



Coleraine Solar Farm



Welcome to our exhibition

Strategic Power Projects Ltd (SPP) is exploring the potential for a solar farm on lands south of Windyhill Road, north of Farrenlester Road, west of Cranmore Park, Fernhill Crescent, Lismurphy Avenue, Greenmount Crescent, Greenmount Road, Broomhill Park, Wheatfield Avenue, south of Churchland Lane, and east of Ballinteer Road.

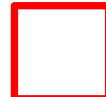
SPP is a renewable energy company established to support the ambitious government plans to reduce emissions through the development of large scale Solar PV and other renewable technologies to deliver new sources of clean energy throughout Northern Ireland and Ireland.

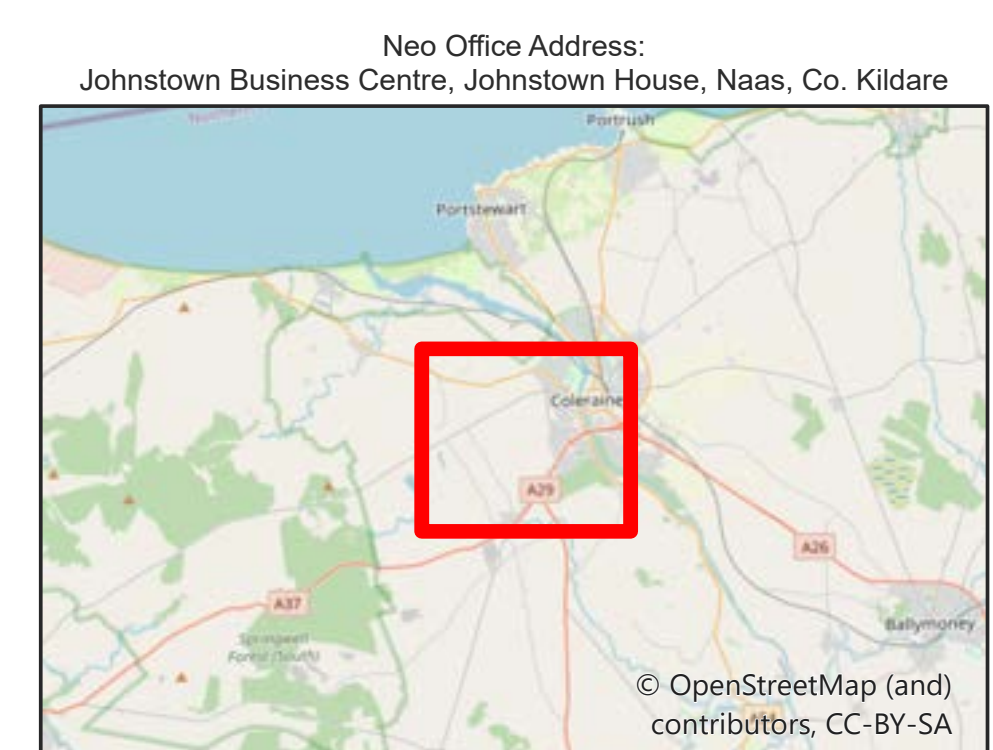
SPP work closely with a leading group of environmental, technical and construction partners to ensure projects are designed sympathetically and for the long term benefit of the environment.



Coleraine Solar Farm
Site Location Map
Figure 1

Key

 Development Boundary



Date: 04/08/2023
Drawn By: James Greenan
Scale (A3): 1:20,000
Drawing No: NEO01226/0011A





Coleraine Solar Farm



The Proposed Development will consist of the construction of PV panels mounted on metal frames, new access tracks, underground cabling, perimeter fencing with CCTV cameras and access gates, two temporary construction compounds and all ancillary grid infrastructure and associated works.

The solar panels will be fixed tilt, bi-facial, ground mounted arrays. They are not anticipated to exceed 3m in height and will be affixed to a frame which is pile driven into the ground to a maximum depth of 1-2 metres. This comprises a 'pin-prick' effect which is considered to cause minimal ground disturbance and reduce potential impacts on unknown sub-surface archaeology.

The panels will have a non-reflective surface, which will increase the proportion of solar radiation absorbed, removing the risk of unwanted reflection and glare.

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The design includes the provision of secure deer fencing running around the perimeter of the Proposed Solar Farm and set back 5m from existing field boundaries.

The fence will consist of timber posts and deer fencing (similar to sheep wire fence but higher) measuring to 2m in height with a 0.1m gap at the bottom allowing access for smaller mammals. All on-site cabling will be located underground. Cable trenches will be excavated to 1m deep x 1m wide.





Why here?

- The site lies within close proximity to a viable grid connection point;
- The site lies outside of any statutory designated environmental, archaeological or landscape designations;
- It has good solar irradiation levels;
- The site is in a predominantly rural setting;
- The land itself is gently undulating and quite flat in other areas, predominantly rising to the east (45-62m AOD);
- With the proposed Biodiversity management plan (BMP) the site will be significantly enhanced for ecology; and
- The site will be able to continue in agricultural use, such as lower intensity sheep grazing while also producing clean green renewable energy, a dual practice known as 'agrivoltaics'.

Benefits

- Helping to fulfil Northern Ireland's targets and government policy objectives on tackling climate change
- Long-term environmental benefits in the form of improved biodiversity and landscape value thanks to additional planting and infilling of hedgerows at the construction phase and the ecological enhancement measures and the ongoing sensitive site management for the duration of the Proposed Development's lifespan which is expected to be 35-40 years.
- Local economic benefits both in terms of its construction and operation, generating jobs for installation, maintenance and its eventual remediation.
- Energy Security

Debunking Solar Myths:

"Solar isn't effective in cloudy conditions / Solar isn't effective in the UK"

Solar panels work in sunny, cold, and even cloudy environments. Although the efficiency of solar panels is higher on sunny days, they do not need direct sunlight to work. Solar panels can produce a considerable amount of electricity on cloudy days and during the winter season.

Solar panels are very efficient in the UK. In fact, they can overheat in hot countries, and this reduces their efficiency. Therefore, UK weather is ideal for solar panels to work optimally.



Archaeology

There are no statutory designated heritage assets within the boundary of the Proposed Development Site. However, a single non-designated asset is situated inside the boundary – this is the site of a rath (Early Christian period) within the southeast extent. This feature was excavated in 1973 and no substantive elements now remain at this location. As a result, no direct effects on known heritage assets will occur as a result of the Proposed Development. The site is expected to possess some potential for hitherto-unknown archaeological remains and so a geophysical survey is currently ongoing to evaluate this and detect any significant sub-surface features.

With the implementation of an appropriate programme of archaeological works, provisions will be in place for the preservation in-situ or by record of sub-surface archaeology. As construction methodology for solar farms usually results in a total ground disturbance footprint of circa 5%, this also limits the potential for disturbing hitherto-unknown archaeology.

Indirect effects upon designated and non-designated heritage assets are similarly being assessed but no significant effects upon these resources are currently anticipated as a result of the proposal.

Ecology

The proposed solar farm does not lie within any statutory environmental designated sites.

The majority of the site comprises arable habitat of low ecological value.

A Biodiversity Management Plan (BMP) will be produced and will be implemented during the construction and operation all phases of the Proposed Development. This will involve the creation of new habitats offering food and shelter to wildlife, including priority species. As a result, it is anticipated that the Proposed Development will result in a net gain for biodiversity.

A Shadow HRA will be conducted to explore and discuss indepth any potential connectivity and subsequent impacts the Proposed Development may have on European Designated Sites within the Zone of Influence.



Landscape & Visual

The Application Site is not located within any nationally or locally designated landscapes.

The surrounding landscape will have minor adverse impacts from the Proposed development as there is existing renewable energy infrastructure in the surrounding area.

Potential visibility of the Proposed Development from various local receptors is anticipated to be low-medium of the site and following mitigation strategies detailed in the forthcoming Landscape and Ecology Management Plan.

The mitigation measures proposed will include native species hedgerow and tree planting along the open sections of the Application Site's boundary edges in order to enclose the Proposed Development and help reduce its overall visibility whilst improving the biodiversity of the site.

Noise

Solar panels themselves do not generate noise. The main noise source associated with a solar farm will be the inverter stations, these are sited internally within the layout to achieve the maximum possible separation distance from Noise Sensitive Receptors (NSRs) and as such will be inaudible too.

A Noise Impact Assessment (NIA) will be produced and submitted with the planning application to confirm there will be no exceedance of acceptable noise limits.





Flood Risk

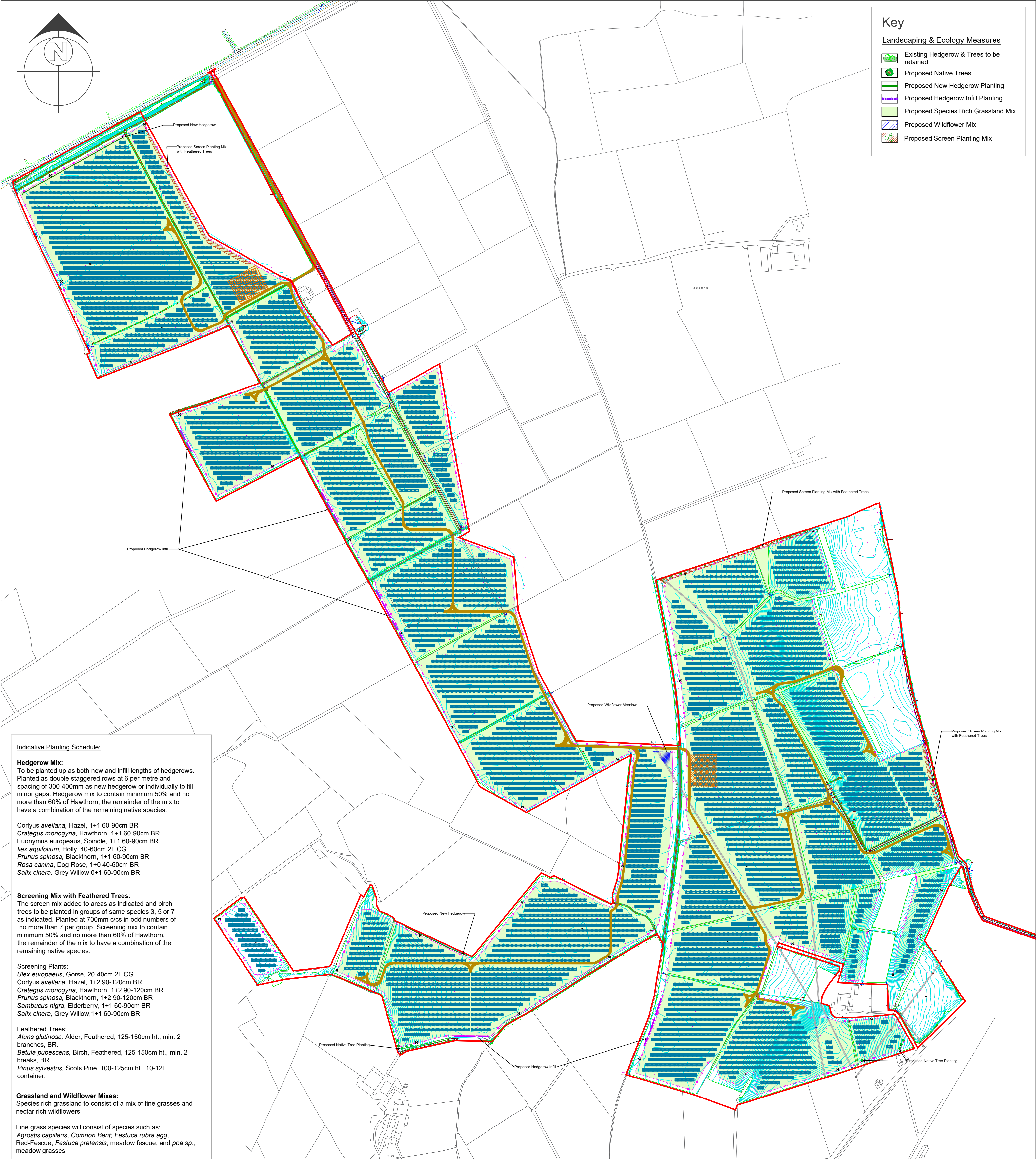
The Department for Infrastructure online indicative flood map indicates that part of the Application Site is contained within an area at risk of fluvial flooding from the Black burn. However, more detailed hydraulic modelling has been undertaken to inform the design. All areas of fluvial (flood plain) flooding will be avoided, whilst only panels will be located in areas at risk of pluvial (surface water) flooding. As the site will be designed to stay operational in times of flooding the effects of flooding will not be significant and the proposal will not displace any material volume of flood water. A detailed Flood Risk Assessment (FRA) and Drainage Impact Assessment (DIA) will be submitted with the application.

Glint & Glare

In terms of reflectance, photovoltaic solar panels are not highly reflective surfaces. They are designed to absorb sunlight and not to reflect it. Several studies have shown that photovoltaic panels have similar reflectance characteristics to water, which is much lower than glass, steel, snow and white concrete by comparison.

Consideration will be given to the effects on residential receptors whilst undertaking the landscape assessment and subsequent planting plan, to mitigate a theoretical glint and glare and where possible, negate its effects.

Public roads within the vicinity of the Proposed Development Site are well screened from the solar farm. Roads within 1km will be assessed as part of the Glint and Glare Impact Assessment, but it is not anticipated that glint and glare will have a significant effect on road safety.



Indicative Planting Schedule:

Hedgerow Mix:
To be planted up as both new and infill lengths of hedgerows. Planted as double staggered rows at 6 per metre and spacing of 300-400mm as new hedgerow or individually to fill minor gaps. Hedgerow mix to contain minimum 50% and no more than 60% of Hawthorn, the remainder of the mix to have a combination of the remaining native species.

Corlyus avellana, Hazel, 1+1 60-90cm BR
Crataegus monogyna, Hawthorn, 1+1 60-90cm BR
Euonymus europeaus, Spindle, 1+1 60-90cm BR
Ilex aquifolium, Holly, 40-60cm 2L CG
Prunus spinosa, Blackthorn, 1+1 60-90cm BR
Rosa canina, Dog Rose, 1+0 40-60cm BR
Salix cinera, Grey Willow 0+1 60-90cm BR

Screening Mix with Feathered Trees:
The screen mix added to areas as indicated and birch trees to be planted in groups of same species 3, 5 or 7 as indicated. Planted at 700mm c/c's in odd numbers of no more than 7 per group. Screening mix to contain minimum 50% and no more than 60% of Hawthorn, the remainder of the mix to have a combination of the remaining native species.

Screening Plants:
Ulex europaeus, Gorse, 20-40cm 2L CG
Corlyus avellana, Hazel, 1+2 90-120cm BR
Crataegus monogyna, Hawthorn, 1+2 90-120cm BR
Prunus spinosa, Blackthorn, 1+2 90-120cm BR
Sambucus nigra, Elderberry, 1+1 60-90cm BR
Salix cinera, Grey Willow, 1+1 60-90cm BR

Feathered Trees:
Alnus glutinosa, Alder, Feathered, 125-150cm ht., min. 2 branches, BR
Betula pubescens, Birch, Feathered, 125-150cm ht., min. 2 breaks, BR
Pinus sylvestris, Scots Pine, 100-125cm ht., 10-12L container.

Grassland and Wildflower Mixes:
Species rich grassland to consist of a mix of fine grasses and nectar rich wildflowers.

Fine grass species will consist of species such as:
Agrostis capillaris, Common Bent; Festuca rubra agg, Red-Fescue; Festuca pratensis, meadow fescue; and poa sp., meadow grasses

Nectar rich wildflower species will consist of species such as:
Red Clover, White Clover, Birds-Foot Trefoil, Black Medick, Common Vetch, and Phacelia.

Other wildflower species may include:
Bit Scabious, Meadow Buttercup, Field Scabious, Hemp Agrimony, Kidney Vetch, Lady's Bedstraw, Lady's Ann lace, Lesser Knapweed, Meadowsweet, Mullein, Ox-eye Daisy, Purple Loosetrife, Ragged Robin, Red Campion, Ribwort Plantain, Rough Hawksbit, Sorrel, St Johnswort, Wild Angelica, Wild Carrot, Yarrow, Yellow Agrimony, Yellow Rattle, Salad Burnet. Annual species may also be used such as Corn Marigold, Corn Poppy, Corncockle, Cornflower and Scented Mayweed

Native Heavy Standard Trees

No.	Species	Height	Girth	Specification	Location
1	Betula pubescens	300-350cm	12-14cm	HS .5 brks 3x: RB	as shown
2	Quercus robur	350-425cm	12-14cm	HS .5 brks 3x: RB	as shown
3	Quercus petraea	350-425cm	12-14cm	HS .5 brks 3x: RB	as shown
4	Tilia x europaea	350-425cm	12-14cm	HS .5 brks 3x: RB	as shown
5	Sorbus aucuparia	350-425cm	12-14cm	HS .5 brks 3x: RB	as shown

Outline Landscape Specifications:

Existing Vegetation:

Any necessary works being undertaken within close proximity and to the retained tree lined hedgerows should be carried out in accordance with BS 3998:2010 Tree work Recommendations, BS 5837:2012 Trees in Relation to Design Demolition and Construction and NJUG 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees and in consultation with an arborist.

Proposed Planting:

Planting to be supplied in accordance with BS 3936-1:1992 Nursery Stock. specification for trees and shrubs, BS 3936-4:2007 Nursery Stock.Specification for forest trees, poplars and willows, BS 8545:2014 Trees:from nursery to independence in the landscape. All landscaping works to be in accordance with BS4428:1989 "General Landscaping Works." All planting should be source from local provenance certified seed stock where possible with other sources needing to be approved.

Feathered Tree Planting:

Trees will be planted into tree pits 2-3 times the width of root spread and to the depth of root spread. The tree pit's sides are to be loosened, base aerated and later backfilled with the existing excavated subsoil and topsoil. All trees to be supported with a suitable tree guard and staked with adjustable tree ties.

Hedgerow Planting:

Hedging planted into a trench measuring a min of 600mm wide and 300mm deep, allowing enough width and depth for the roots. Short lengths of individual whip infilling may be undertaken by slit planting. The existing soil should be improved by digging in well rotten Farm Yard Manure or other soil improver. All hedging will be supported with rabbit guards and canes and 1m wide mulch matting.

Temporary stock proof fencing of 1.2m high should be used to prevent grazing of new hedgerows by livestock if necessary. Any planting being carried out within the ecological constraints buffer area to be hand dug and supervised by the ECOW.

Grassland & Wildflower Planting:

The disturbed areas of grassland will be sown with a low growing species rich mix of grasses, which will be lightly grazed by sheep or maintained by cutting. The areas of wildflower mix will be separated from this grassland by a stock-proof fencing to prevent any possible grazing by animals.

Timing & Aftercare:

Planting of the hedgerow mix to take place during the months of November to March, preferably before January and at a time when the soil is not frozen or waterlogged. The new plants will be watered in at the time of planting and regularly during their first year. All tree and hedgerow species will have a minimum 1m wide radius free of any weeds until 3 years after planting, when they are well established. Weeding will be done using a mulch mat and either by hand or mechanical control as required in order to prevent competition for nutrients from weeds and grasses.

The planting supports and guards will be inspected regularly to ensure they are not impeding the plant's growth and will be adjusted or replaced as required. These will be removed when the planting is established within the initial 3 years.

The new hedgerow planting will be reduced by a third in height immediately after planting hawthorn and blackthorn, with other species lightly pruned and cut later in the first autumn. Pruning will be required in the second year to encourage bushy growth by removing half of the previous year's growth. The plants will be shaped in the third year by trimming both lateral and lead branches. The hedging will be cut on a rotational basis using mechanical methods approximately every 2-3 years and shaped to an 'A' shape. All hedge cutting will be undertaken outside of the nesting bird period (beginning of March to end of August).

The grassland will be managed by light grazing or cutting several times in the first year to reduce competition from annual weeds and allow the grass to become established. Weeds may also need treating through spot treatment with an appropriate approved herbicide. In the second year and onwards the grassland can be maintained by a light grazing regime through the year or by cutting. Areas of wildflower mix will similarly need controlling of any initial flushes of weeds and persistent weeds. The wildflower mix will be maintained by an annual cut after they have flowered, with the cut growth allowed to sit to release any seeds prior to the cuttings being removed off site.

Any loss of planting which occurs within 5 years of the initial planting as a result of plant failure will be replaced with the same plant species. Final location and number of bird nest boxes and bat boxes to be determined on site by an ecologist.

Ver.	Date	Comments

Drawn By: Donal Walls
Address: 83-85 Bridge Street,
Ballymena,
Co. Antrim
BT43 5EN

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Project: Coleraine Solar Farm&BESS
Client: Strategic Power Projects
Drawing: Landscape and Ecology
Management Plan (draft)

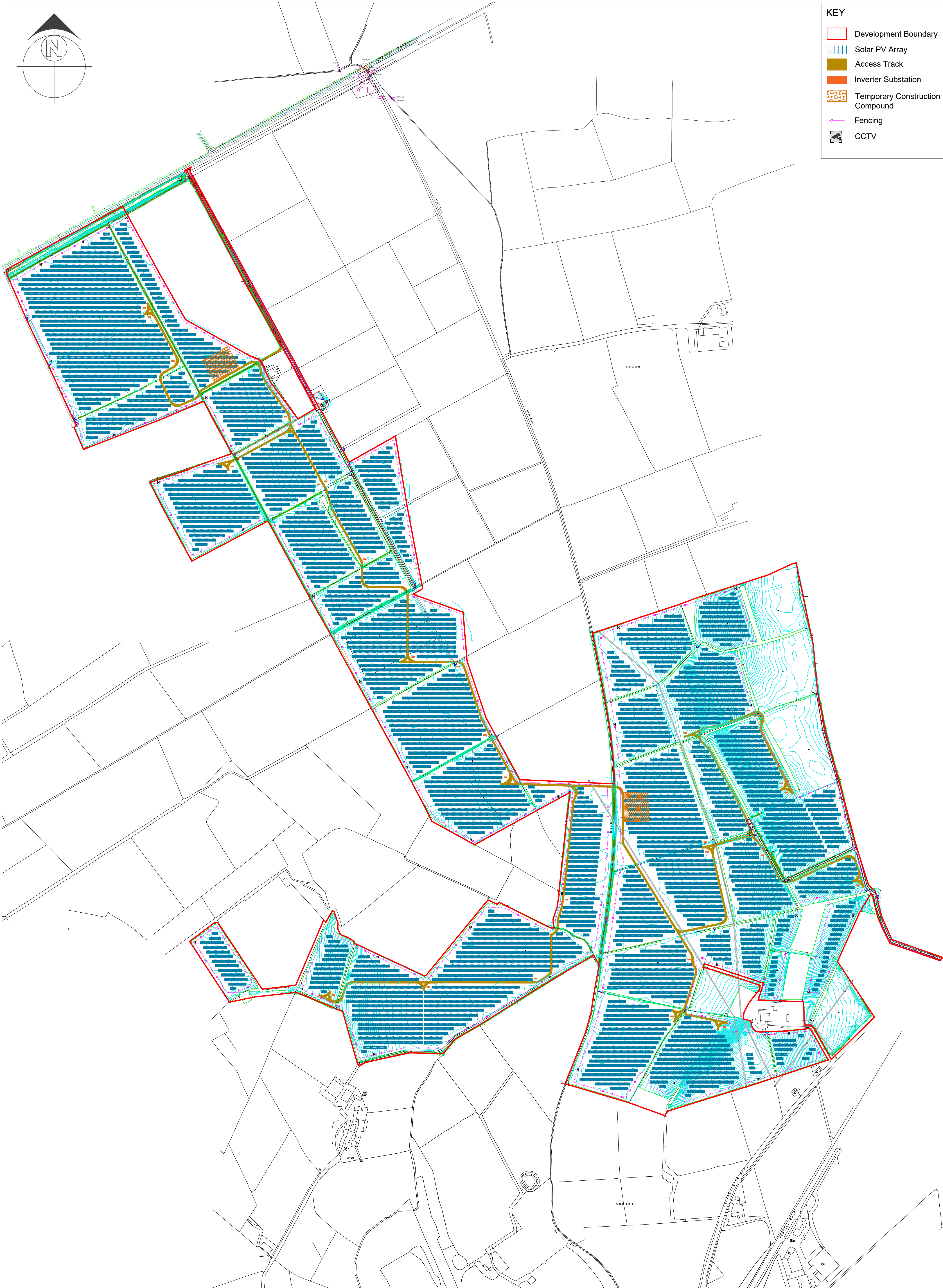
Project No.: NEO01226
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Drawn:DW **Checked:** JM **Approved:**PN
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Date: 11 September 2023

Revision:
A



neo
ENVIRONMENTAL

Ballymena Office: T:0282 565 0413 E: info@neo-environmental.co.uk
Glasgow Office: T: 0141 773 6262 E: info@neo-environmental.co.uk
Naas Office: T:00353 (0)45 844250 E: info@neo-environmental.ie
Warrington Office: T:01925 661 716 E: info@neo-environmental.co.uk



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ENVIRONMENTAL

Ballymena Office: T:0282 565 0413
Glasgow Office: T: 0141 773 6262
Naas Office: T:00353 (0)45 844250
Warrington Office: T:01925 661 716

E: info@neo-environmental.co.uk
E: info@neo-environmental.co.uk
E: info@neo-environmental.ie
E: info@neo-environmental.co.uk



Viewpoint 6 - Farmhouse on Ballinteer Road Year 0



Viewpoint 6 - Farmhouse on Ballinteer Road Year 5



Viewpoint 7 - Farm Buildings on Ballinteer Road Year 0



Viewpoint 7 - Farm Buildings on Ballinteer Road Year 5





Feedback & Next Steps

SPP has worked alongside experts in the fields of Environment, Planning and Construction to design a solar farm that will fit sensitively in the surrounding landscape. During the development process various consultants have liaised with DFI and relevant Councillors and this public engagement is the next step.

A pre-application advice discussion (PAD) process is ongoing with DFI and a Proposal of Application Note (PAN) was submitted to DFI in July 2023.

SPP and it's design team want to hear your feedback on the Proposed Development at this stage in order to inform the preparation of a final proposal. SPP want to make a positive contribution to this area for the long term thus we encourage you to review the materials on display and actively engage with the team at today's event should you have any questions.

Feedback forms are available for you to provide any comments or opinions you may have on the Proposed Development. We would be grateful if you could fill one of these out during your visit to the exhibition event today as we do not want to miss any valuable feedback you may have discussed today. If you want to get in touch via a different method, please contact the team on the phone number or email provided below.

Email:
info@neo-environmental.co.uk

Telephone:
0282 565 0413

Website:
www.neo-environmental.co.uk

Head Office:
83-85 Bridge Street
Ballymena
Northern Ireland
BT43 5EN