

Planning Application Ref: 21/03380/FP Solar Farm on Land to the North and East of Great Wymondley, Hertfordshire

Response to The Landscape Partnership Reports dated 10th May and 5th July 2022 and updates to Policy and Need

This Technical Note provides a response and further information in the context of two consultation responses from The Landscape Partnership (TLP) on behalf of North Hertfordshire Council, in respect of a proposed solar farm north and east of Great Wymondley, Hertfordshire.

In addition, updates to national policy and the need for renewable energy development are provided

The first TLP report dated 10th May 2022 prompted the following design changes:

- The buffers between existing hedgerows, trees and woodlands were increased from 6m to 12m in response to comments from the wildlife trust. This will result in increased biodiversity gains with the increase buffers managed as species rich grassland and wildflower areas. An Updated Biodiversity Net Gain Metric is provided as Appendix to this Technical Note.
- Two new hedgerows have been added within the northern area to link the existing truncated hedgerow to the wider field pattern in response to comments from your landscape consultant. This will help restore elements of the landscape fabric and would have long term beneficial effect in terms of increased biodiversity gain, connectivity and landscape integration.
- Woodland copses have been added either side of the proposed site entrance to limit views into the site from Gravely Lane in response to comments from your landscape consultant.
- Additional woodland planting and gapping up of existing hedgerows on the western boundary is also proposed;
- The solar panels have been pulled back from Gravely Lane in the field nearest to Great Wymondley and additional woodland and hedgerow planting/gapping up is proposed along the western boundary towards Great Wymondley.

In addition

- Drainage attenuation features were added as per the recently submitted updated FRA and technical note. Solar panels have been omitted from these locations
- Permissive footpaths were also provided within the increased buffers and would provide safe permissive footpath links from the existing public right of way near Milksey Cottages. Two links to the existing Hertfordshire way would be provided. One parallel to Gravely Lane and one to Gravely Lane. This would enable safe circular walking routes for the life of the Proposed Development

The design changes were illustrated on the following drawings which were submitted to North Hertfordshire on 1st June 2022:

- 3004-01-003 General Arrangement (Rev D)
- 3004-01-012 Landscape Proposals (Rev D)

The TLP report dated 5th July 2022 reviews the changes and confirms that:

- The reduction in the area of solar panels to the north of Graveley Road and proposed woodland planting, when established, would help screen views from Graveley Road when travelling west;
- New native hedging to the north east and west and a length of proposed woodland to the south west boundary of the field with reduced solar panels are of benefit and partly meets TLP previous recommendations. The changes include all the areas of new planting recommended by TLP in their May 2022 report.
- Solar panels in the southwest corner of the central field have been omitted and have been replaced by a copse woodland planting. This will screen views when travelling east along Graveley Lane. This change is recognised as a benefit and that it meets TLP's previous recommendations.
- The TLP July report recognises the inclusion of permissive footpath links as an added benefit through the provision of enhanced connectivity and safer routes for pedestrians. The TLP report recommends a new hedge to the south of the panels in the field that has had panels partially omitted and additional hedgerows along the solar farm boundary fences to screen views from the proposed permissive paths. This has been addressed as follows:
 - The proposed hedgerow along the southern boundary of the northern parcel of land, to the east of the northern site access has been moved slightly so that the permissive footpath can be located to the south of the hedge. As such, it would benefit from screening once the hedge is established. This is considered a very minor change to the previously submitted landscape proposals and is illustrated on the following updated planning drawings:
 - 3004-01-003 General Arrangement (Rev E)
 - 3004-01-012 Landscape Proposals (Rev E)
 - The sections of permissive footpath to the west of the northern site entrance would remain open (apart from where they are already screened by proposed/existing vegetation). Interpretive boards would be provided in respect of climate change, net zero, how solar farms work and biodiversity benefits providing an educational aspect to the information displayed. The applicant is willing and able to work with local schools to offer tours and educational opportunities to local young people and has successfully implemented similar initiatives at other projects which it has developed. It is considered that these more open sections, with view of the solar farm, would add variety and opportunities to link the provision of the routes with the renewable energy development and wider environmental benefits. Any new hedgerow to the south of the panels would subdivide the field and would need to be removed following decommissioning to allow future arable use.
- The TLP report recommends that the legal status of the permissive routes be tied to the life of the solar farm or ideally be made definitive rights of way for the long term. Permissive paths, sometimes referred to as concessionary paths, are not public rights of way and the public do not have a legal right to use them. They are provided by agreement with landowners and can play an important role in improving public access to the countryside. Providing a connection between existing public rights of way where gaps currently exist in the network. A permissive path is not public rights of way and would not be added to the definitive map. The applicant has agreed with the freehold owner that the permissive paths can be provided for the life of the proposed development and it is suggested that these

would be waymarked and signs provided confirming their permissive status. The paths would need to be temporarily closed for only 1 day per year to prevent uninterrupted use 'as of right' from accruing. It is suggested that the final signage, way markers and interpretative panels could be secured through a suitably worded condition.

- The TLP report suggests that the detention basin shown on the updated planning drawings extends to the permissive footpaths and as such may lead to seasonal access problems along the route. The detention basin would actually be located upstream of the permissive path as illustrated in the extract below. As such there would be no periods when the route would be inundated and seasonal access issues would not occur.



Update to Policy & Need Situation

The latest version of the 'Future Energy Scenarios' (FES) document was published in July 2022. The FES considers four possible scenarios based around two drivers: the speed of decarbonisation and the level of societal change.

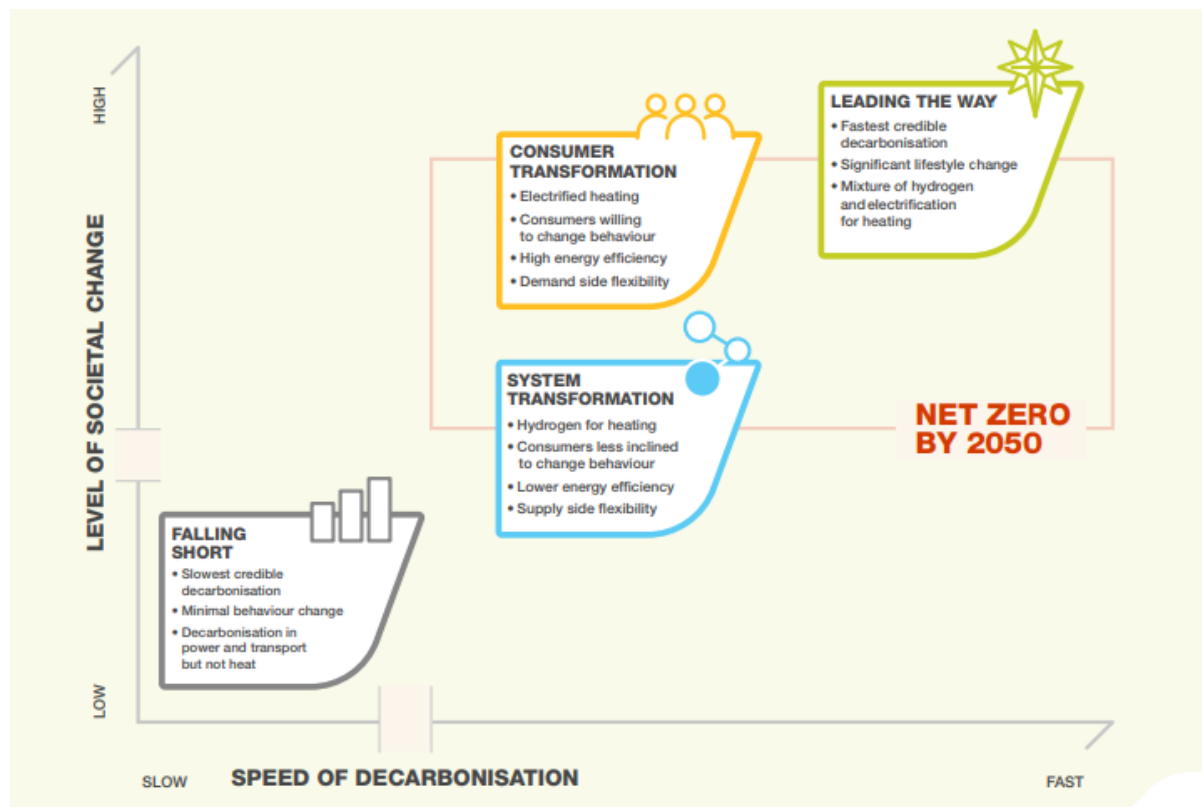
The four scenarios are:

- Falling Short
- Consumer Transformation
- System Transformation

- Leading the Way

They are illustrated in Chart 1 below.

Chart 1: Future Energy Scenarios: Scenario Matrix¹



All four scenarios have net zero at their core and explore different pathways to achieving this.

The four headline messages are:

1. Significantly accelerating the transition to a decarbonised energy system can help to address security and affordability concerns at the same time as delivering Net Zero milestones. (emphasis added)
2. Consumer behaviour is pivotal to decarbonisation – how we all react to market and policy changes, and embrace smart technology, will be vital to meeting Net Zero..
3. Reforming energy markets to improve price signals will help unlock the flexible solutions needed to integrate renewables efficiently..
4. Strategic investment in the whole energy system is urgently required to keep pace with Net Zero ambitions and strengthen energy security. (emphasis added)

¹<https://www.nationalgrideso.com/document/263951/download> Page 7.

Page 163 of the FES Report sets a clear target of upto 70GW of solar by 2035 to be on the path to deliver net zero by 2050. There was only 13.2GW of installed solar in 2021. Similarly, the FES Report sets a clear target of up to 37.3GW of electricity storage capacity by 2035. There was only 4GW of installed electricity storage in 2021. Clearly, delivering these ambitious targets will require significant investment in solar electricity generation and electricity storage across the UK over the next decade.

All scenarios:

- are UK wide. The scenarios include regional variations in how the energy landscape could develop, where evidence is available;
- take a whole system view. They explore a future where the different parts of the energy market work together in new ways to maximise efficiency and value for consumers;
- include a mix of technologies, but show different levels of adoption; and
- model progress from today to 2050.

Consumer Transformation and System Transformation both hit the target of zero emissions in 2050, and Leading the Way achieves the target slightly earlier in 2047. Falling Short would not achieve net zero, with a reduction of 80% compared to the level in 1990.

In respect of electricity supply, net zero will require significantly higher levels of electricity generation. In 2050, it is envisaged that four technologies will produce over 90% of electricity generation: wind, solar, nuclear, and Bioenergy and carbon capture and storage (BECCS). Over the past decade, growth in renewable generation has led to a significant fall in the carbon intensity of electricity supplies in Great Britain. As renewable technologies continue to become cheaper, and more investment is made this trend is expected to continue.

In addition to requiring more capacity for electricity generation, it is envisaged that there will be greater decentralisation compared to today, representing up to 41% of generation capacity by 2050. Decentralisation refers to how close production and management of energy is to the end consumer, with closer links between energy supply and demand. The Proposed Development would be a decentralised energy source supplying the local transmission network.

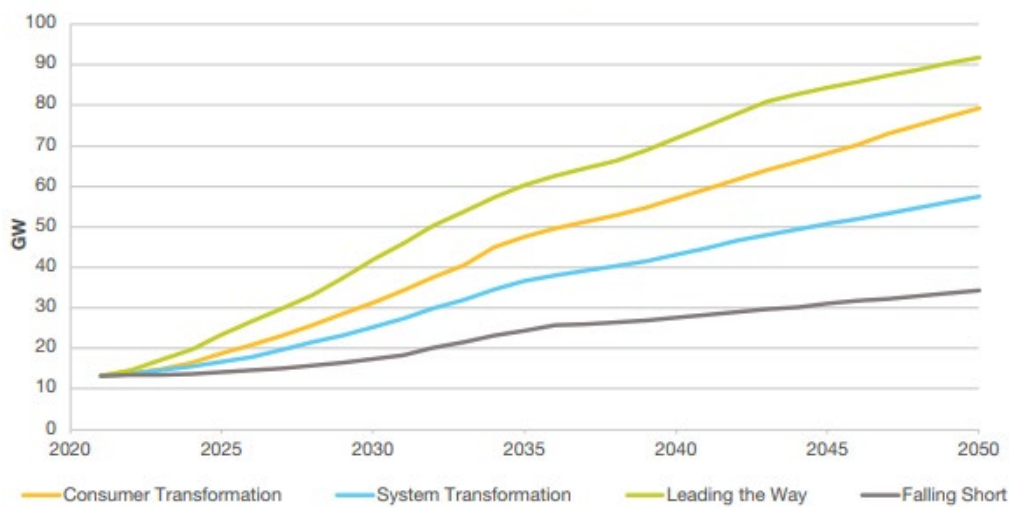
In respect of renewable energy, the FES sets out that there is strong policy support for continued growth of wind and solar to drive decarbonisation.

Cost reductions and the eligibility of solar PV for Contracts for Difference support, and co-location with storage are expected to boost solar growth in the 2020s, which would coincide with the Proposed Development. Post-2035 significantly higher levels of solar generation are forecast as increased electricity demand leads to greater demand for renewable generation.

Chart 2 clearly illustrates that significant increases in installed solar capacity will be required under all scenarios between now and 2050. The largest requirement will be for the Consumer Transformation and Leading the Way Scenarios.

Chart 2: Solar capacity by scenario²

Figure ES.E.16: Installed solar generation capacity (GW)



The FES Data Workbook which accompanies the FES report provides the detailed annual breakdown of solar capacity in Giga Watts (GW) for each year up to 2050. The information is summarised below for this year and projects forward to 2030, 2035 and 2050.

	2022 (GW)	2030 (GW)	2035 (GW)	2050 (GW)	2022 - 2030 Increase (GW)
Consumer Transformation	14	31.3	47.4	79.3	17.3
System Transformation	13.8	25.2	36.6	57.4	11.4
Leading the Way	14.6	42.0	60.2	91.8	27.4
Falling Short	13.4	17.3	24.4	34.3	3.9

Table 1: NG ESO: Solar Capacity by Scenario (GW)

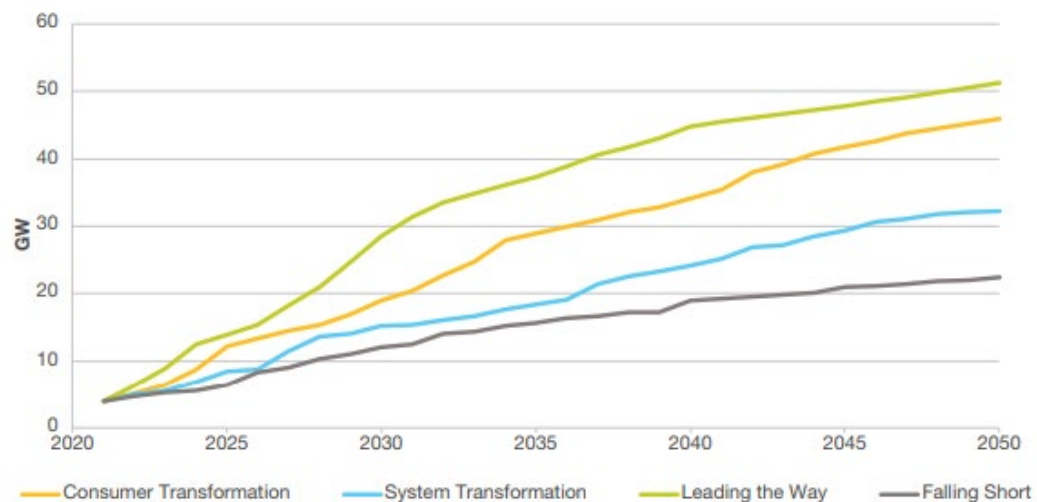
² <https://www.nationalgrideso.com/future-energy/future-energy-scenarios#fullsuite> . Taken from Figure ES.E.16 of the FES Data Workbook..

Under all scenarios an increase in solar capacity is required between now and 2030, with further increases after that. Even under the Falling Short scenario an increase of 3.9 GW of capacity is required between now and 2030, but this increases to 11.4 GW for System Transformation, 17.3 GW for Consumer Transformation and 27.4 GW for Leading the Way. Given the legally binding commitment to zero carbon the higher figures are considered more appropriate to use as a reference, especially as Falling Short does not achieve zero carbon.

Chart 3 clearly illustrates that significant increases in installed electricity storage capacity will also be required under all scenarios between now and 2050. The largest requirement will be for the Consumer Transformation and Leading the Way Scenarios.

Chart 3: Electricity Storage capacity by scenario³

Figure ES.E:26: Electricity storage capacity, excluding V2G and hydrogen storage (GW)¹³



'Storage' here excludes vehicle to grid and hydrogen as stores of energy.

The FES Data Workbook which accompanies the FES report provides the detailed annual breakdown of electricity storage capacity in Giga Watts (GW) for each year up to 2050. The information is summarised below for this year and projects forward to 2030, 2035 and 2050.

³<https://www.nationalgrideso.com/future-energy/future-energy-scenarios#fullsuite> . Taken from Figure ES.E.26 of the FES Data Workboo .

	2022 (GW)	2030 (GW)	2035 (GW)	2050 (GW)	2022 - 2030 Increase (GW)
Consumer Transformation	5.1	19.0	28.9	45.9	13.9
System Transformation	4.9	15.2	18.4	32.3	10.3
Leading the Way	6.2	28.5	37.3	51.3	22.3
Falling Short	4.7	12.0	15.6	22.4	7.3

Table 4.2: NG ESO: Electricity Storage Capacity by Scenario (GW)

Under all scenarios an increase in storage capacity is required between now and 2030, with further increases after that. Even under the Falling Short scenario an increase of 7.3 GW of capacity is required between now and 2030, but this increases to 10.3 GW for System Transformation, 13.9 GW for Consumer Transformation and 22.3 GW for Leading the Way. Given the legally binding commitment to zero carbon the higher figures are considered more appropriate to use as a reference, especially as Falling Short does not achieve zero carbon.

The Proposed Development, in combination with other large scale solar and electricity storage projects are essential to enable the UK to achieve its 2030 requirement interim target and to decarbonise the electricity system by 2035, enroute to achieving net zero by 2050.

British Energy Security Strategy (2022)

On the 7th April 2022 the Government published their long awaited and overdue Energy Security Strategy to the backdrop of soaring global energy prices and increased energy security fears in the wake of Russia’s invasion of the Ukraine. The objective of the Energy Security Strategy is to set out a clear way forward to providing the energy we need in a safe, secure and affordable way, and at the same time ensuring that we do all we can to meet our net-zero commitments. The Prime Ministers foreword states that; “We’re going to take advantage of Britain’s inexhaustible resource of wind and – yes- sunshine.”

The Strategy states that: “Accelerating the transition from fossil fuels depends critically on how quickly we can roll out renewables. Our ‘Ten point plan for a green industrial revolution’ has already put the UK at the forefront of many renewable technologies, delivering £40 billion of private investment in under 2 years. By the end of 2023 we are set

to increase our capacity by a further 15%.” Turning specifically to solar, the Strategy recognises the opportunities open to us to harness the suns power. It states: “The cost of solar has fallen by around 85% over the past decade...We expect a five-fold increase in deployment by 2035. For ground-mounted solar, we will consult on amending planning rules to strengthen policy in favour of development on non-protected land, whilst ensuring communities continue to have a say and environmental protections remain in place.” (emphasis added)

The five-fold increase in solar deployment referenced in the British Energy Security Strategy means that solar will need to increase from the existing 14GW to 70GW by 2035, if the strategy targets are to be delivered. These targets match the rate of increase forecast in National Grid’s Future Energy Scenarios Report 2022. It is clear that the Government solar policy is to support the broad roll out of opportunities where they are not identified in high value protected landscapes and designations. The Proposed Development will help the UK address the identified energy crisis by bringing forward a sustainable solution within an appropriate area of the District and in advance of 2030.

Based on levelized costs set out in Electricity Generation Costs 2020⁴ large scale solar has the lowest levelised cost of all electricity generation and as such is best placed to start reducing energy costs to consumers to help with the costs of living crisis in the short term.