

THANK YOU FOR JOINING OUR WEBINAR FOR LEIGH DELAMERE SOLAR FARM



EDEN
RENEWABLES

“An exemplar
of best practice
in ground-mounted
solar projects.”

SOLAR POWER PORTAL

About us

- **North East USA:** 150MW+ of 7.5MW community solar & storage projects
- **Sub-Saharan Africa:** Commercial and industrial sites, subsidy free via GridX Africa
- **UK:** subsidy free solar & storage
 - Utility scale: developing 10 x 50MW projects
 - Commercial and industrial: rooftops, carports, ground mount, EV chargers
 - Community owned and shared ownership: e.g. Lancashire Wildlife Trust

INDUSTRY LEADING

- Through Solstice Renewables, Eden's founders set exemplary standards for:
 - **multiple land use:** solar generation, biodiversity and agriculture
 - **community and educational benefits**
- Now widely adopted throughout the UK solar industry
- Basis for US 'pollinator-friendly' solar programme, started Minnesota, now being widely adopted across the US
- Eden/Solstice team developed c120 MW 2013-16 and 200 MW subsidy free solar

**SOLAR
POWER
PORTAL**
AWARDS 2015

WINNER

Best ground-mount project:
SOLSTICE RENEWABLES

Our UK team



Harry Lopes
CEO



Giovanni Maruca
CDO



Alec Greenwell
Development
Manager



Rebecca Symon
Project
Coordinator



**Sophy
Fearnley-Whittingstall**
Community Engagement



Ross Wolhuter
Construction
Manager



Lorna Lyle
Solar Power
Education



Guy Parker
Wychwood
Biodiversity



Malcolm Evans
Electrical
Engineering

Why solar power?

- Climate emergency
- Low cost
- Subsidy free
- Low impact
- Reduce air pollution



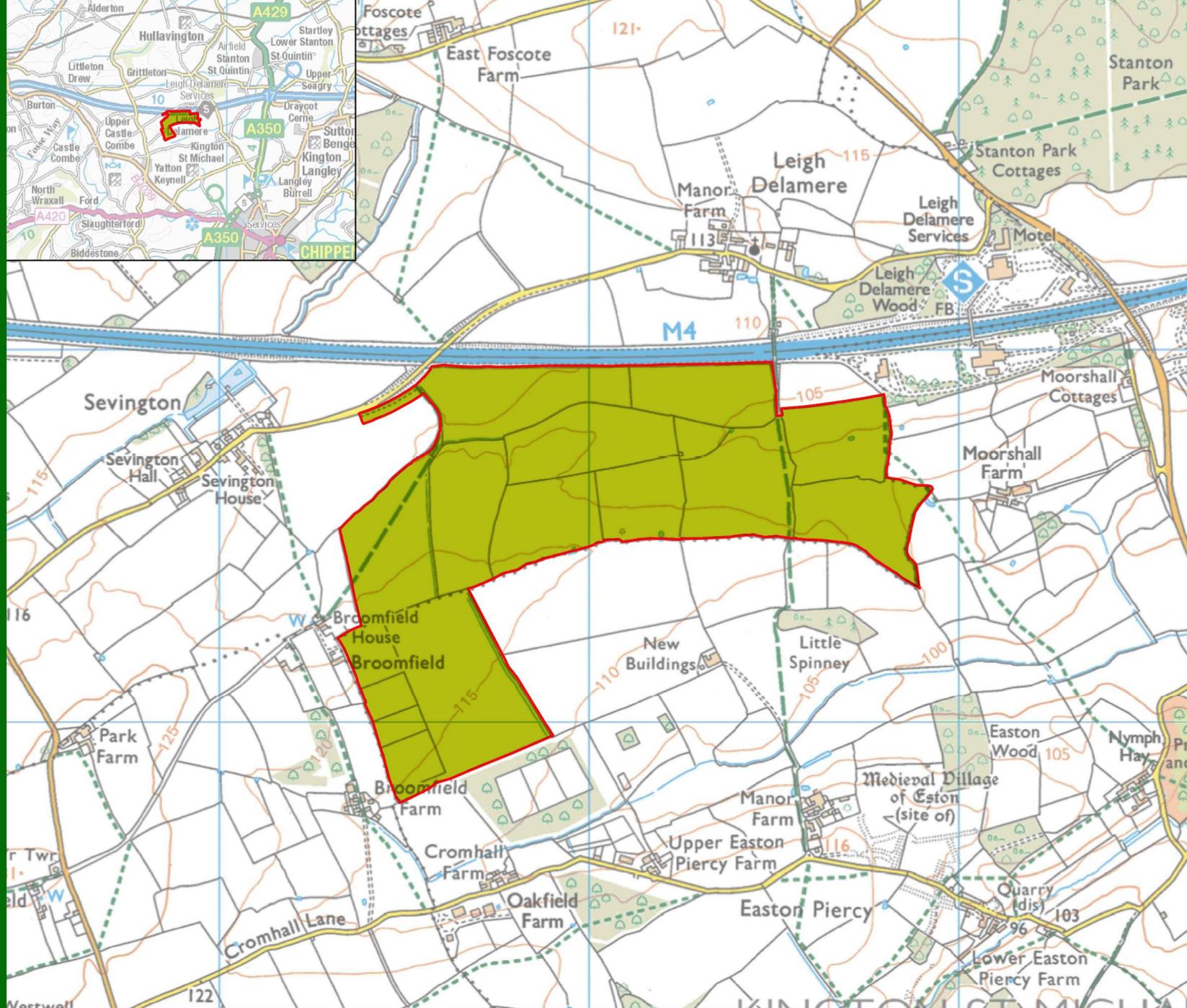
Government policy

- UK government first to declare Climate Emergency
 - Net Zero by 2050
- “As we build back better, we must build back greener.”
PM Oct, 2020
- Wiltshire declares Climate Emergency Feb 2019
 - Net Zero by 2030
- SWLEP Local Energy Strategy, 2018:
“The transition to a low carbon economy presents a huge opportunity”
- 86% support for solar – BEIS public attitudes tracker

“Now, as we
build back better
we must
**build back
greener.**”

**PRIME MINISTER
BORIS JOHNSON**

Site location



Why at Leigh Delamere?

- Nearby grid connection
- Not designated Area of Outstanding Natural Beauty
- Good natural screening and topography
- Not prone to flooding
- Low grade land
- Good access from M4
- Service station may benefit from green power

Generation and carbon savings

- Overall size of site **89 ha (220 acres)**
- 49.9 MW capacity will produce estimated annual generation of **60GWh**
- Equivalent to the consumption of **13,800 households**
(Based on average Wiltshire household consumption data)
- Saving **22,000 tonnes of CO₂ emissions each year**
(displacing electricity generated from natural gas)
- The equivalent of taking **4,800 average cars** off the road

WILDFLOWER MEADOWS

The land around and beneath the solar panels will be sown with native wildflowers and grasses to provide habitats for bees and other pollinators.



**BIRD AND
BAT BOXES**

These will be located around the perimeter of the site to encourage bats to roost and birds to nest.



SHEEP GRAZING

The land around the panels will be maintained by sheep grazing in autumn, after the meadows have seeded, so the land continues in agricultural use.



ENERGY STORAGE

Batteries store electricity from the solar array, enabling export to the grid when the power is needed most.



BEEHIVES

Local beekeepers will be invited to keep hives to make honey.

TREES AND HEDGES

Trees and hedges will be added to reinforce the screening of the site, which will also provide excellent connectivity, foraging and shelter for wildlife.



EDUCATIONAL BENEFITS

We organise trips to the solar farm so children from local schools can learn about science, technology and energy, and provide interpretation boards and benches for community visits.



SECURITY

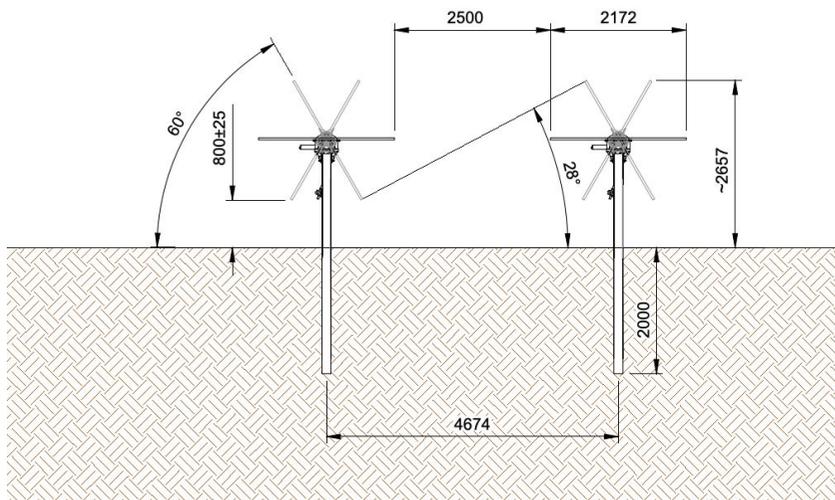
Traditional rural fencing and discreet CCTV cameras will be used around the perimeter of the site to maintain security.



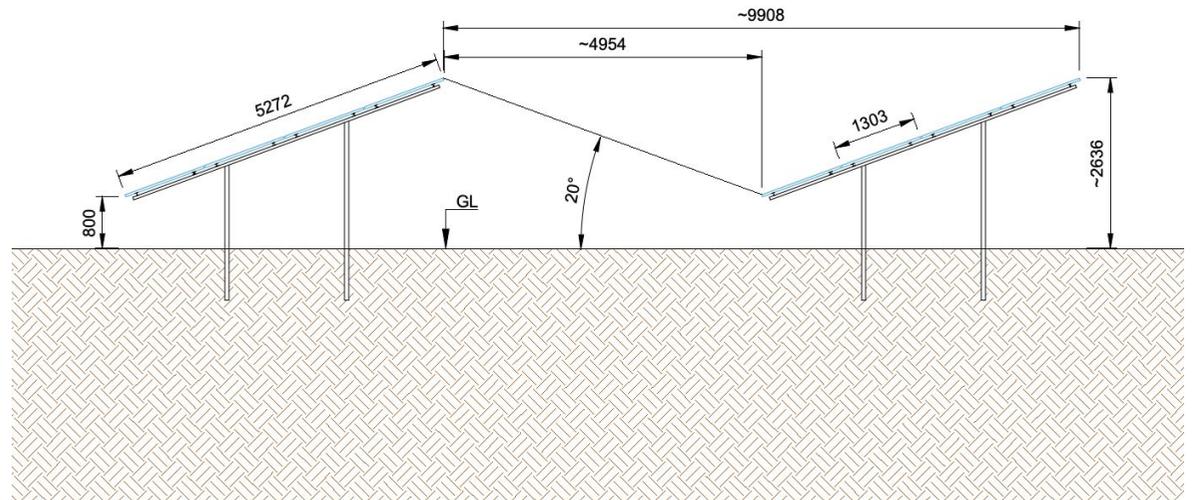
Key	
	Wildflower Planting Area

Solar panel design

DETAIL A | 1P Single tracker side view
M 1:75@A1



DETAIL B | 4 modules in landscape side view
M ####@A1



Traffic management

- Normal working hours
- Rush hour, school drop off and pick up avoided
- Peak construction 2 months with 15-20 HGV deliveries per day
- After construction: occasional maintenance visits



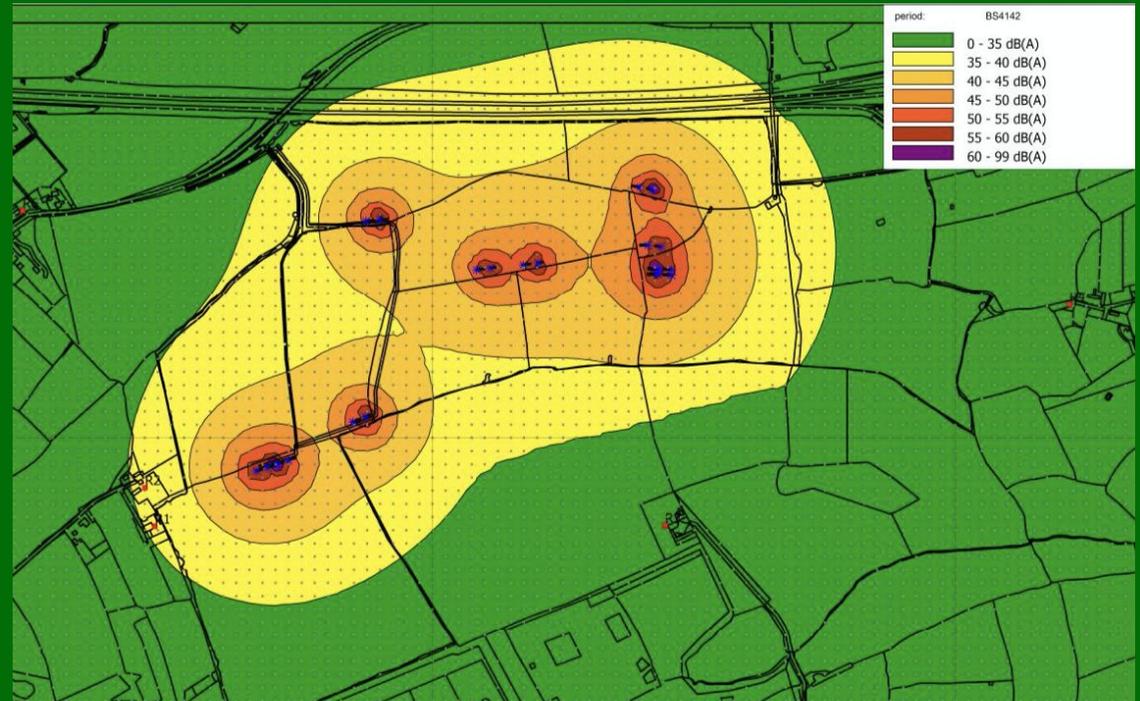
Noise

Construction

- A pile driver will be used for the first 2 months
- After that, construction noise will be low
- Overall the construction period is considered low impact in the context of the ambient noise levels

Operation

- Inverters and energy storage units emit noise from fans, falling away > 100m
- Therefore inaudible from the nearest homes in the context of ambient noise levels



Development timeline

Planning Application Submitted

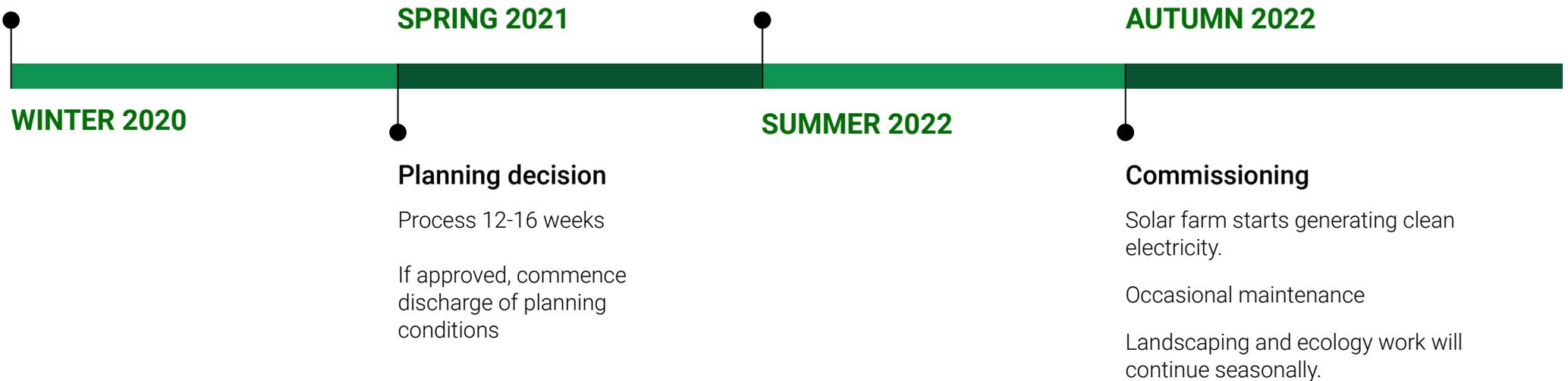
Consultation feedback →

Design adjustments →

Application submitted

Construction Starts

6-9 month construction period

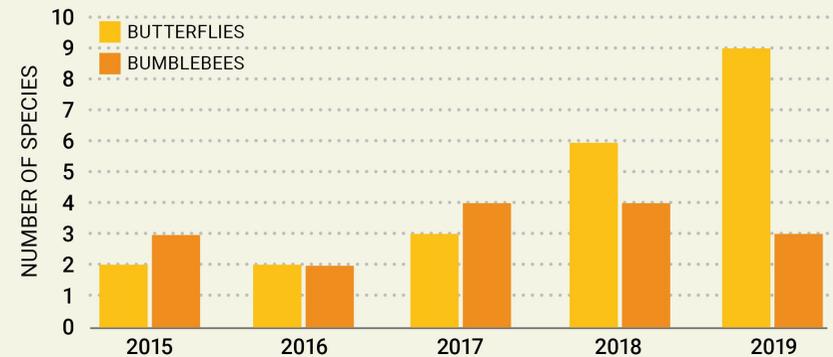


Proven track record with biodiversity

Eden is committed to addressing climate change and the biodiversity crisis through:

- Protecting and enhancing existing habitats and species of value
- Creating wildflower meadows across our solar farms
- Planting new native trees and hedgerows
- Adding ponds, bird and bat boxes and hibernacula to nearly every site
- Monitoring biodiversity annually to ensure the new habitats develop appropriately
- Sheep grazing to manage grass

SAWMILLS SOLAR FARM
DIVERSITY BUTTERFLIES + BUMBLEBEES 2015-19



Annual monitoring

Solar Site Pollinator Habitat Scorecard

For site and seed mix planning, designing, and assessment. Pollinator planting areas shall always be managed to prevent and eliminate invasive species as defined in 6 F.S.A. chapter 217 § 510(2). Scorecards must be renewed every three years or sooner. Standards below refer either to the site plan or an established site. The site area is consistent with the 'Limits of Disturbance' per Net Meter Rule 5.103.



1. Percent site's vegetative cover is flowering species (select one)

- 1-15 percent (5 points)
- 16-30 percent (10 points)
- 31-45 percent (15 points)
- 46-60 percent (20 points)

2. Flowering perennial species to be used (select all that apply)

- Includes species of Northern New England and adjacent New York provenance (5 points)
- Amount of seed to be planted (lbs/acre) is determined according to seed provider's recommended application rate and/or planting density for planted species in the target area (5 points)
- Includes only XT native or naturalized perennial species (15 points) *Species native to the biophysical region preferred.*

3. Cover diversity within the ground cover area (# of flowering plant species that constitute >2 percent cover each; select one)

- 1-9 species (5 points)
- 10-19 species (10 points)
- 20 or more species (15 points)

4. Seasons with at least 3 blooming species with >2 percent cover each (select all that apply)

- Spring (10 points)
- Early summer (5 points)
- Late summer (5 points)
- Fall (5 points)

Site Owner or Designer: Beltwon Power Limited

Date: 20/11/18

Vegetation Consultant: Wychwood Biodiversity

Seed Supplier:

Project Address: Sawmill, Devon

Target Seeding Date:

New Retrofit Revised Scorecard Attached Seed Mix Specs or Management Plans

The signatory certifies that the site site adheres to this Scorecard in accordance with 6 F.S.A. chapter 217. The practices called for in this Scorecard are subordinate to any requirements of applicable state permits, agency rules or guidelines. All solar projects must comply with applicable Vermont Public Utility Commission and Agency of Natural Resources permit conditions, even if those conditions conflict with practices favored by this Scorecard.

Upload completed scorecard at: go.aven.edu/pollinator-friendly-solar

Pollinator-Friendly Score: 93.0

Meets "Pollinator-Friendly Solar" Standard: 70-84
Provides Excellent Habitat: >85



SOLAR BIODIVERSITY SCORECARD

1. List, overview map and short description of protected sites within 3 km or the closest one	+2 pts	<input type="checkbox"/>	14. Each introduced or targeted non-protected species?	+1 pt	<input type="checkbox"/>
2. List of habitats, including biodiversity action plan habitat, within the surrounding 3 km radius	+1 pt for each km covered max 3	<input type="checkbox"/>	15. Each commitment obligated per planning but not fulfilled?	+3 pts	<input type="checkbox"/>
3. List of all species including protected species within the surrounding 3 km radius	+1 pt for each km covered max 5	<input type="checkbox"/>	16. Each commitment not obligated in planning?	-2 pts	<input type="checkbox"/>
4. List and short description of land cover categories (including management) within a 3 km radius	+1 pt for each km covered max 3	<input type="checkbox"/>	17. Address score (intermittent cultivation) being above 50 already and average of land if for introducing species and scoring of land if for internally restoring covered?	+3 pts	<input type="checkbox"/>
5. Map and description of main biodiversity value to improve biodiversity on site	+5 pts	<input type="checkbox"/>	18. Assessment of ecosystem service potential been undertaken using online tool?	+5 pts	<input type="checkbox"/>
6. Land cover or habitat map of the entire intended solar plant	+1 pt	<input type="checkbox"/>	19. Each ecosystem service that is actively managed?	+1 pt	<input type="checkbox"/>
7. Site map and description of PV technology	+2 pts	<input type="checkbox"/>	20. Each invasive species on on-site weed eradicated or properly controlled?	+1 pt	<input type="checkbox"/>
8. Each different habitat "scored to recover or restore" or value?	+2 pts	<input type="checkbox"/>	21. Each point in an orange check above, that has photo documentation included	+1 pt	<input type="checkbox"/>
9. If the habitat score is 0.1 because	+3 pts	<input type="checkbox"/>	22. Regular biodiversity monitoring plan in place	+5 pts	<input type="checkbox"/>
10. If the habitat score is within 0.1 because and because	+4 pts	<input type="checkbox"/>	23. Each biodiversity indicator that has monitoring method and sampling plan	+1 pt	<input type="checkbox"/>
11. If the habitat score larger than 1 because	+1 pt	<input type="checkbox"/>	24. Established in photo point monitoring (map and description)	+3 pts	<input type="checkbox"/>
12. Each habitat from above that are part of a biodiversity action plan? additional	+3 pts	<input type="checkbox"/>	25. Data is publicly available or has been used with a research institution?	+5 pts	<input type="checkbox"/>
13. Each habitat corridor that connects internally by reaching the center of the zone, or having a straight "90°" i.e. hedger, stone walls, fallen deadwood structures, streams, beech huts	+3 pts	<input type="checkbox"/>	26. Yearly update a publicly available Solar Biodiversity Commission Register?	+3 pts	<input type="checkbox"/>
14. Each microhabitat habitat: heath, moss, but heath, herbaceous	+1 pt	<input type="checkbox"/>	TOTAL		<input type="text" value="93.0"/>
15. Each introduced or targeted regularly protected species	+3 pts	<input type="checkbox"/>			

1. National Park Service 2008 National Natural Resources, 1001 Local Wildlife Sites etc.
2. Wildlife Conservation Society 2010 Biodiversity Conservation
3. National Biodiversity Institute
4. UK Biodiversity Action Plan
5. UK Biodiversity Action Plan
6. UK Biodiversity Action Plan
7. UK Biodiversity Action Plan
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25. UK Biodiversity Action Plan
26. UK Biodiversity Action Plan



Surveys and key results

Land

- 65ha parcel of 8 arable fields in arable rotation
- 24ha parcel of 4 sheep-grazed fields

Desktop survey

- No statutory wildlife sites within 2km

Field surveys

- Valuable hedgerows and some valuable trees
- Several species of breeding birds and bats identified
- One pond has great-crested newts
- Badgers – historic presence adjacent to site



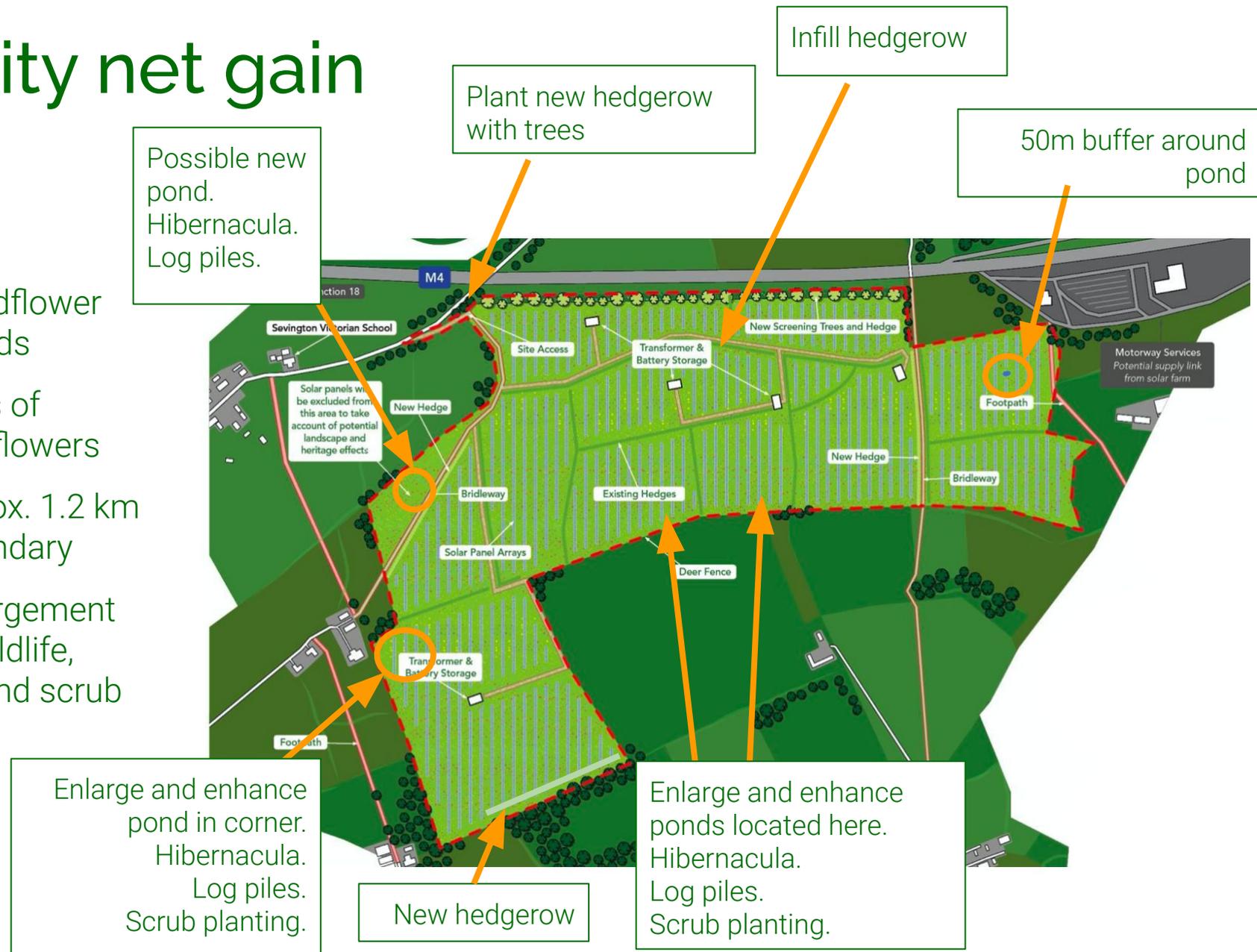
Protective measures

- No trees or hedgerows will be removed
- New trees and hedgerows will be added
- Construction set-backs from existing trees and hedges
- 50m buffer around pond with Great Crested Newts
- Best practice to be employed through construction



Biodiversity net gain

- Creation of 65Ha of wildflower grassland on arable fields
- New, wide field margins of tussock grass and wildflowers
- New hedgerow of approx. 1.2 km along the northern boundary
- Enhancement and enlargement of existing ponds for wildlife, including hibernacula and scrub



Leading community benefits

- **Community investment / shared ownership**
- **Community benefit funds:**
 - Microwave broadband to remote Devon village
 - Rooftop solar panels for primary school
 - Relationship counselling for families in need
 - Outdoor play equipment for a primary school



Local financial benefits: Leigh Delamere

Community fund:

- **£350 per MW**, index-linked
- **£17,500 a year** (for 49.9MW)
- Shared between local parishes
- For lifetime of solar farm

- **£2,000 a year** index-linked for educational benefits
- **£780,000 + total**

Business rates to council:

- **c. £100,000 pa**



Educational benefits



5,000 school children visits to our solar farms by 2019

- Educational support to local schools
- Annual visits to our sites with technical and/or environmental specialists
- Education packs tailored to National Curriculum for in-class teaching programmes
- Stanton and By Brook Valley primary schools, links to Victorian School

Landscape and Visual Impact Assessment – Year 0



- Hedges planted on nearest side of solar farm site from this perspective
- PV panels are visible



VIEWPOINT 4 Looking south east from footpath GRIT14

Landscape and Visual Impact Assessment – Year 5



- Hedges grow, providing significant screening after just 5 years
- Majority of panels are not visible; the tops of some panels can be seen however



VIEWPOINT 4 Looking south east from footpath GRIT14

Landscape and Visual Impact Assessment – Year 15



- After 15 years, hedge growth provides almost complete screening of solar farm site



VIEWPOINT 4 Looking south east from footpath GRIT14



Leigh Delamere West Motorway Services

Telecommunications mast on edge of Leigh Delamere services

Little Spinney Wood

Extent of site

VIEWPOINT 2 | Baseline Looking south from bridleway GRIT18 over the M4 motorway bridge



Leigh Delamere West Motorway Services

Telecommunications mast on edge of Leigh Delamere services

Little Spinney Wood

Extent of site

VIEWPOINT 2 | Year 0 Looking south from bridleway GRIT18 over the M4 motorway bridge



VIEWPOINT 2 | Year 5 Looking south from bridleway GRIT18 over the M4 motorway bridge



VIEWPOINT 2 | Year 15 Looking south from bridleway GRIT18 over the M4 motorway bridge



VIEWPOINT 2 | **Baseline** Looking south from bridleway GRIT18 over the M4 motorway bridge



VIEWPOINT 2 | **Year 0** Looking south from bridleway GRIT18 over the M4 motorway bridge



VIEWPOINT 2 | Year 5 Looking south from bridleway GRIT18 over the M4 motorway bridge



VIEWPOINT 2 | Year 15 Looking south from bridleway GRIT18 over the M4 motorway bridge



CONTACT US

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