
- Inventory Battlefields.

Land use, access and recreation

All four proposed developments are within an area popular for outdoor pursuits. Core paths and public rights of way are adjacent to Deanie and Culligran proposed development sites.



Golden eagle



Red squirrel

Ecology and ornithology

Several ecology surveys and assessments have been carried out covering:

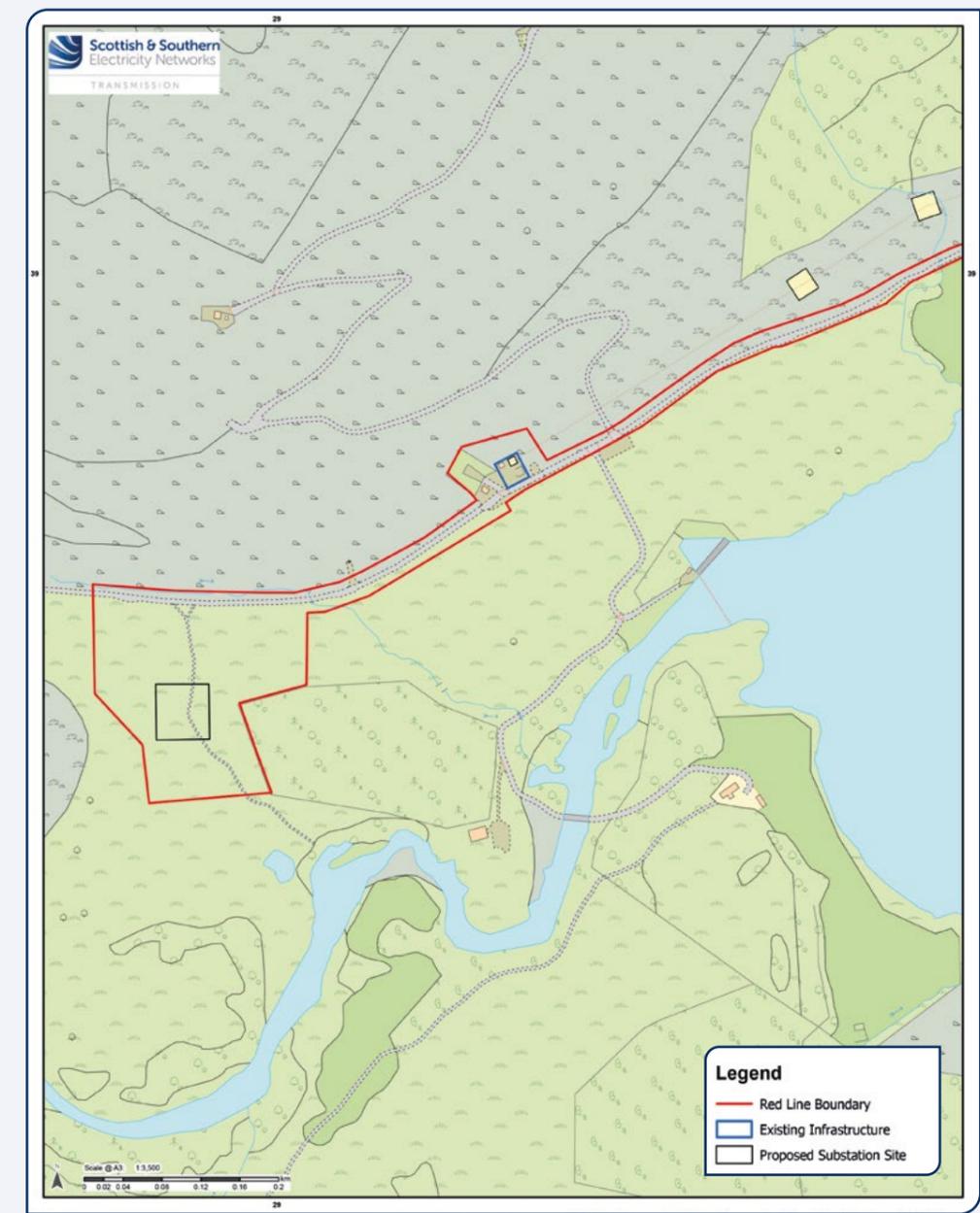
- Habitats, including biodiversity
- Protected species, including suitability for badger, otter, bat, red squirrel and pine marten
- Breeding bird surveys.

Tree felling will be required for the proposed site at Culligran, and possibly minor thinning at Aigas and Kilmorack. All projects will seek to achieve a biodiversity net gain of 10% through habitat improvement and additional compensatory planting at agreed locations.

Proposal for Deanie Substation

A new 132/11kV substation is being proposed in Glen Strathfarrar to replace the existing Deanie Substation, which has reached the end of its operational life. The following elements are included as part of the proposed replacement substation development which now forms the final feedback engagement event:

- Indicative platform size of approximately 60 x 55m
- A new control building (26 x 12 m) with a height of approximately 5.5m
- External Air Insulated Switchgear (AIS) infrastructure with a height of approximately 8m
- Cable connections from the proposed site to the existing Deanie substation and to a new Cable Sealing End, delivered under the Glen Strathfarrar VISTA project
- Hard and soft landscaping and biodiversity requirements
- On-site permanent drainage provisions
- Palisade perimeter fence approximately 2.4m
- The creation of a new permanent access track from the proposed development, which ties into the existing private access track that leads to Deanie Hydro Electric Power Station.



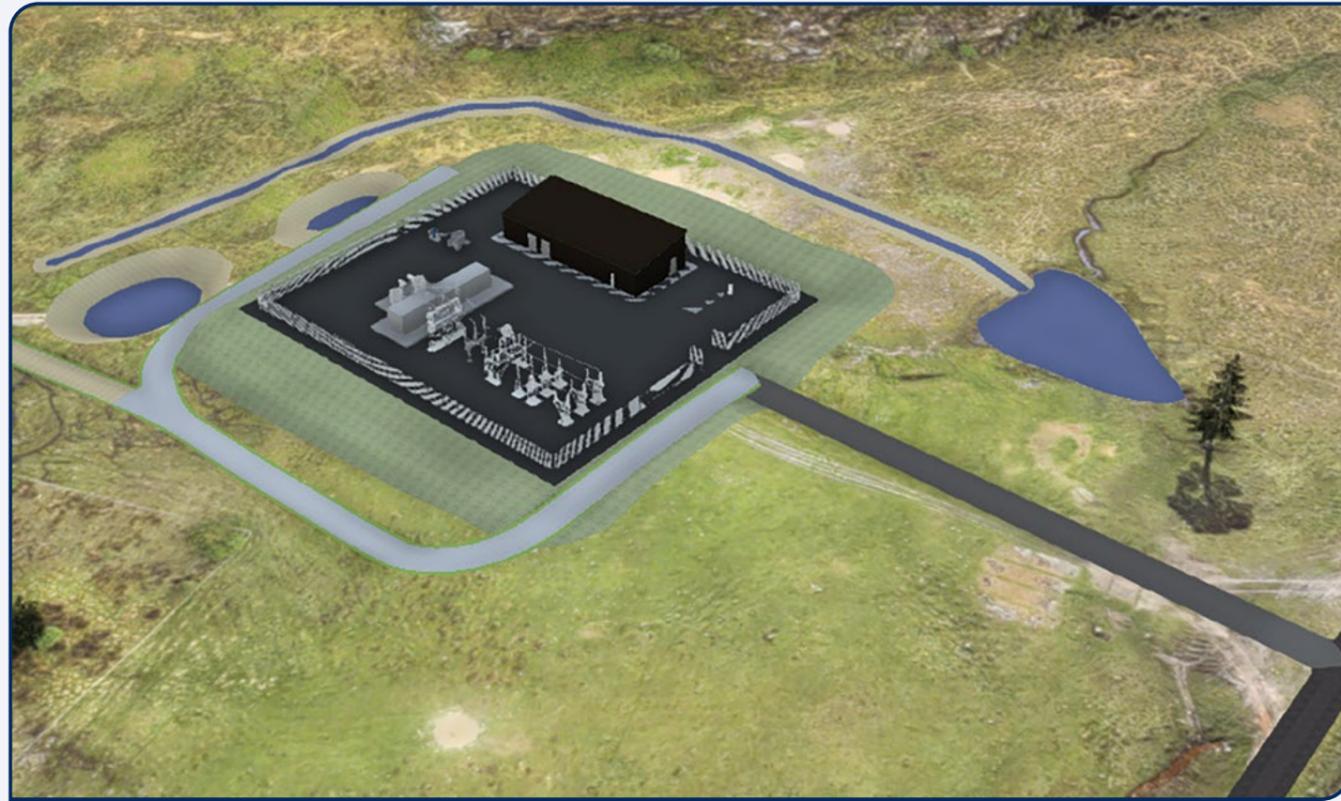
Deanie Substation Location with Red Line Planning Boundary

Glen Strathfarrar VISTA

Approximately 4km of the existing overhead line from the new Deanie Substation to Tower 13 will be undergrounded within Glen Strathfarrar National Scenic Area.

More detail can be found on our website or within the Glen Strathfarrar Information Brochure.

Proposal for Deanie Substation



3D view of Deanie Substation from the South East

Engineering summary

The proposed site will comprise of:

- Platform approximately 3 metres below Glen Strathfarrar road level with drainage including sustainable drainage systems (SuDs)
- Outdoor switchgear including a new 45MVA transformer, control building, as well as an internal road network including car charging points
- 11kV underground cable (UGC)
- Low voltage (LV) power supply
- Redundant SSEN Transmission infrastructure within the existing substation site compound will be decommissioned and removed as applicable.

During the construction phase, the contractors construction compound is proposed to be located adjacent to the Glen Strathfarrar Road, to the north of the proposed site. This is a temporary arrangement and it will be reinstated to its current condition.

Environmental summary

All site options considered had similar environmental constraints in terms of being located within Glen Affric to Strathconon SPA, and in close proximity to Glen Strathfarrar SSSI and Strathglass SAC. The proposed site is not deemed to result in any woodland loss.

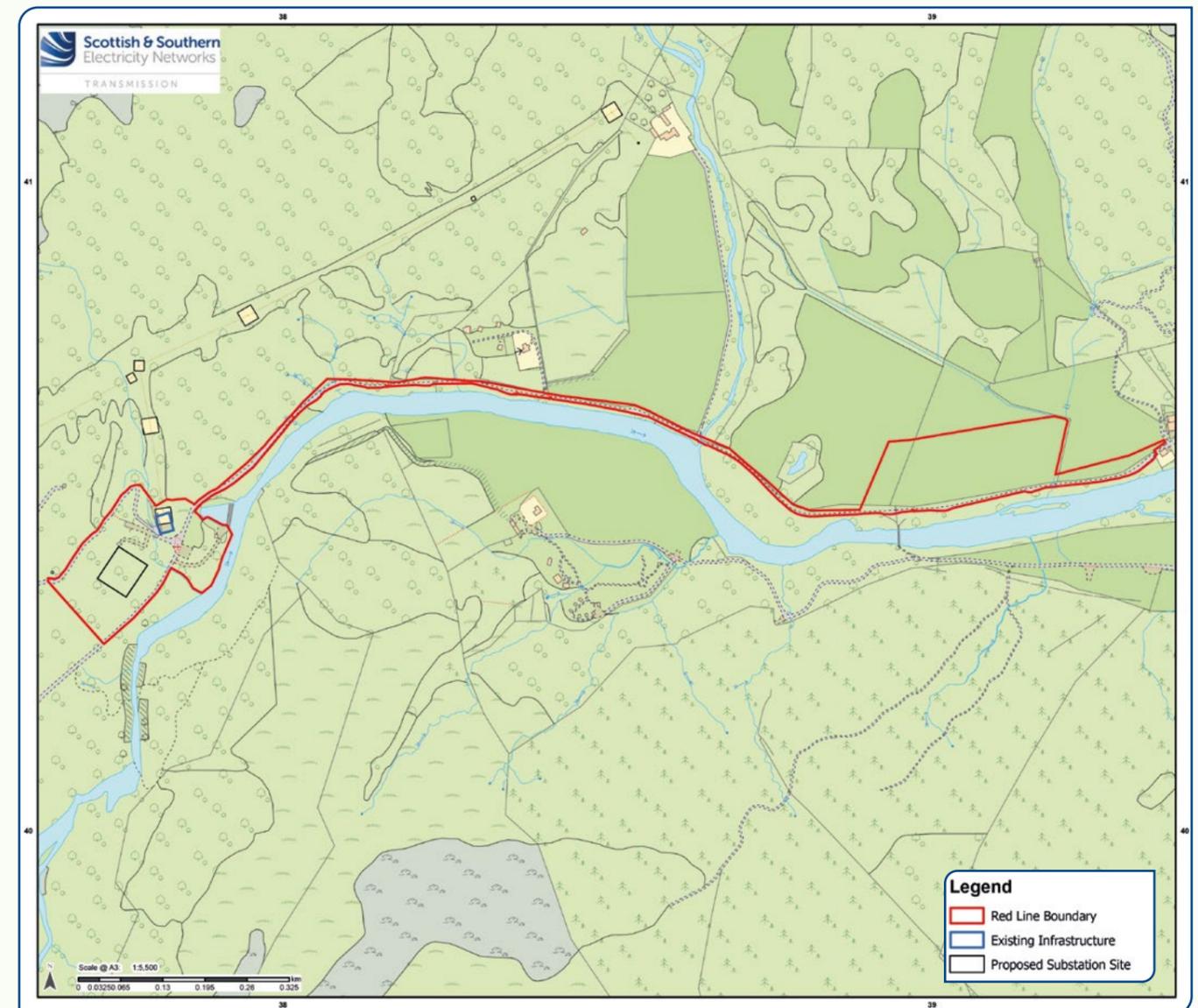
The proposed site is not anticipated to adversely impact the Glen Strathfarrar Road Core Path (Reference IN26.01), which passes to the north of the proposed development (subject to careful construction management). There are no anticipated significant effects on designated or non-designated heritage assets from the proposed site.

Due to the landscape and visual sensitivities associated with the existing substation in proximity to Glen Strathfarrar NSA, the proposed site was considered to be the optimal site with scope for mitigation.

Proposal for Culligran Substation

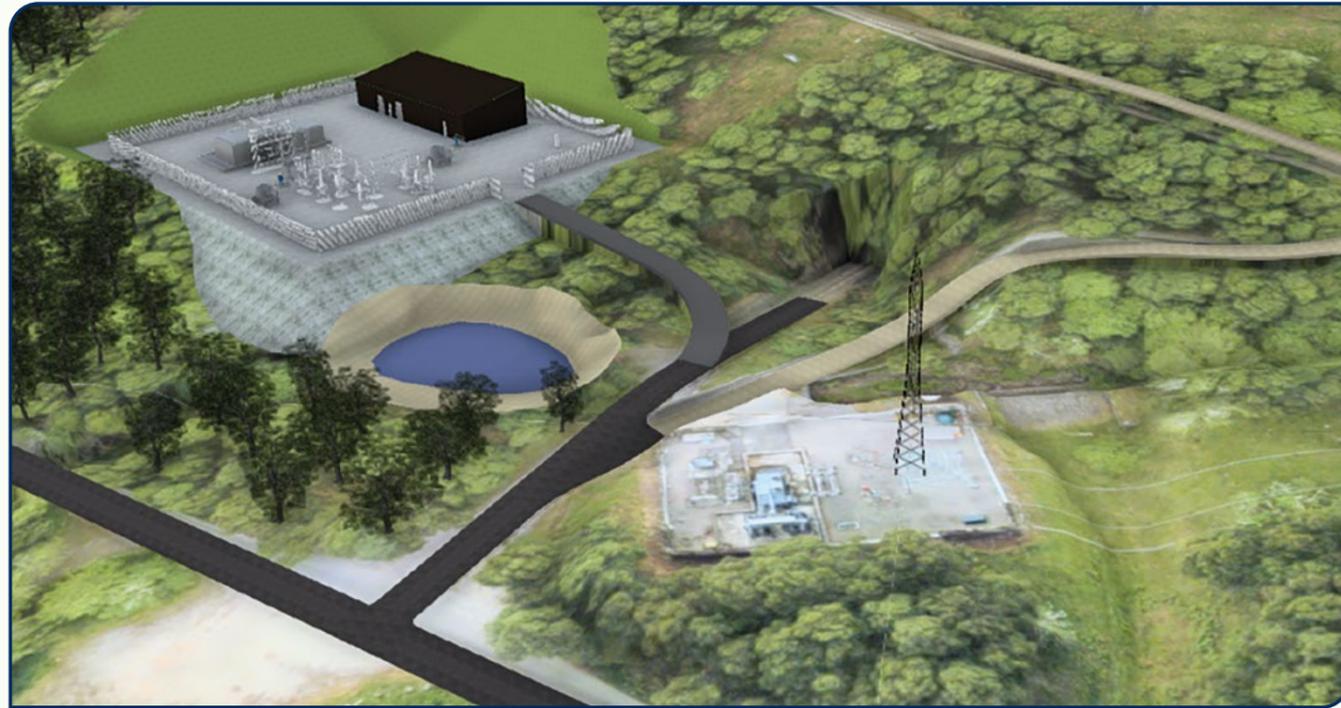
A new 132/11kV substation is being proposed in Glen Strathfarrar to replace the existing Culligran Substation, which has reached the end of its operational life. The replacement substation is required to continue connection of Culligran Hydro Power Station to our transmission network and therefore ensuring reliability of electricity supply to customers. The following elements are included as part of the proposed development which now forms the final feedback engagement event:

- Indicative platform size of approximately 60 x 55m
- A new control building (26 x 12 m) with a height of approximately 5.5m
- External Air Insulated Switchgear (AIS) infrastructure with a height of approximately 8m
- Cable connections from the proposed site down the road access to the power station and a new Cable Sealing End at the existing Culligran substation
- Hard and soft landscaping and biodiversity requirements
- On-site permanent drainage provisions
- Palisade perimeter fence approximately 2.4m
- The upgrade of existing and creation of a new permanent access track from Glen Strathfarrar Road and the existing track to Culligran Substation to connect to the Hydro Power Station.



Culligran Substation Location with Red Line Planning Boundary

Proposal for Culligran Substation



3D view of Culligran Substation from the East

Engineering summary

The proposed site works will comprise:

- Site and tree clearance including material excavation (1:2 gradient slopes to reduce land take and tree clearance)
- New attenuation pond, in order to meet sustainable drainage system (SuDS) requirements
- Outdoor switchgear components and a 30/36 MVA transformer, control building, as well as an internal road network including car charging points
- New 11kV underground cable (UGC) which will route back to the power station along the current tunnel access road
- New 132kV UGC to connect the substation to the existing overhead line terminal tower
- New low voltage (LV) connection.

Redundant SSEN Transmission infrastructure within the existing substation site compound will be decommissioned and removed as applicable.

Some new infrastructure will be installed to allow for transition of the UGC on to the existing terminal tower (which will remain).

The existing 132/11kV transformer is scheduled to be taken away for forensic analysis.

Environmental summary

All site options considered had similar environmental constraints in terms of being located within Glen Affric to Strathconon SPA, Glen Strathfarrar NSA, Glen Strathfarrar SSSI and Strathglass SAC.

The proposed option is the optimal site environmentally due to being sited within lower quality woodland in a sensitive conservation area, which in turn allows for landscape and biodiversity enhancement opportunities. Landscaping proposals are currently in development, and it is anticipated that wider landscape and biodiversity enhancement opportunities will be sought beyond the site boundary in agreement with landowners, NatureScot and The Highland Council.

The engineering requirements for the substation connection have been reviewed and altered to an arrangement which is more environmentally acceptable considering the sensitivity of the area. An UGC will connect the proposed site to the existing substation as opposed to an overhead line.

What you told us at the public events in October/November 2022 – Deanie and Culligran

Following submission of the Proposal of Application Notice (PAN) in October 2022, the first of two rounds of PAN events were held at Kilmorack Hall on Monday 31st October 2022 and Cannich Village Hall on Tuesday 1st November 2022. A total of 43 attendees attended over the 2 days, 35 at Kilmorack and 8 at Cannich.



During the 4-week feedback period which closed on Tuesday 29th November 2022, three pieces of feedback were received; one each for Deanie, Aigas and Kilmorack. The three relevant pieces of feedback commented on the potential landscape and visual impacts and the construction phase of the projects.

For this second round of PAN events (for Deanie and Culligran), we are now sharing the project information, feedback and our responses following the 2022 events.

Below provides a summary of responses and our feedback to these.

Feedback

Comments expressed concern regarding the landscape and visual impacts of the substation on recreational users of the Glen Strathfarrar. Preference is for the proposed substation to be as close to the existing substation as possible.

Comments expressed concern regarding traffic during construction and the effect this will have on tourism and the public interest.

Responses

Following input from external landscape specialists, Deanie substation is proposed to be positioned in front of Tom a' Mhein which provides a natural landscape backdrop to the above ground elements to help mitigate visual impacts and blend in the substation site. The substation platform has also been dropped down to manage and minimise impacts, with hard and soft landscaping proposals being developed in front of the substation (between Substation and Glen access track) to ensure appropriate mitigation achieved.

A traffic management plan is being developed and will be included in the planning application. This will detail the proposed traffic management in the local area for all affected sites and agreed mitigation measures identified to reduce impact on both tourist traffic and local residents.

Timeline and next steps – Deanie and Culligran

Without the valuable feedback gathered during all our engagements, we would be unable to progress these projects with a balanced approach. Feedback gathered during all our engagement has been very useful and has helped inform our proposals and final planning applications.

Our project development team will be carrying out the final refinements and environmental assessments for the proposed substations at Deanie and Culligran. Following these final public events, the Pre-Application Consultation Report will be produced and shared on the project webpage. It will also form part of the two separate planning application submissions in early 2024.

Comments made to SSEN Transmission are not representations to The Highland Council. When SSEN Transmission submit the planning applications there will be an opportunity to make representations on the applications to The Highland Council.

Summer 2022

- Environmental and technical assessments to identify a preferred site and screen for EIA (for each of the substation projects).



29th November 2022

- Deadline for comments for the first PAN event.



October 2023

- Final 'feedback' PAN event for Deanie and Culligran.



Spring 2026

- Completion of West of Beaulay Asset Replacement Projects.



October/November 2022

- Proposal of Application Notices (PAN) submitted to The Highland Council for all four substations
- The first pre-application consultation (PAN) event held over two consecutive days.

Winter 2022 – Summer 2023

- Review of feedback; further refinement of substation design and layout for Deanie and Culligran
- Progression of EIA
- Revision of sites at Aigas and Kilmorack following stakeholder feedback (see timeline for Aigas and Kilmorack on page 21).

Early 2024

- Submission of planning applications to The Highland Council for the proposed substations.



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Additional information

Information will also be made available via the project webpage and social media channels:

Project website:
www.ssen-transmission.co.uk/projects/west-of-beaulay-asset-replacement-projects/

Follow us on Twitter:
@ssetransmission

Follow us on Facebook:
SSEN Community

Aigas site selection search area, options and optimal site

Following feedback from the original consultation events, the project team are aware of concerns around noise and visual impact of the proposed new substations' equipment. In the first instance, all of the proposed sites taken forward to the consenting stage will look to have a baseline noise position undertaken.

There are a number of measures/technologies which will be considered and assessed on a case by case basis, depending on the proposed kit/technology for each site, the distance to audio receptors such as dwellings, wider site context and other environmental sensitivities; with the aim of mitigating any adverse noise impact (as agreed through national standards).

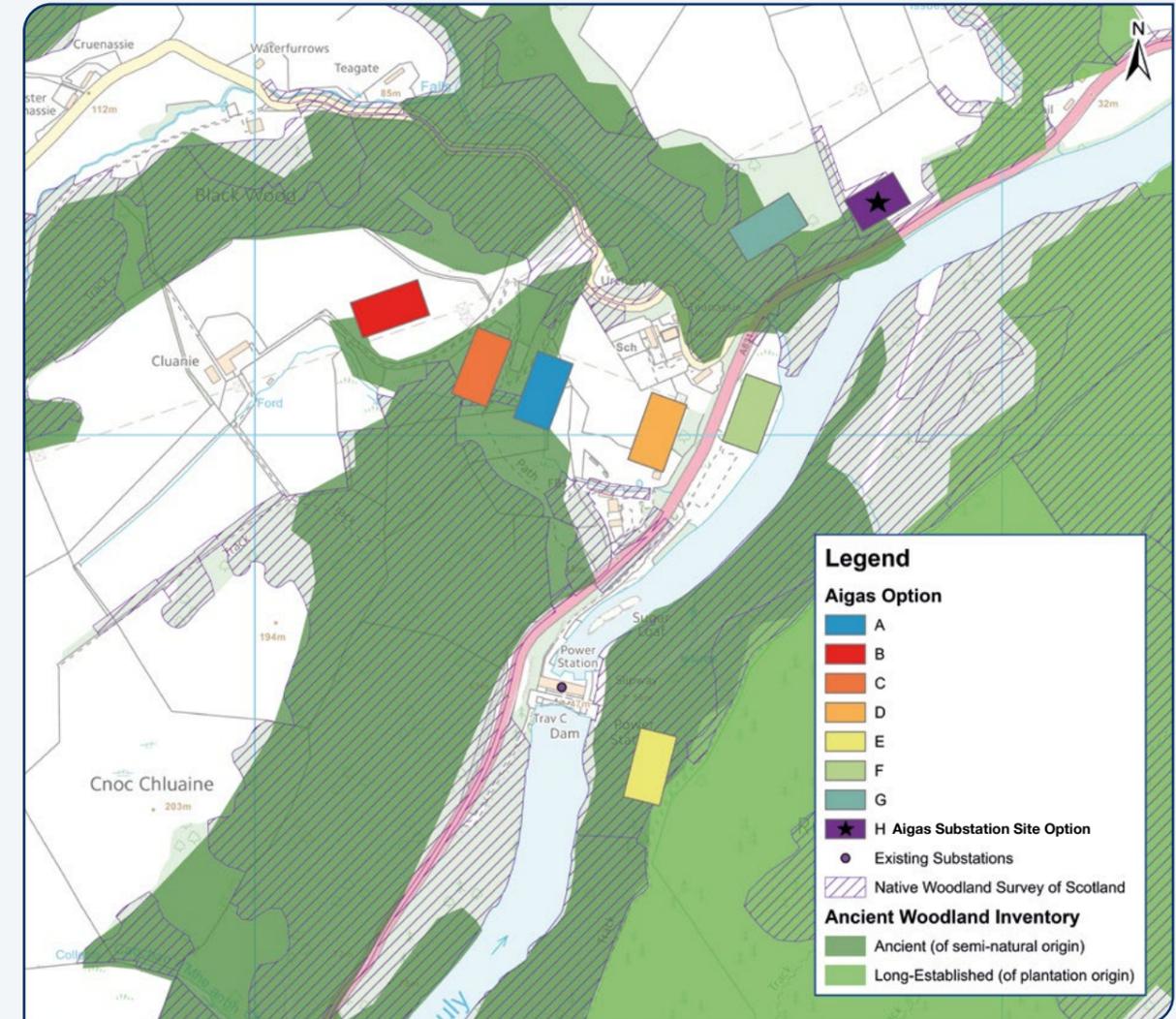
There are limited feasible site options in relative proximity to the existing Aigas Hydro Power Station.

The initial proposed site at Aigas (option F) satisfied the engineering criteria and benefited by being located on the direct route between the fixed positions of the existing cable

sealing end and the power station. However, on balance of the feedback gathered from previous consultation events on this proposal and the technical challenges associated with the site design, the project team reinvestigated site options.

A further site was proposed as option H; this makes use of an existing brownfield site with natural screening in place, further removed from the primary residential receptors and is a less visually intrusive site option.

There are some engineering challenges associated here such as requirement for Horizontal Directional Drilling (HDD) of both 11kV and 132kV cables underneath the A831.



Aigas Substation Site Options Plan

Aigas site selection search area, options and optimal site

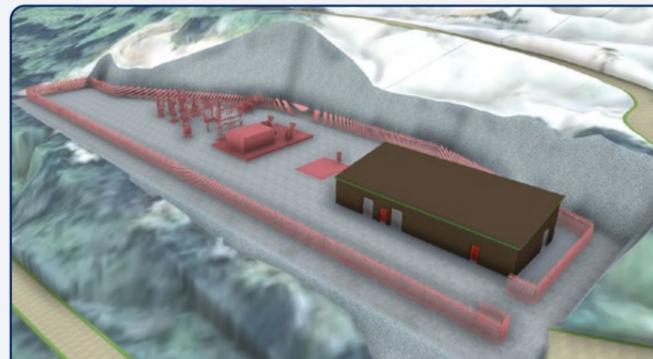
Engineering summary

The proposed site comprises:

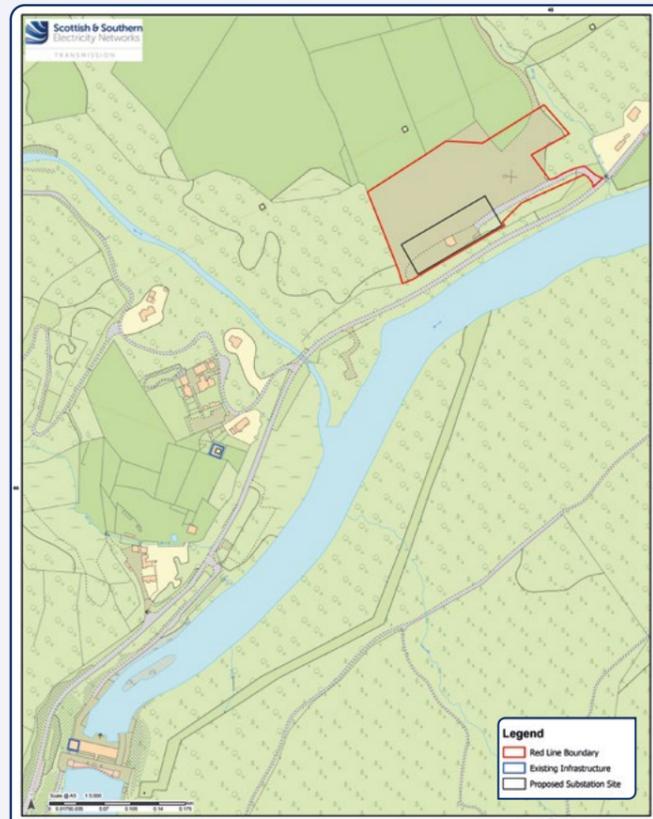
- New retaining structures immediately north of the new substation to aid earthwork requirements
- Outdoor switchgear components and a 30/36 MVA transformer, control building, as well as an internal road network including car charging points
- New 11kV and 132kV underground cable (UGC) from Aigas hydroelectric power station to proposed site. A section of the route will require horizontal directional drilling (HDD) underneath the A831
- New 132kV connection via the existing cable sealing end (CSE) to allow transition to the overhead line network
- Low voltage (LV) connection as backup power supply.

Redundant SSEN Transmission infrastructure within the existing substation site compound, located within the power station, will be decommissioned and removed as applicable.

The existing 132/11kV transformer is scheduled to be taken away for forensic analysis.



3D view of Aigas Substation from the South East



Aigas Substation Location with Red Line Planning Boundary

Environmental summary

As set out, the original site option locations were constrained by the associated electrical losses, resulting in site option F being the optimal site.

Following reconsideration of a wider site area appraisal, including public feedback, flood risk concerns and flexibility on losses occurred; current site option H as presented is considered optimal on environmental and community impact grounds, now including:

- Reuse of a previously brownfield site, minimising additional vegetation and biodiversity habitat losses, with opportunities for landscape and biodiversity enhancement on site boundaries
- Existing flat platform which could accommodate a 'bespoke' substation design
- Good existing natural screening opportunities and overall landscape and visual impact interface from key public viewpoints
- Relatively remote elevated site from main A831 public road which assists in minimising operational noise and public interface impact
- Established existing access off the A831 with additional landscape enhancement opportunities, improving the relationship with the existing AWI designation to the west.

Kilmorack site selection search area, options and optimal site

Kilmorack Substation site options

There are limited feasible site options in relative proximity of the existing Kilmorack Power Station.

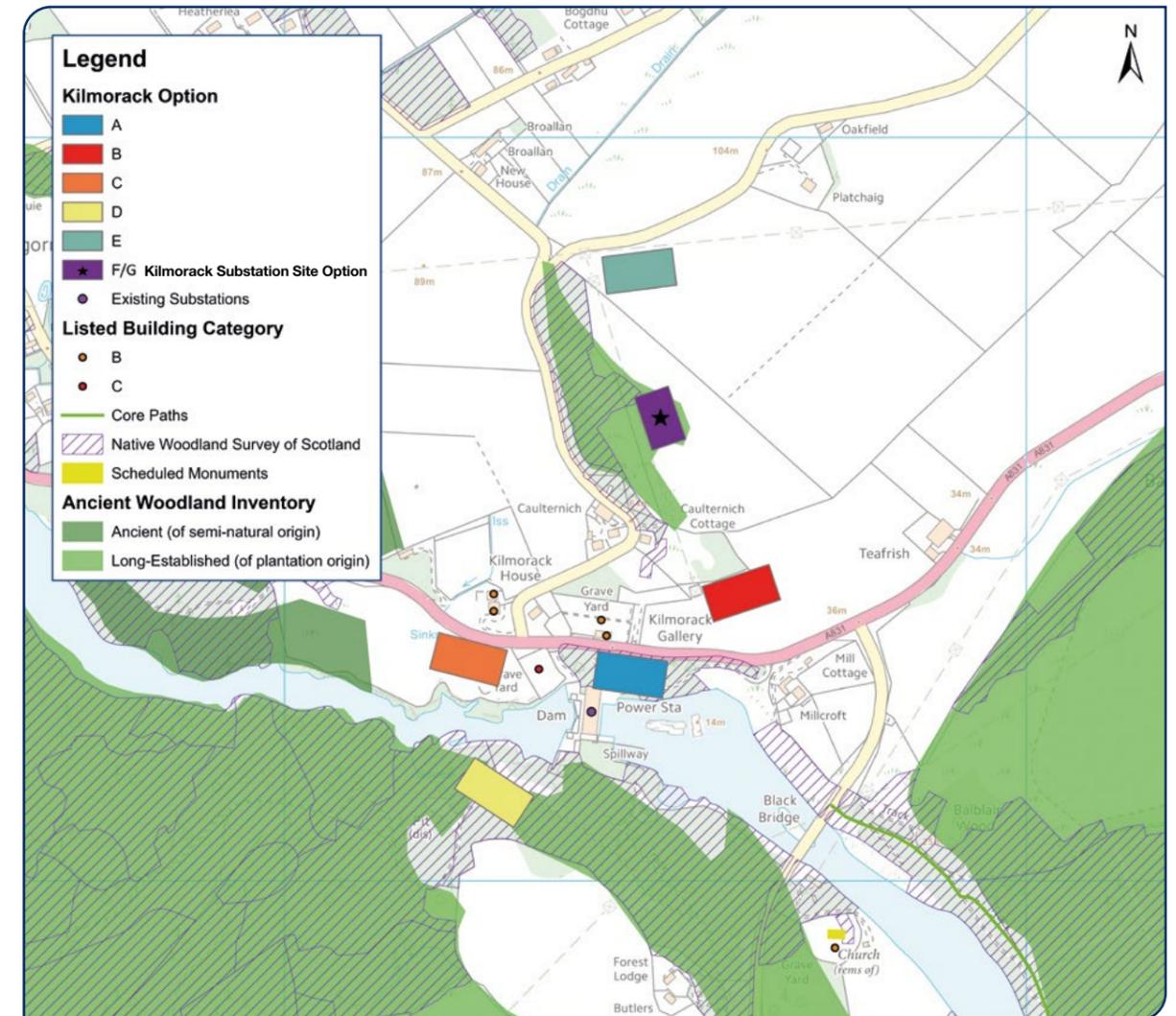
The initial proposed site at Kilmorack was option B which was considered to satisfy the engineering and environmental criteria benefitting by being located on the direct route between the existing cable sealing end and the power station.

an amalgamation of both of these site options which aimed to reduce loss of arable agricultural land.

However, based on the feedback gathered from previous consultation events on this proposal from public, landowner and THC, SSEN Transmission reinvestigated site options.

The proposed site is now positioned directly under the existing OHL spur which will have to be removed in order to facilitate the platform build. This consists of removal of 3 existing steel lattice towers, including the cable sealing end, and the associated conductor spans. This will be required in advance of the start on site and will involve the permanent installation of a new 132kV under ground cable (UGC) and wood pole cable sealing end to the north in order to allow power generation from the hydro site to be maintained.

Two further sites were proposed as options F & G. These sites are located further to the north, away from the A831 (on an upper field), and closer to the existing OHL. The final proposed site was



Kilmorack Substation Site Options Plan

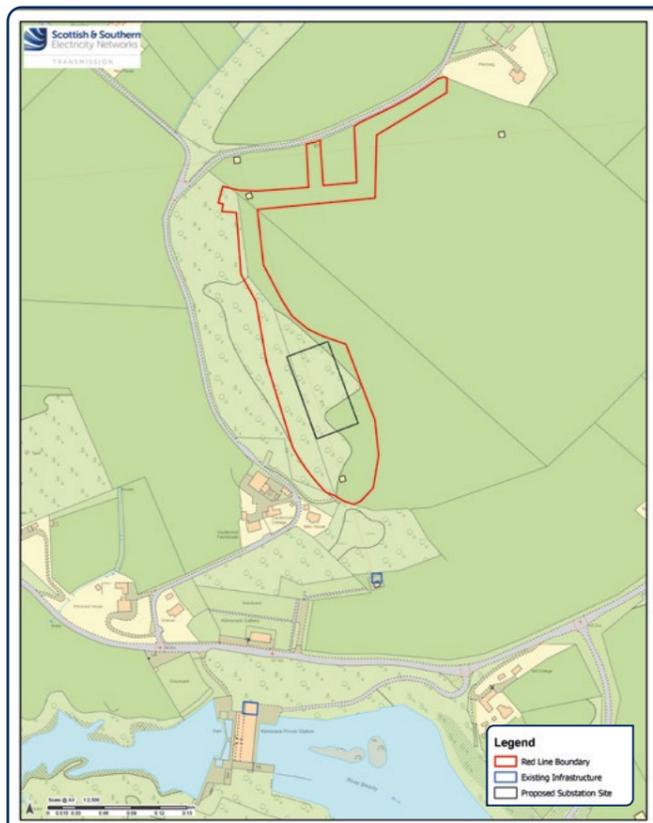
Environmental summary

The revised optimal proposed site has been carefully considered in light of feedback and is forecast to provide alternative environmental opportunities over the previous proposed site, including:

- Improved relationship to neighbouring residential properties for noise and visual interaction
- Operational impacts of the replacement substation calculated to be very light on neighbouring, local road network
- Efficient use of land, combining access with existing consented CSE to the north
- Opportunities for field edge planting to improve existing field edges, supplementing existing field trees and improving the overall landscape framework and fit
- Opportunity to improve planting and biodiversity enhancements on the western periphery
- Careful consideration on the western periphery of the proposed site, including the new CSE which is partly designated as Ancient Woodland Inventory (AWI), in seeking to ensure no adverse impacts or loss of irreplaceable habitats
- The extended UGC route will provide landscape and visual improvements on the skyline following removal of existing CSE and associated towers
- Overall, the landscape character, visual amenity and relationship with heritage assets, including listed buildings have been improved as a result of the reconsidered proposed site for Kilmorack.



3D view of Kilmorack substation from the North



Kilmorack Substation Location with Red Line Planning Boundary

Engineering summary

The proposed site comprises:

- Attenuation ponds to the north and south in order to meet the sustainable drainage system (SuDS) requirements
- Proposed access track
- An indoor switchgear building which contains and a 30/36 MVA transformer, a separate control building, and an internal road network including car charging points
- A new 11kV underground cable (UGC) from the power station to the proposed site
- A new 132kV underground cable (UGC) from the proposed site to the new overhead line cable sealing end (CSE) via the existing terminal tower
- Low voltage (LV) supply for backup power supply.

Redundant SSEN Transmission infrastructure within the existing substation site compound, located within the power station, will be decommissioned and removed as applicable. This will include a section of the overhead line spur and towers 81A, B, and C in order to allow for the construction of the proposed site platform. The existing 132/11kV transformer is scheduled to be taken away for forensic analysis. Enabling works will be required in order to allow the power station to be kept online while the overhead line towers are removed and the proposed site platform construction. This will consist of a temporary 132kV cable and new wooden pole CSE.

The proposed access track to the site also aims to align with the existing field boundary and will aim to make joint use of the permanent access established by the VISTA works CSE located to the north of the proposed site.

What you told us at the public events in October/November 2022 – Aigas and Kilmorack

Following submission of the Proposal of Application Notice (PAN) in October 2022, the first of two rounds of PAN events were held at Kilmorack Hall on Monday 31st October 2022 and Cannich Village Hall on Tuesday 1st November 2022. A total of 43 attendees attended over the 2 days, 35 at Kilmorack and 8 at Cannich.



During the 4-week feedback period which closed on Tuesday 29th November 2022, three pieces of feedback were received; one each for Deanie, Aigas and Kilmorack. Due to the feedback received on initial site options, the preferred sites for both substations at Aigas and Kilmorack have changed, and a revised PAN has been submitted to THC for Kilmorack, with this being the first event. The second feedback event is planned to take place in January 2024 (TBC) following a revised 4-week feedback period.

For Aigas, as the red line boundary for the site is under 2 hectares, a local planning application can be submitted and therefore a revised formal PAN consultation requirements are not technically required. For this first round of events for the updated preferred site options (Aigas and Kilmorack), we are now sharing the project information, original feedback and our responses following the 2022 events. We welcome feedback for the new Kilmorack substation option.

Below provides a summary of responses and our feedback to these.

Feedback

Comments expressed concern regarding flood risk of initial site option F (Aigas).

Comments expressed concern about proximity of initial site option F to local residences. Preference for an alternative site further away from dwellings (Aigas).

Comments expressed concerns about construction noise and disruption during the construction phase, including safety concerns regarding the increase in heavy vehicles on a narrow road and construction materials left on the road (Aigas).

Responses

Comments taken on board and the initial Aigas substation site has been moved to an alternative location.

Comments taken on board and the initial Aigas site has been moved to a location which is less visually intrusive to the local dwellings.

A construction environmental management plan (CEMP) will be required prior to commencing construction and will include detail on working hours.

Also, a construction noise assessment will be undertaken which will detail any noise receptors and appropriate mitigation measures.

A traffic management plan will assess how construction traffic will access the site and proposed routes.

What you told us at the public events in October/November 2022 – Aigas and Kilmorack

Feedback

Comments expressed concerns regarding noise and light pollution once built if initial site option F was chosen. Suggestion to flip the site to have the substation equipment at the dam side to reduce visual impact, and preference to have an indoor arrangement in a green building (Aigas).

Comments expressed concern regarding landscape and visual impacts of initial site option B for users of the A831 and the cemetery. Suggestion for an alternative site that is not as exposed to the public. Preference is for an indoor arrangement in a green/brown building (Kilmorack).

Comments highlighted the existing electricity infrastructure in the area and the landscape and visual effects of this (Kilmorack).

Responses

Aigas site option F has been discounted due to concerns raised during the consultation event.

Unfortunately, there is not adequate space within the existing dam building to site the new equipment to meet modern sizes and safety standards.

The Aigas substation will be an outdoor substation due to space constraints but will have better siting opportunities over option F and will continue to meet indoor standards in terms of operational noise generation.

Kilmorack site option B has been discounted due to concerns raised during the previous consultation event.

Kilmorack option F will now be sited further up the hill, providing improved landscape and visual amenity opportunity, with the proposed Kilmorack substation transformer to be housed indoors.

Kilmorack is proposing to remove a span of existing overhead line. There is also another SSEN transmission project which is removing a section of overhead line to Beaulay substation, providing a net improvement.



Timeline and next steps – Aigas and Kilmorack

Without the valuable feedback gathered during all our engagements, we would be unable to progress these projects with a balanced approach. Feedback gathered during all our engagement has been very useful and has helped inform our proposals and final planning applications.

Aigas

Our project development team will be carrying out the final refinements and environmental assessments for the proposed substation.

Kilmorack

All feedback and comments following the consultation event will be reviewed by the project team and where possible will inform further design refinement of the substation and site. This feedback period is open until 5pm, Wednesday 22nd November 2023. A final feedback event is anticipated in January next year, presenting our proposed site, updating on feedback received and associated final design's (including refinements) prior to planning application submission. Following the final public event, the Pre-Application Consultation Report will be produced and shared on the project webpage. It will also form part of the separate planning application submissions in early 2024. Comments made to SSEN Transmission are not representations to The Highland Council. When SSEN Transmission submit the planning applications there will be an opportunity to make representations on the applications to The Highland Council.

Summer 2022

- Environmental and technical assessments to identify a preferred site and screen for EIA (for each of the substation projects).



29th November 2022

- Deadline for comments for the first PAN event.



October 2023

- First PAN event for revised Kilmorack site
- 4-week feedback period commences for revised Kilmorack site
- Voluntary consultation 'feedback' event for revised Aigas site.



January 2024 (TBC)

- Final 'feedback' PAN event for Kilmorack.



Spring 2026

- Completion of West of Beaulay - Asset Replacement Projects.



October/November 2022

- Proposal of Application Notices (PAN) submitted to The Highland Council for all four substations
- The first pre-application consultation (PAN) event held over two consecutive days.

Winter 2022 – Summer 2023

- Revision of sites at Aigas and Kilmorack following stakeholder feedback
- Aigas site boundary is under 2 hectares so does not need to follow the formal PAN process of requiring two consultation events.

Early 2024

- Submission of planning applications to The Highland Council for the proposed substations.



Sally Cooper
Community Liaison Manager

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07918 470281

Sally Cooper
Scottish and Southern Electricity Networks,
10 Henderson Road,
Inverness, IV1 1SN

Additional information

Information will also be made available via the project webpage and social media channels:

Project website:
www.ssen-transmission.co.uk/projects/west-of-beaulay-asset-replacement-projects/

Follow us on Twitter:
[@ssetransmission](https://twitter.com/ssetransmission)

Follow us on Facebook:
SSEN Community

Your feedback – Aigas

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in **BLOCK CAPITALS**. (Please tick one box per question only)

Q1 Has the requirement for the Aigas Asset Replacement project being clearly explained?

Yes No If No, please comment

Q2 Based on previous stakeholder feedback, the optimum site location has now changed to option H. Do you agree with this?

Yes No If No, please comment

Q3 Are there any additional factors or concerns that you consider important and should be brought to the attention of the project team?

Your feedback – Kilmorack

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in **BLOCK CAPITALS**. (Please tick one box per question only)

Q1 Has the requirement for the Kilmorack Asset Replacement project been clearly explained?

Yes No If No, please comment

Q2 Based on the information provided do you agree with the new proposed site for Kilmorack Substation?

Yes No If No, please comment

Q3 Do you have a preferred colour for the building?

Q4 Are there any additional factors or concerns that you consider important and should be brought to the attention of the project team?



Full name

Address

Telephone

Email

If you would like your comments to remain anonymous please tick this box.

We would like to send you relevant communications via email such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group listed below. If you are happy to receive email updates please opt in by ticking the box below. You can unsubscribe at any time by contacting us at unsubscribe@ssen.co.uk or by clicking on the unsubscribe link that will be at the end of each of our emails.

For information on how we collect and process your data please see our privacy notice available at today's event. This can also be obtained online at www.ssen.co.uk/privacynotice

If you would like to be kept informed of progress on the project please tick this box.

Thank you for taking the time to complete this feedback form.

Please hand your completed form in at the event or alternatively by one of the methods below:

Post: Sally Cooper, Scottish and Southern Electricity Networks, 10 Henderson Road, Inverness, IV1 1SN

Email: sally.cooper@sse.com

Online: www.ssen-transmission.co.uk/projects/west-of-beaully-asset-replacement-projects/

Download: Feedback forms and all the information shared at the events can also be downloaded from the dedicated website; www.ssen-transmission.co.uk/projects/beaully-cluster-asset-replacement-projects/

Closing date for submitting feedback is 5pm, Wednesday 22nd November 2023

Any information given on the feedback form can be used and published anonymously as part of Scottish and Southern Electricity Networks consultation report. By completing the feedback form you consent to Scottish and Southern Electricity Networks using feedback for this purpose. Comments made to SSEN Transmission are not representations to the Scottish Ministers and if SSEN Transmission submit an application there will be an opportunity to make representations on the application to Scottish Ministers.

