

Scotland's largest offshore wind farm

Balhungie route
variation proposals

June/July 2020

2 Introduction to Seagreen

Seagreen Wind Energy Limited is an offshore wind farm development currently wholly owned by SSE Renewables. Located over 27km from the Angus coastline at its closest point, Seagreen will be capable of powering up to 1 million homes (or the equivalent of around 17% of Scotland's annual energy consumption) each year with low carbon, renewable energy.



Up to 1m homes powered



1.6m tonnes of CO2 avoided



Over 27km from Angus coast

With an investment of around £3bn, Seagreen will be one of the largest construction projects ever undertaken in Scotland, bringing a wealth of opportunity for businesses of all sizes across a wide range of disciplines and will support a significant number of jobs during construction and through its operational life.

Once complete, it will be Scotland's largest offshore wind farm.

In 2019, Seagreen secured a 15-year Contract for Difference (CfD) for 454MW. We are planning to build the Seagreen project to 1,075MW capacity (up to 114 turbines).

We aim to utilise as many local, Scottish and UK based suppliers where reasonably possible during all stages of the development.

Montrose Port has been confirmed as the preferred location for our long term Operations and Maintenance base and MHI Vestas Offshore Wind has been confirmed as the supplier for the 114 10MW wind turbines and they will also lead on operational servicing.

The electricity generated by the Seagreen wind turbines will be transmitted via subsea export cables to a landfall point at Carnoustie. Once ashore, the electricity is then going to be transmitted from Carnoustie via underground cables for around 19km to our new Tealing substation which is currently under construction.



3 Developing in partnership

In June 2020, we announced that the final investment decision had been taken to proceed with the construction of Scotland's largest offshore wind farm, which will power around 1 million homes and further the UK's ambition to deliver 40GW of offshore wind by 2030.



With an expected investment of around £3bn, we also announced that the Seagreen offshore wind farm development will be taken forward together with a new Joint Venture Partner, Total, with whom SSE Renewables has entered in to an agreement to sell a 51% stake in Seagreen 1.



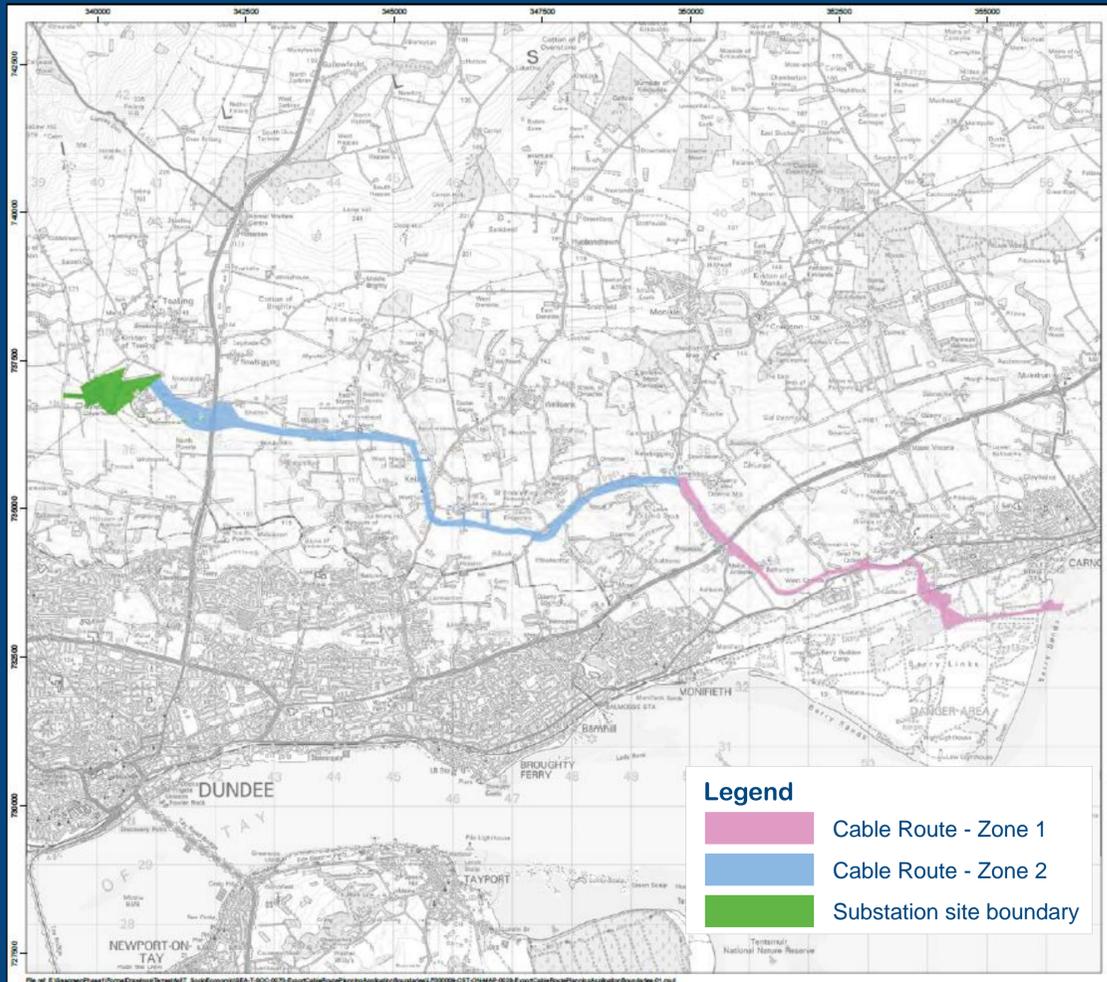
SSE Renewables will continue to lead on the development and construction of the project, supported by Total, and will operate the wind farm on completion, which is expected in 2022/23.



4 Project Overview (Onshore)

The onshore electrical infrastructure required for the Seagreen Phase 1 Offshore Wind Farm consists of approximately 19 km of underground electricity transmission cables, a new substation, extension of an existing substation, creation of access points and associated ancillary works.

In July 2016 we submitted an application for planning permission in principle for the onshore electrical infrastructure in order to establish whether the scale and nature of the proposed development would be acceptable to Angus Council. This application site extended from Carnoustie Beach to a connection point with the National Electrical Transmission Grid System at the existing substation at Tealing, as illustrated in the map below. A larger version of this map is available on our website ([MAP CR1](#)).



Planning permission in principle for this development was granted subject to conditions in January 2017.

A further three applications have since been submitted to Angus Council for approval. These contained the details of the planning permission in principle (the “matters specified”) conditioned in that consent.

The first related to the details of the proposed new substation and the extension to the existing substation at Tealing and was granted consent in January this year.

The other two applications related to the details of the underground electricity cables and associated ancillary development.

Angus Council have now approved these applications.

Further information has also been submitted to discharge the other pre-commencement planning conditions attached to the above planning applications.

This information included a written scheme of archaeological investigation for the site, a Habitat Management Plan for the site, details of the access arrangements and site drainage details.

Construction on the extension to the existing substation at Tealing commenced at the start of this year and is being managed by Scottish Hydro Electric Transmission plc (SHE Transmission).

Construction of the new Seagreen substation began in March and is being managed by Seagreen Wind Energy Ltd (SWEL).

Construction work to install the onshore underground cable is due to commence in the coming months. We anticipate that installation of the cables will take around 18 months to complete with a further 6 months for cable pulling.

We intend to seek planning permission for a short section of alternative onshore cable route on land between the A930 and Balhungie Farm to that currently approved under the planning permission in principle consent.

The approved onshore cable route was, at the time of development, considered to be the best route in terms of environmental, technical and economic factors. The consented route was agreed in consultation with Angus Council, statutory consultees and affected parties. However, further dialogue with the landowner of Balhungie Farm has resulted in a request to amend the approved route through the farm to further minimise potential impacts on farm operations. The proposed alternative route will also provide a better angle to cross a high pressure gas pipeline which crosses through the consented route.

The currently approved route is outlined in black on the map to the right. The proposed variation route is shown in red and is located to the south of the approved route.

A larger version of this map ([MAP BVR1](#)) and a more detailed map ([MAP BVR2](#)) are available next to this information board on the project website.

The proposed application site covers approximately 14 hectares. It extends from a point to the north of West Cotside Stables in a westerly direction for a distance of approximately 850 metres. The majority of the proposed route runs parallel to the north of the A930 before crossing the Buddon Burn and heading in a north-westerly direction for a distance of approximately 150 metres.

The nature of the proposed development would be identical to that forming part of the existing planning permission but takes into account some of the further work that has subsequently been undertaken by us on the detailed design, specification and method of cable installation.

Further details on these matters are provided on the following information boards.

Should planning permission be granted for the alternative section of onshore cable route in these proposals, then the originally approved section of cable route in the vicinity of Balhungie Farm would no longer be built.

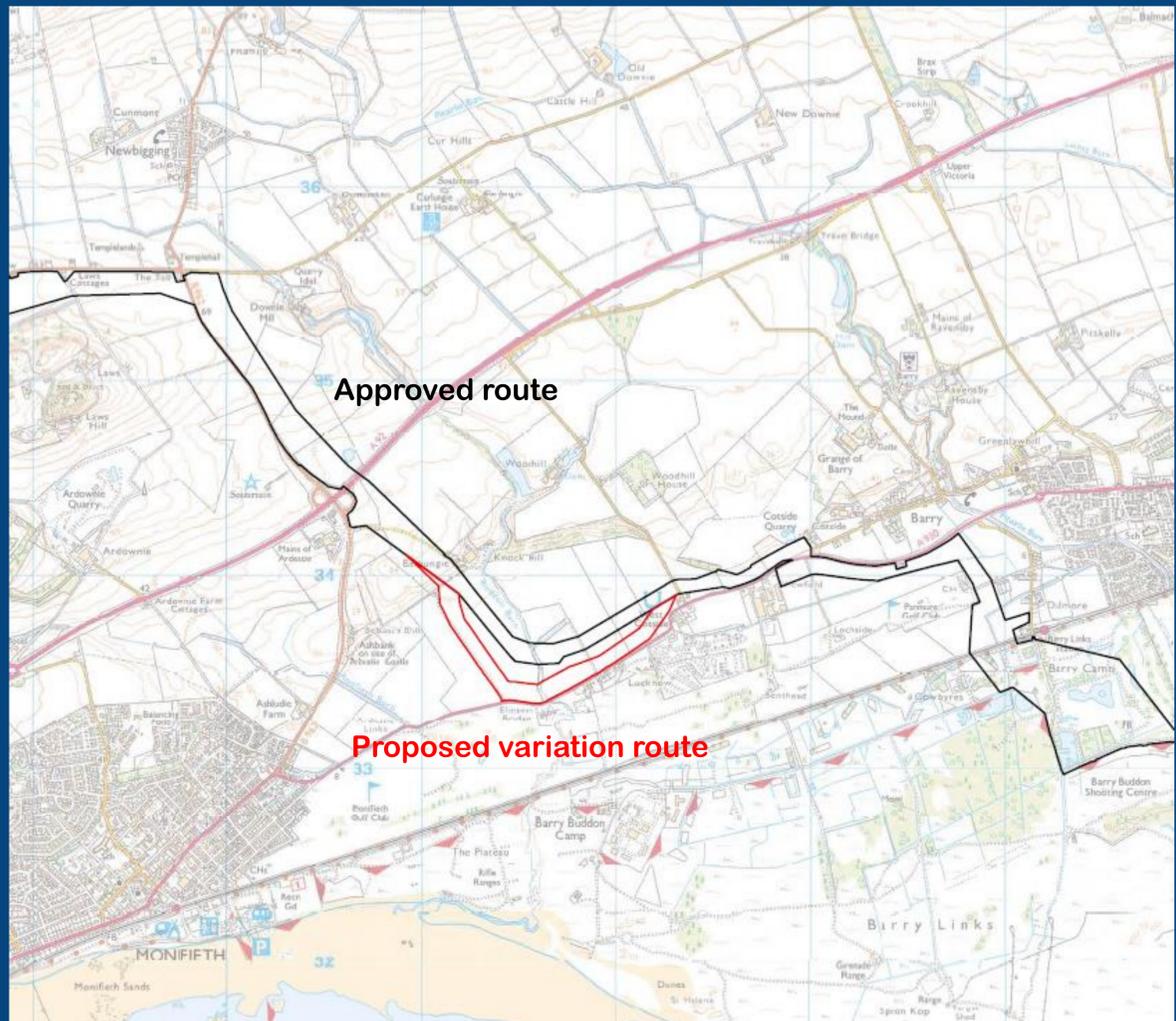
We have submitted a Proposal of Application Notice (PAN) to Angus Council outlining our proposed pre-application consultations. Should we wish to proceed with the proposal following these consultations, an application would be submitted later this year.

Consultation

As part of the planning application process we wish to engage with members of the public in advance of any application submission so that they are informed about our proposals. The purpose of these information boards is to provide you with an opportunity to view our proposals and to raise any questions you may have about them. We welcome feedback from you for consideration prior to any planning application submission.

We would normally hold local public exhibitions where residents would be able to meet the project team and find out more about our proposal and about the overall project itself. However, the Covid-19 pandemic means that we are unable to safely hold physical exhibitions and so we have published the same information we would normally share at such events on the project website.

In addition, we are holding a live and interactive web based consultation which will be promoted on the project website in due course.



6 Onshore cabling overview

The installation of the c.19km of underground cables will be undertaken by Nexans, who is responsible for the design, supply and installation of the offshore and onshore cabling. Nexans is a global company with more than 120 years of experience in the cable industry.

Nexans, our Principal Contractor, will employ a Subcontractor (to be confirmed) to undertake the onshore cable installation work.

This is an outline of the construction work that you may see in the coming months based on the existing consented route. In the event that our proposed route alteration is consented, the construction process will remain the same.

Initial construction activity will include the 'mobilisation' of our contractors.

This is where they will begin to move plant, welfare facilities and some materials to their construction compounds which are shown on the accompanying maps provided on our website.

Our contractors will also begin to work on constructing various access points which is where they will take access to the cable route work areas from the local road network.

As they begin to take access to the work area, they will mark out the cable route boundary with fencing in order to both create a safe work zone but also to ensure that farm animals and members of the public are excluded from the work area.

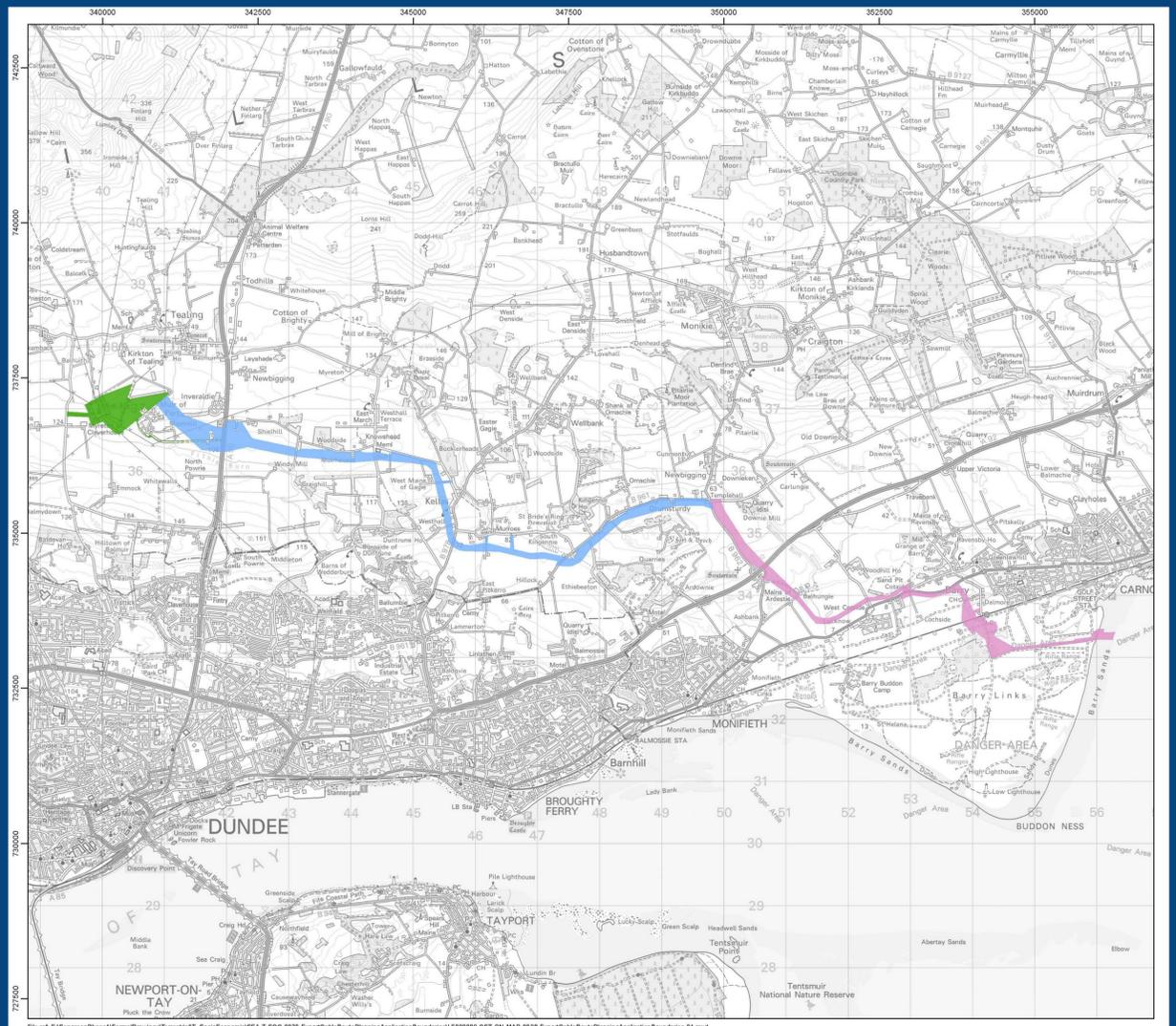
Once the work zone has been created, our contractors will begin work on the cable installation itself. This will involve the following activities:

- Ongoing creation of temporary access points, haul roads and access roads
- Creation of temporary construction compounds and storage areas
- Excavation of trenches and installation of cable ducting
- Excavation of cable 'pits'
- Installation of 'Joint Bays'
- Laying of cables through the installed ducts
- Reinstatement of the ground once the above activities are complete

The route includes the requirement to cross a watercourse. This will be crossed using HDD (Horizontal Directional Drilling) underneath the watercourse.

We have provided more information about each element of the works on the following information panels which we hope you will find useful and interesting.

You will also find each of the maps shown on these information boards numbered as a separate file on the project website, If you have any questions or concerns not answered in these boards then we would ask that you contact us via the means on the final 'Keeping in touch' board and we will do our best to assist.

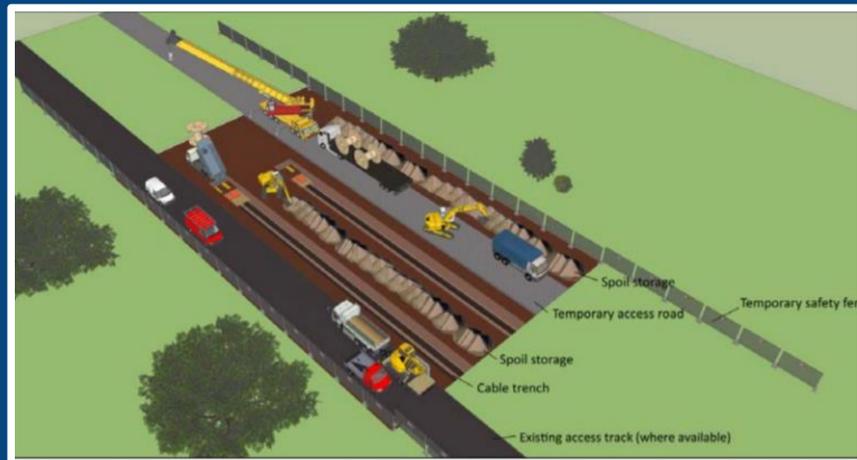


The Transmission System

Seagreen will have a three circuit 220kv HVAC (High Voltage Alternative Current) which means that there will be three sets of cables installed side by side along the entire route.

Onshore Export Cables

The majority of the cables will be directly installed into conventional open cut trenches or into ducts laid within the trenches. There will be a total of three cable trenches within the working corridor.



Example illustration of a typical working corridor for cable installation



Typical cable installation operation

A 30m wide working corridor will be required for installation of the cables. This will provide sufficient space beside the cable trenches for access, working space and for laydown of equipment, topsoil and spoil from trenching.

Topsoil and vegetation will be stripped from the working area and stored to one side. Topsoil will be stored separately from subsoil and away from watercourses or drains. Storage times for topsoil will be kept to a minimum to prevent deterioration in its quality. An excavator or trench digger will be used to dig the trench which will be back filled once cable duct installation is complete and the land will be restored.

At environmentally sensitive locations such as at the Buddon Burn it is proposed to use Horizontal Directional Drilling (HDD) rather than conventional open cut trenching. This is a guided trenchless method in which a pilot borehole is drilled along a pre-determined bore hole path. Subsequent hole enlargement then follows the path set by the bore hole with minimum disruption.

It is anticipated that the construction works at the proposed variation route will take approximately 160 days to complete. This includes for approximately 45 days to dig the trenches and install the ducting and 35 days for the proposed HDD operations.

Excavation, ducting, cable pulling and testing of Circuit 1 is expected to be carried out during the 1st quarter of 2021. We anticipate that cable pulling and testing of Circuits 2 and 3 will be carried out in July 2021 followed by completion of reinstatement by the end of 2021.

Joint Bays and Pulling Pits

Joint bays are needed to join the lengths of cable together along the cable route. Cables are restricted in length to allow them to be safely delivered using the public road network.

Joint bays are simple underground concrete chambers which enclose and protect the cable joints. Each bay will be approximately 9.2m long by 2.4m wide by 2m deep. We anticipate up to three joint bays may be required along the length of the proposed variation route.

Pulling pits are temporary excavations required to provide a viewing point and locations to add lubrication during cable pulling operations. Once cable pulling is complete, the pits will be reinstated back to existing ground levels.

We anticipate up to three pulling pits may be required.

Site Access

We anticipate that construction access to the proposed variation route may be taken from the A930 (Barry Road) at the junction with the private access track to Balhungie Farm, or from the private track along the A930 opposite Lucknow.

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Mitigation measures

A variety of best practice and mitigation measures would be employed to ensure that construction of the onshore electrical infrastructure will not result in any unacceptable environmental effects or impacts upon residential amenity.

Any planning application for the proposed variation route would be accompanied by an Environmental Impact Assessment (EIA) Report or suite of Environmental Appraisal Reports. These will assess the potential adverse effects of the proposals on the environment and identify suitable mitigation to prevent, reduce and where possible offset these effects. It is anticipated that many of the best practice, mitigation and control measures that have been agreed for the approved cable route will be applicable to the proposed variation route.

Construction noise

The proposed alternative section of cable route will be closer to residential properties along Barry Road than the approved cable route. Mitigation measures will be employed to avoid unacceptable noise and vibration effects on these properties including the use of the quietest construction methods and plant where available and the regular and effective maintenance of equipment.

It is considered that potential construction noise and vibration impacts could be controlled through adoption of the same noise and vibration planning conditions as attached to the overall planning permission for the wider cable route. These set noise and vibration limits at the nearest sensitive properties and require the submission of a construction noise and vibration management plan for the approval of the planning authority, including detailed measures for the mitigation of noise and vibration and a complaint investigation and resolution procedure.

Traffic and transport

The potential traffic and transport effects associated with the proposed development include the effects of construction traffic on existing traffic flows and the public road network. However, given that the Council's Road Service have previously raised no significant concerns regarding construction vehicle movements associated with the project it is considered that the level of traffic anticipated could be accommodated on the existing road network.

Notwithstanding the above, mitigation measures to be employed are likely to include instructing HGVs, and site personnel as appropriate, to use only the approved access routes to the site; scheduling works outwith hours of peak activity on local roads if necessary; and use of appropriate construction techniques to avoid impacts on road infrastructure. These mitigation measures could be implemented through adoption of the same planning conditions as attached to the overall planning permission for the wider cable route

Dust and air quality

The potential dust and air quality effects associated with the cable installation include the generation of dust from the movement of soils and emissions from construction vehicles. Potential mitigation measures to prevent, reduce and where possible offset such effects include ensuring plant and machinery is well maintained, introducing dust suppression methods such as water sprays wherever possible and appropriate storage of soils away from sensitive receptors where possible.

It is considered that potential dust and air quality impacts could be controlled through adoption of the same planning conditions as attached to the overall planning permission for the wider cable route. These require the submission of a dust and air quality management plan for the approval of the planning authority, including detailed measures for the mitigation of dust from construction activities and a complaint investigation and resolution procedure.

Landscape and visual

The land use along the route of the proposed development is predominantly agricultural with some hedgerows, trees, and burns creating some subdivision.

Although some of these landscape elements may be temporarily affected by the construction of the proposed development, they will be restored thereafter.

As the cable will be underground, it will not be a visible element during the operational period although the Joint Bay access lids will be visible at ground level.

Hydrology and hydrogeology

Potential effects during construction include possible pollution of surface water caused by release of sediment to watercourses from excavated/stockpiled materials or as a result of works near streams. There is also the potential for pollution of surface water through operation of machinery (e.g. spillage of fuels, oils etc) as well as modifications to groundwater flows and agricultural field drainage systems.

The existing planning permission includes a planning condition requiring the submission of a Construction Environmental Management Plan (CEMP) for the approval of the planning authority prior to the commencement of construction.

The CEMP is required to include:

- a Soil Management Plan showing details of the proposed locations of stockpiles of excavated materials and their management
- a Site Waste Management Plan detailing pollution prevention monitoring and mitigation measures for all construction activities
- a scheme for the identification of drainage systems and measures for their protection during construction and reinstatement following the completion of construction.

Subject to a similar condition requiring the submission of such a CEMP on this proposal being applied and subsequently employed during construction, no significant effects are predicted upon hydrology and hydrogeology as a result of the proposed development.

Land use and soils

The proposed application site comprises prime quality agricultural land which will be temporarily taken out of agricultural use during construction of the proposed development. The proposed alternative route would not require the use of more prime quality agricultural land than the route currently approved. Once construction is complete, the land would be fully reinstated back to agricultural use.

The construction works have the potential to affect the quality of the existing agricultural soil on site. As with the existing planning permission, it is proposed that soils be excavated, handled, stored and reinstated in accordance with a Soil Management Plan to be agreed with the planning authority prior to the commencement of development.

Following the implementation of such a plan, no significant effects are predicted upon land use or soils as a result of the proposed development. A voluntary land agreement has been agreed with the landowner.

Biodiversity

The proposed site predominantly comprises land under agricultural cultivation which it is considered likely to be of limited ecological value.

Some small areas of trees and hedgerows are present within the site and the wider area which may provide potential nesting habitats for a range of birds. In addition, areas of open ground could potentially support ground-nesting species. To mitigate for potential impacts on breeding birds, it is proposed that vegetation clearance will be avoided where possible within the breeding bird season (March to August). In areas where this is unavoidable, a suitably experienced ornithologist will first check areas to be cleared to confirm active nests are not present. If active nests are recorded, these areas will not be cleared until the nest is empty and any young have fledged.

Trees along the Buddon Burn have previously been identified as having potential to support roosting bats. To avoid potential disturbance to bats, it is proposed that pre-construction surveys be undertaken to confirm their potential. Proposed mitigation will include avoiding any trees with high or medium bat roost potential wherever possible. Where this is not possible it will subsequently be determined through daytime tree inspection or emergence/re-entry surveys whether a bat roost is present. This will inform further mitigation.

As per the planning permission in principle consent for the wider cable route, it is proposed that a suitably qualified and experienced ecological clerk of works be appointed for the duration of the construction works to ensure compliance with an approved CEMP for the site and wider environmental protection legislation and best practice.

Once complete, the Seagreen offshore wind farm will be Scotland's largest offshore wind farm. It will be capable of powering up to one million homes each year from the power of the wind which is equivalent to more than 40% of Scottish households.

Seagreen will be one of the largest construction projects ever undertaken in Scotland, supporting a significant number of jobs during construction and throughout its 25 year operational life. We are commissioning an updated socio-economic study which will include up to date information on the break-down of jobs and the estimated project spend in Scotland and the UK.



Perhaps the most local example of our commitment is our choice to base our long term Operations and Maintenance (O&M) base at Montrose Port.

The O&M base will be a state of the art facility providing office space, warehousing and welfare facilities for up to 100 people.



MHI Vestas Offshore Wind have been confirmed as the supplier of our 114 V164-10MW wind turbines and they will have a long term contract to maintain and service the turbines from Montrose.

Blades for the Seagreen wind farm, each 80m in length, will be supplied from their Isle of Wight manufacturing facility.



We have also announced that Seaway 7 have been awarded the contract to install the inter-array cables within the Seagreen site.

Seaway 7 will also install the wind turbine foundations. These contract awards will create up to 50 jobs at their Aberdeen base.

We have also been involved in a number of Scottish and UK Supply Chain events to highlight contract opportunities available on the project and within the wider offshore wind industry. Most recently, in November 2019, we engaged with hundreds of companies from across Scotland at events in Inverness, Aberdeen and Dundee

These events demonstrate our commitment, and that of our appointed Tier One contractors, to develop the local and Scottish supply chain and maximise opportunities for them to work with us where possible.

The Seagreen project will bring a wealth of opportunity for businesses of all sizes across a wide range of disciplines. Our aim continues to be to utilise as many local, Scottish and UK based suppliers where reasonably possible during all stages of development, construction and operation.

If you are interested in working with us, please register your interest: www.seagreenwindenergy.com/supplychain

Investing in your community

In addition to employment and supply chain benefits, we are committed to ensuring local communities benefit further through engagement, funding and other opportunities.

We are currently consulting with local Community Councils about the set-up, criteria and administration of our Community Fund which has been confirmed at £1.8m. The Fund will be managed by SSE's experienced in-house Community Investment Manager Craig Mullen (craig.w.mullen@sse.com / 07384 452823) alongside local representatives.

More details about the Seagreen Community Fund will be made available in due course.

We are also committed to working with local colleges and supporting apprenticeships to develop the future workforce and provide a pathway for school leavers into the offshore wind and wider energy sector.

We have also committed to establish a separate £400,000 fund focused on Supporting STEM (Science, Technology, Engineering and Maths) based skills development in Angus.

Thank you for taking the time to look over our Information Boards. We hope you have found the information useful and interesting.

Feedback on our proposal

If you would like to share your views on our proposed variation cable route, please fill out one of our online Consultation Questionnaire (link just below these boards on our website) before Monday 20 July 2020.

All feedback received will be recorded and taken in to consideration before we make any submissions to Angus Council.

Comments and questions on the proposals or requests for further information will be responded to as soon as possible.

Frequently asked questions

Frequently asked questions and responses to these questions will be published on the project website on Friday 24 July 2020.

Final feedback

Members of the public will then have until Friday 31 July to submit final comments on the proposals via our online questionnaire or email.

Please note that comments made to Seagreen are not representations to Angus Council.

There will be an opportunity to make representations to Angus Council should a planning application be submitted.



We hope that the information provided here is both interesting and helpful. We will provide regular project updates on the project website and via the project's dedicated Twitter feed.

From time to time, we may issue email updates to stakeholders and those who have signed up to our email distribution list. If you would like to sign up to our update distribution list, please simply send an email to our Stakeholder Engagement Manager (details below) with 'Subscribe' in the subject line. To unsubscribe at any time, simply send another email with 'Unsubscribe' in the subject line.

We will keep your personal information safe and will only use it to provide you with email updates about the Seagreen project or to respond to any emails you may send us. We will not sell your email address to anyone or pass your email address on to any third party organisations.

Of course, if you have any questions or concerns about the upcoming onshore cable installation works, or about the wider Seagreen development we would invite you to contact us and we will do our best to assist.

You can contact us via our **Stakeholder Engagement Manager, Pauline Allison** :



pauline.allison@sse.com



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@seagreenwind



Covid-19 pandemic

We are fully committed to minimising the impact of coronavirus while we continue to deliver critical green infrastructure, including work on Seagreen offshore wind farm.

We are proud of our safe working culture which extends to everything we do, whether it is working on a construction site or travelling. Every member of our team (including our contractors) has the power to stop what they (or others) are doing if it is thought to be unsafe in any way. Our approach is that 'if it's not safe, we don't do it'.

The Covid-19 outbreak has required that all of our activities are even more rigorously scrutinized. Our teams are continuously and actively risk assessing what is required and introducing additional mitigation measures as needed. This includes implementing extra preventative hygiene measures including additional cleaning as well as observing social distancing.

The wellbeing of our teams and the local community remains our number one priority.

Minimising the impact of coronavirus while we continue to work on Seagreen is vital and we keep all works under review in tandem with evolving government advice.