GREENING THE GREAT GRID UPGRADE

A new vision for landscapes and communities in East Anglia

MAY 2024

Suffolk Preservation Society

The countryside charity
Essex

The countryside charity
Norfolk

About the report

This report, commissioned by CPRE Essex, CPRE Norfolk and the Suffolk Preservation Society (representing CPRE, the countryside charity in Suffolk), was funded by the CPRE East of England Regional Group.

It was authored by Dr Andy Tickle, an independent planning and campaign consultant who has worked on energy, planning and environmental issues since 1984, as an academic, campaigner and policy consultant. Previous clients have included CPRE, community groups, Greenpeace, WWF UK, WWFN (International), Friends of the Earth and UK government departments, including DfID and DBEIS.

Wortham Ling from Doit Lane, Norfolk/ Suffolk border. Credit: Angela Payne

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Glossary

Term/acronym	
25YEP	25 Year Environment Plan
AC	Alternating current
AONB	Area of Outstanding Natural Beauty (National Landscape)
CPRE	CPRE, the countryside charity
(t)CSNP	(transitional) Centralised Strategic Network Plan
DC	Direct current
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
DESNZ	Department of Energy Security and Net Zero
DLUHC	Department for Levelling Up, Housing and Communities
DND	Detailed Network Design
DSR	Demand side reduction
EGA	Energy Grid Alliance (Australia)
EirGrid	Electricity Transmission System Operator (TSO) for Ireland
EN-1	Overarching National Policy Statement for Energy (EN-1)
EN-5	National Policy Statement for Electricity Networks Infrastructure (EN-5)
ENG	Environmental net gain
ENSG	Electricity Networks Strategy Group
ESO	National Grid Electricity Supply Operator (NESO by end 2024)
ETDP	Electricity Transmission Design Principles
ETYS	Electricity Ten Year Statement
FES	Future Energy Scenarios
GGU	Great Grid Upgrade
GW	gigawatts
HE	Historic England
HND	Holistic Network Design
HVDC	High voltage direct current
IAP2	International Association for Public Participation
IC	Interconnector
MCS	Micro Certification Scheme
N2T	Norwich to Tilbury (proposed line)
NGET	National Grid Electricity Transmission
NL	National Landscape (formerly AONB)
NPS	National Policy Statement(s)
NOA	Network Options Assessment
NSIP	Nationally Significant Infrastructure Project
OCSS	Offshore Co-ordination Support Scheme
OHL	Overhead line
Ofgem	Office of Gas and Electricity Markets
OTNR	Offshore Transmission Network Review
SEA	Strategic environmental assessment
SEC	Sealing end compound
SCC	Suffolk County Council
SLES	Smart Local Energy Systems
SPS	Suffolk Preservation Society
SSEP	Strategic Spatial Energy Plan
TAAP	Transmission Acceleration Action Plan
UN SDG	United Nations Sustainable Development Goals
WTP	Willingness to pay

Preface by CPRE Essex, CPRE Norfolk and the Suffolk Preservation Society

How to achieve a Great Green Grid

The UK is in the midst of the largest overhaul of the electricity grid in generations. The challenge of meeting net zero targets, growth of offshore wind power generation and a wider target to decarbonise the electricity system are driving the *Great Grid Upgrade*. East Anglia is bearing the brunt of this with many proposals for low carbon power and grid-related infrastructure being built or proposed across the three counties of Norfolk, Suffolk and Essex.

The announcement by National Grid (NGET) of its intention to transmit offshore wind energy from Norwich to Tilbury via a pylon route has been met with widespread opposition. The significant threat to the East Anglian countryside and its communities has led CPRE branches in Essex and Norfolk and the Suffolk Preservation Society (SPS, who represent CPRE in Suffolk) to commission this report.

Our report aims to shine a light on the inequitable impacts of the *Great Grid Upgrade* on East Anglia's countryside and communities and call for and secure better grid planning. It addresses the short-term changes required to green the *Great Grid Upgrade* in East Anglia and reflects on how to put in motion better long-term planning for net zero.

Decisions taken now will have long term consequences. A new pylon route is a scar upon our countryside and will be a feature of the East Anglian landscape for a century or more.

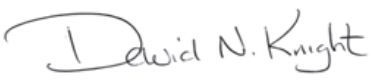
This report argues that to protect and enhance our landscapes, amenity, biodiversity and heritage, new overhead pylon lines must be a last resort.

We support a green grid planning hierarchy which begins with a robust needs case for new infrastructure - prioritising the use of smart grids and flexible systems to better manage demand: promoting energy storage and efficiency; and generating energy closer to demand centres to reduce the need for large scale power transmission over great distances. Options including offshore and underground solutions and alternative technologies should then be prioritised. If a decision is still made to proceed with new onshore overhead pylon lines, the proposals must deliver significant environmental net gain, landscape scale planting to mitigate visual impacts, and meaningful community benefit schemes. We reject socially unjust payments to householders affected by infrastructure.

We need a strategic planning system which will secure long term co-ordinated solutions to deliver environmental net gain and achieve earlier and more meaningful community participation. Allowing communities to be properly part of the grid transformation, rather than being victims of proposals, will increase social consent and speed up the consenting process.

In order to achieve this, the report sets out a new green planning vision and makes a series of recommendations which offer practical, workable solutions which dovetail into the ongoing development of new grid planning, design and delivery mechanisms.

Chris Dady
CPRE NORFOLK



David Knight
CPRE ESSEX

Robert Townshend
SUFFOLK PRESERVATION SOCIETY

Executive summary

THE FACTS

1 East Anglia is bearing the brunt of the *Great Grid Upgrade*, with two major pylon lines being proposed: Bramford to Twinstead[i] reinforcement and a new 183km transmission line from Norwich to Tilbury[ii]. I n addition, many other proposals for low carbon power and grid-related infrastructure are being built or proposed across Norfolk, Suffolk and Essex including Sizewell C, commercial solar 'farms', grid substations, converter stations and interconnector landings.

2 Achieving net zero is essential but it is the way that it is done – without unacceptable impacts on communities, biodiversity, landscape and heritage assets – that is now key. A green energy revolution is necessary, but it can and must avoid ruining precious countryside. In an already crowded region, long swathes of new pylons and overhead lines are no longer acceptable.

3 CPRE Essex, CPRE Norfolk and the Suffolk Preservation Society have commissioned this report to bring about positive change to the electricity transmission planning system and better outcomes for landscapes, communities, heritage and biodiversity. This report calls for a new 'green' grid, fit for 21st century multi-purpose landscapes. To achieve the social licence required for the *Great Grid Upgrade* there needs to be a national conversation about place-making for electricity transmission infrastructure.

THE IMPACTS OF THE GREAT GRID UPGRADE

4 The UK needs to meet its net zero targets at pace. Although installed offshore wind capacity has grown to 15GW, UK ambition has been scaled up significantly with a target of 50GW by 2030. Much of this will be off the coast of East Anglia. This and the wider target to decarbonise the electricity system by 2035 are now the main drivers of the *Great Grid Upgrade*.

5 This report shows a damaging concentration of major grid infrastructure projects in East Anglia and the wider east of England area. Of the 12 projects that make up the *Great Grid Upgrade*, seven will impact on eastern England, including three major overhead lines (Bramford to Twinstead; Norwich to Tilbury; Grimsby to Walpole). Pylons and overhead lines affect landscape quality and communities profoundly, with knock-on negative effects on amenity, tourism and local economic development. If significant widespread impacts from these proposals are to be avoided, there will have to be a sea change in how they are planned, designed and delivered.

THE NEED FOR CHANGE

6 Currently new grid infrastructure schemes must deliver best value and promote the 'cheapest consentable solution'. This means overhead lines to which there is invariably considerable opposition. For this reason, planning is inefficient, slow and unpopular. If community confidence, and social licence, is to be won for the *Great Grid Upgrade*, more collaborative and innovative planning is needed urgently. This involves a fresh approach to the needs case.

7 Over-estimating need will lead to overbuilding of the network and creating costly stranded assets. This is a major concern when the impacts of infrastructure on communities and the environment are significant and lo*ng lasting. We need a smarter grid that better utilises demand management, energy storage and generation closer to local demand to reduce the need for, and amount of long-distance electricity transmission.*

8 Much greater ambition for locational demand, improved energy efficiency, distributed energy and flexibility is required to avoid overprediction of future energy need and grid system overbuild. Independent analysis of the proposed Norwich to Tilbury (N2T) scheme (Hiorns report) unhappily illustrates the continuing dangers of the current 'predict and provide' approach which pervades the *Great Grid Upgrade* stating that *'it is too early to conclude that N2T presently represents the best solution in meeting future system needs'.*

[i] Bramford to Twinstead project map
https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020002/EN020002-000526-2.2%20Location%20Plan.pdf

[ii] Norwich to Tilbury interactive project map
https://norwichtotilburymap.nationalgrid.com/

9 This report outlines the ongoing and new defects in the current model of strategic planning for grid infrastructure, which is a crucial element in planning for net zero. The 'take home' message of this report is that the new system from 2024 onwards will likely fail to deliver due to an emphasis on speed at all costs, over-predicted demand, and lack of transparency and wider engagement in the future system design.

10 Even taking into account the addition of significant community benefits, the new grid planning system (being implemented from 2024) will not resolve this problem. This stems fundamentally from a) undervaluing the intrinsic values of the countryside: beauty, wildness, history, tranquillity and b) assuming there is infinite capacity for change done well. That may be so for some forms of development but it is not the case for further swathes of pylons.

THE SOLUTIONS

11 The report highlights both defects in strategic and NSIP planning that risk the delivery of the *Great Grid Upgrade*. The cheapest and simplest option of overhead lines are being prioritised by government a strategy which risks incalculable damage to landscapes, communities and social licence. This is unacceptable.

12 This report proposes changes that would reduce impacts, enhance outcomes, increase social acceptability and speed up consenting and delivery. There are significant policy opportunities through government workstreams that are evolving in 2024, including the Electricity Transmission Design Principles (ETDP), the Centralised Strategic Network Plan (CSNP) and the Strategic Spatial Energy Plan (SSEP) – with the key proviso that stakeholder engagement in these processes is widened significantly.

13 First, a more pro-active approach to planning and alternatives is required if the onshore impacts of electricity transmission are to be minimised in rural areas. This is set out in our new green planning vision. From the outset we assume that a reduced volume of onshore schemes is achieved by increased system flexibility and offshore solutions. We then anticipate that improved scheme designs arise from better environmental options at the strategic network design and planning stage.

14 Second, a more determined approach to creating a truly offshore grid must be facilitated both in policy and guidance. The latter should include a green grid planning hierarchy approach where a high-level policy presumption is set for offshore/subsea connections, where feasible. Greater ambition is required so that the ESO 2020 OTNR prediction of an integrated approach reducing infrastructure (cabling and onshore landings) by 50% can be realised.

15 Third, there must be a substantive shift in policy and guidance to prioritise undergrounding of new lines where there will be significant impacts on landscapes and communities. National 'willingness to pay' (WTP) studies have consistently indicated strong public support for undergrounding in valued landscapes. Whilst rising energy prices in recent years may have dented consumers' WTP, the public's desire for wider undergrounding – in the face of a significant expansion of the grid – is unlikely to abate. We acknowledge, however, that undergrounding is not a universal panacea and the significant visual benefits must be weighed against potential conflicts with land use, ecology and heritage assets.

16 Fourth, technological innovation has a huge role to play in delivering a new green grid. This includes the rapid adoption of new conducting materials, such as superconductors, that allow existing lines to carry up to double the power (obviating need for new lines in some cases); increasing the use of HVDC cabling to facilitate greater use of undergrounding (where appropriate); and new, lower impact designs for pylons.

17 If offshore grid options are ruled out, the onshore planning solution is to design better schemes, which fully mitigate – predominantly by undergrounding – the severe landscape and amenity effects of pylons and overhead lines, and also provide significant environmental and community benefits. Such schemes will clearly be more readily consentable. Holistic local and regional benefits, which also accrue nationally (say, towards meeting UK nature recovery targets) would be welcomed by stakeholders and communities and speed up delivery.

18 The drafting of the Electricity Transmission Design Principles (scheduled for consultation late in 2024) is an important opportunity for new guidance that could facilitate a significant step change in the delivery of a grid fit for the 21st century. It could deliver much needed environmental net gain (ENG) and nature recovery and, through co-design of widespread local enhancements, significantly ease social licence and thereby speed the consenting of forthcoming grid infrastructure.

THE PROBLEM FACING COMMUNITIES

19 It is clear that the current way of engaging with affected communities – by way of repeated, complex consultation material (huge volumes of highly technical and indigestible information) – is insufficient to secure social licence. In terms of a community engagement exercise, recent consultations (e.g. on the Norwich to Tilbury line) have failed to engender greater transparency, trust or co-operation with affected communities, especially as few meaningful concessions are ever made.

20 The Government's new proposals to improve early consultation and introduce community benefit payments are very likely to further dilute trust, increase opposition and dissolve any credible opportunity to acquire social licence. Social licence is lost when there is lack of trust in the regulatory process and further planning reform (as recommended through this report's new green grid planning vision and green grid planning hierarchy) will be key to reducing opposition to new grid infrastructure.

A BETTER DEAL FOR COMMUNITIES

21 In the planning and delivery of a new green grid, there must be increased community input into decisions affecting routeing, site selection, minimising effects, mitigating adverse effects, offsetting and enhancements.

22 Applying the government's community benefits regime must be dependent on proposed onshore schemes firstly being acceptable in land use planning terms: overall impacts minimised and provision of significant environmental net gain. The way in which community benefits will then be delivered is crucial to the scheme achieving social licence. Benefits in the form of direct payments to households should be avoided as they are socially inequitable.

23 Community benefits should focus on community energy projects and adding landscape enhancement projects to a nature recovery workstream. For this latter ambition, we see scope for community benefit funds to help enhance the wider environmental net gains we propose to be part of the new Electricity Transmission Design Principles.

1 Introduction

THE FACTS

1.1 We are in the midst of what has now been dubbed the '*Great Grid Upgrade…the largest overhaul of the electricity grid in generations*'[1]. East Anglia is bearing the brunt of this at present, with two major new pylon lines being proposed: the long-planned Bramford to Twinstead reinforcement[2] and now a new 183km transmission line from Norwich to Tilbury.

1.2 Many other proposals for low carbon power and grid-related infrastructure are being built or proposed across the three counties of Norfolk, Suffolk and Essex including new nuclear plant at Sizewell, large greenfield solar 'farms' (often with battery/storage facilities), new or extended substations, new converter stations (converting direct current, DC, power from offshore wind farms to alternating current, AC, as used by the onshore electricity transmission system), interconnector landings (conduits into the grid for power import from and export to Europe) and significant overhead line (OHL) upgrades.

1.3 Because of these significant threats to the East Anglian countryside and communities, CPRE branches in Essex and Norfolk and the Suffolk Preservation Society (SPS, who represent CPRE in Suffolk) have commissioned this report with the intention to bring about positive change in the electricity transmission ('grid') planning system and better outcomes for landscapes, communities, heritage and biodiversity.

1.4 Looking more widely to the East of England region and nearby counties, National Grid ESO's Holistic Network Design (July 2022) also shows major new overhead lines will be required across Lincolnshire, Cambridgeshire and Hertfordshire by 2030, in addition to other upgrade and reinforcement works (see Table 1, p.13). Similar proposals are being worked up for many other regions of England (see Appendix: Table 4) to enable rapid progress towards decarbonising our economy and meeting vital climate change targets. Major grid projects also threaten valued landscapes in Scotland and Wales.

1.5 Achieving net zero as soon as possible is obviously essential but it is the way that it is done, without unacceptable impacts on communities, biodiversity, landscape and heritage assets, that is now the key question, both locally, regionally and nationally.

THE CHALLENGE

1.6 It is common ground that the scale of the required grid upgrade (and the switch to low carbon sources of energy that is driving it) represents a huge 'once in a century' challenge, not faced since the inception of the national grid in the 1920s and its upgrades in the 1950s and 1960s to become the 'supergrid'. Both the scale and significance of the current grid upgrade now requires urgent national, regional and local conversations about better planning and place-making.

1.7 We argue that without a new and improved form of national conversation about place-making for electricity transmission infrastructure, then the social licence required for the *Great Grid Upgrade* will be absent or insufficient.

1.8 This report aims to provide a compelling case for engendering that conversation and how – together with other key measures – to reduce the current friction in the planning system and thereby speed up delivery. It also needs to be a socially just transition for everyone, both in our cities and industrial areas where much of our electricity is consumed and for rural communities who are bearing the brunt of energy schemes.

1.9 Although the government's recently proposed community benefits package is part of the solution, much more will be required in terms of proper engagement with rural communities if the social licence for grid upgrades is to be won.

1.10 Furthermore, there need to be significant improvements to the strategic planning of the grid upgrades, notably enhancing transparency and democratic participation, and greater scheme ambition in respect of holistic, landscape scale mitigation and enhancement along route corridors, including offshore connections affecting sensitive marine environments.

[1] https://www.nationalgrid.com/the-great-grid-upgrade

[2] Given that the Bramford-Twinstead project has now reached an advanced stage (DCO examination just completed), this scheme is largely regarded as 'out of scope' of the recommendations of this report; however, examples and learning from the scheme's development as part of the Great Grid Upgrade in East Anglia are cited where appropriate.

THE SCOPE OF THIS REPORT

1.11 In short, this report aims to:

- **overview the scale of the *Great Grid Upgrade* threat in East Anglia and the East of England, the likely impacts of the projects proposed and the suitability of current national planning policies;**
- **open up a viable space for local and national conversations about the failure of current scheme development and the wider planning system to deliver acceptable grid infrastructure options;**
- **set out a new vision for the planning and delivery of greener grid infrastructure, including the scope for meeting need in other ways, plus design principles and rules that are fit for the 21st century;**
- **set out a positive and achievable vision for acceptable grid connection schemes: planned strategically, developed with community input and guidance, providing environmental net gain and thus putting us on a greener, better, faster path to net zero.**

1.12 Our new green grid planning vision is set out in section 3; the benefits of better community engagement are covered in section 4; and the need for new design principles and guidance is discussed in section 5. Section 6 includes a series of recommendations which offer practical, workable solutions.

River Stour near Dedham, Essex. Shutterstock

2 The Great Grid Upgrade and its impacts

BACKGROUND

2.1 The *Great Grid Upgrade* has not come out of the blue. Fifteen years ago, with the UK under pressure to meet its EU climate change target of generating 15% of its electricity from renewable sources, and responding to the Government's UK Renewable Energy Strategy (2008), a report on the need for new transmission was published by the Electricity Networks Strategy Group (ENSG).[3]

2.2 This 2009 report – *Our electricity transmission network: a vision for 2020* – focused on the significant changes in the grid that would be needed to deal with large, predicted volumes of new onshore and offshore wind, plus new nuclear – all deemed necessary to reduce carbon emissions and ensure security of supply. Offshore wind capacity was initially estimated as 21-25GW by 2020 and there was clear recognition of the need to consider offshore network solutions.

2.3 The ENSG recommended a set of grid reinforcements that were to be phased in from 2015 but, to date, many of the proposals have not been implemented. Many are still 'on the table' as current options. Whilst earlier implementation may have provided additional capacity, bought time and lessened the current pressure for upgrades, the upside is that a better planned and more holistic set of solutions, with more innovation (especially offshore grid solutions) and reduced environmental impacts, is still achievable both in East Anglia and the rest of the country.

2.4 In 2024, the UK now faces a much bigger challenge arising from the need to meet our net zero targets. Installed offshore wind capacity now stands at 15GW[4] but is slated to reach 50GW by 2030. This challenging target and the aim to decarbonise the electricity system by 2035 are now the main drivers of the *Great Grid Upgrade*.

CURRENT PLANS

2.5 Up till 2021, National Grid ESO (Electricity System Operator, ESO) issued an annual Network Options Assessment, which – based on the Electricity Ten Year Statement (ETYS) and Future Energy Scenarios (FES) data – recommends *'which investments in the year ahead would best futureproof the GB transmission network'.*

2.6 In 2022, following a series of government/Ofgem projects[5] taking more significant steps towards a more strategic approach to transmission network planning, notably in relation to co-ordinating onshore and offshore connections, ESO published its *Pathway to 2030*[6] including the Holistic Network Design (HND). The HND sets out how 23 GW of 'in scope' (i.e. future) offshore wind projects can be connected to the grid, balancing four objectives: cost to consumer; deliverability and operability; impact on the environment; impact on local communities. This has recently been supplemented by *Beyond 2030*[7], a further iteration by ESO of future network design but with limited impact on East Anglia.

THE HOLISTIC NETWORK DESIGN – A STEP FORWARD?

2.7 The HND's 'recommended design' includes both radial offshore-onshore connections (where power from an offshore wind farm makes an individual, single point connection to the onshore grid) and co-ordinated connections (where multiple wind farms, or other energy infrastructure such as interconnectors, link power flows offshore and share shore landings and entry points onto the onshore grid). By factoring environmental and community impacts into planning at an earlier stage, and using co-ordinated connections, the HND claims to both reduce the amount of infrastructure (and thereby impacts) and speed up delivery.

[3] Updated in 2012 https://assets.publishing.service.gov.uk/media/5a78e16940f0b6324769ae50/4264-ensg-summary.pdf

[4] https://www.renewableuk.com/page/UKWEDhome

[5] See https://www.gov.uk/government/groups/offshore-transmission-network-review and https://www.nationalgrideso.com/future-energy/projects/offshore-coordination-project

[6] https://www.nationalgrideso.com/document/262676/download

[7] https://www.nationalgrideso.com/future-energy/beyond-2030

2.8 It is also said to cut overall costs. Although overall capital costs of the recommended design (i.e. a more coordinated grid) are higher (by £7.6 billion, as offshore infrastructure is more expensive), it reduces lifetime network (constraint[8]) costs by £13.1 billion, giving estimated net consumer savings of c.£5.5 billion.

2.9 Regrettably, East Anglia was excluded from the HND on the ground that projects in the region were too advanced, although three schemes are being considered for co-ordination through the government's 'Early Opportunities' scheme. Although the major new onshore transmission lines proposed for East Anglia (Bramford to Twinstead and Norwich to Tilbury) form an integral part of the recommended design in the final HND, the latest iteration of ESO's network plan *Beyond 2030*[9] (drawing on the ESO East Anglian Network Study) now shows those plans in flux. This is addressed in case studies A and B later in this report (pages 19 and 28).

2.10 Prior to the HND being published, ESO published a report in 2020 estimating the benefits of an integrated approach across onshore and offshore networks, based on high-level network designs for enhanced offshore coordination in 2030 and 2050[10]. The OTNR Offshore Coordination report indicated significant environmental and social benefits of coordination: reducing the amount of new infrastructure (including cables and onshore landing points) by around 50% and delivering significant cost savings (£6 billion: an 18% reduction in capital and operating expenditure) by 2050.

2.11 Benchmarked against these assumptions, the poverty of ambition revealed by the HND is startling, compared with the OTNR 50% prediction in 2020. Its recommended design only cuts onshore landings by c.17% (from 18 to 15) and overall there would be very little diminution in overall onshore development or land take. The main claim to reduced environmental impacts – reducing the total number of cables being laid to shore by a third or so, due to the use of HVDC technology – is also palpably underwhelming.

2.12 Whilst it is acknowledged that some of the new offshore infrastructure will also help energy flows on the grid (hence cutting constraint costs by some £13 billion – the consumer savings quoted above), there is no concomitant reduction in the amount of onshore reinforcement work proposed prior to the HND being published. In fact, the HND includes further damaging proposals for long overhead lines for England (from North Lincolnshire to Hertfordshire), Wales (between North and South Wales) and Scotland (Loch Buidhe to Spittal). These, and other likely significant pylon lines are now clarified in the new ESO *Beyond 2030* report.

THE KEY NEW THREATS

2.13 Thus, despite the potential solution of an extended offshore grid, the *Great Grid Upgrade* still comprises a long list of what are likely to be highly intrusive and damaging infrastructure projects, with swathes of overhead lines and pylons cutting across hitherto tranquil and valued local landscapes. Table 1 shows the key new grid threats across East Anglia and the east of England region, including interconnector (IC) landings. This pattern is repeated across many areas in England (see also Appendix: Table 4), Wales and Scotland.

[8] Constraint costs largely comprise the amounts that are paid to generators to switch off when there is insufficient grid capacity to transmit power and/or pay other generators closer to demand to switch on at short notice.

[9] https://www.nationalgrideso.com/future-energy/beyond-2030

[10] https://www.nationalgrideso.com/document/183031/download

TABLE 1: MAJOR GRID/CONNECTION PROJECTS IN EAST ANGLIA/EAST OF ENGLAND (DRAWN FROM HND/PATHWAY TO 2030; NOA 2021/22 REFRESH)

TYPE OF GRID INFRASTRUCTURE	MAJOR GRID/CONNECTION PROJECTS IN EAST ANGLIAN/EAST OF ENGLAND (N = 18)	PROPOSED COMPLETION	AREA(S) AFFECTED	CURRENT STATUS (AND IF PART OF NATIONAL GRID'S GREAT GRID UPGRADE (GGU))
Overhead line, underground cable, new substations	**Bramford-Twinstead:** new 400kV double circuit includes 20km of new pylons and 10km to be buried in AONB; removal of 132kV pylons	2028	Suffolk Essex	DCO examination completed March 2024. Decision within six months (end 2024). Part of *GGU*
Overhead line, underground cable, new substations	**Norwich-Tilbury (N2T):** 183km of new infrastructure, mostly overhead line, new and extended substations, some undergrounding	2030	Norfolk, Suffolk Essex	Previously called East Anglia GREEN. Two non-statutory consultations completed. Statutory consultation in 2024; application for consent in 2025. *GGU project*
HVDC cable link, converter stations and subsea cabling	**Sea Link:** Offshore 2GW HVDC cable Suffolk-Kent; landing Aldeburgh-Thorpeness, converter station near Saxmundham, then to new substation at Friston. Kent landing at Pegwell Bay plus converter station	2030	Suffolk Kent	Statutory consultation completed December 2023. Application due late 2024. Grid coordination options with Five Estuaries and North Falls windfarm projects (see below) – feasibility study due March 2024. *GGU project*
Overhead line, new substations	**Grimsby-Walpole:** new 400kV double circuit from Grimsby to Walpole	2030	N Lincs Lincs Norfolk	Long line of new pylons. *GGU project*
Cable in existing tunnel	**Second Elstree to St Johns Wood** 400kV circuit	2029	Herts London	HND essential option (see NOA 2021/22 Refresh)
Overhead line, new substations	**North Lincolnshire to Hertfordshire**	2033	Lincs Cambs Herts	New network need identified in HND and NOA 2021/22 Refresh as essential option requiring acceleration to 2030 delivery date
Interconnector subsea cabling, converter station	**LionLink:** 1.8GW HVDC connection from Netherlands, landfall between Southwold and Thorpeness, converter station at Saxmundham	2030	Suffolk	Formerly known as Eurolink. Application for consent expected in 2025
Interconnector subsea cabling, converter station	**Nautilus:** 1.4GW HVDC connection from Belgium, landfall Suffolk or Kent (Isle of Grain). If Suffolk, landing between Sizewell and Thorpeness, connection at Saxmundham	2028?	Suffolk or Kent	Still scoping options in both Suffolk and Kent. Update expected in 2024
Interconnector subsea cabling, converter station	**Tarchon Energy:** 1.4GW connection from Germany landing on Essex coast (unspecified) and connection via EACN	2030	Essex	Studies underway, application for consent in 2026

TYPE OF GRID INFRASTRUCTURE	MAJOR GRID/CONNECTION PROJECTS IN EAST ANGLIAN/EAST OF ENGLAND (N = 18)	PROPOSED COMPLETION	AREA(S) AFFECTED	CURRENT STATUS (AND IF PART OF NATIONAL GRID'S GREAT GRID UPGRADE (GGU))
Connection for offshore wind farm: landing, UG cables, converter stations, new substation	**East Anglia 1N:** landfall north of Thorpeness, UG cabling to converter station and new grid supply point (Friston), additional pylon(s) **East Anglia 2:** as above, shared landfall, cable corridor and converter station, new NG substation, additional pylon(s), as above	Not stated	Suffolk	Both windfarms and associated development consented in March 2022. Delayed by legal challenges, last dismissed in March 2024
Connection for offshore wind farm: landing, UG cables, converter stations, new substation	**East Anglia 3:** landfall at Bawdsey, cables to new converter station at Bramford and onto grid	Not stated	Suffolk	Construction commenced 2022
Connection for offshore wind farm: landing, UG cables, converter stations, new substation	**Five Estuaries:** landfall between Frinton-on-Sea and Holland-on-Sea, underground cabling to new substation near Lawford	2030	Essex	Application due winter 2023/24. OCSS proposals could divert landfall to Friston area via Sea Link bootstrap
Connection for offshore wind farm: landing, UG cables, converter stations, new substation	**North Falls:** landfall between Frinton-on-Sea and Holland-on-Sea, underground cabling to new substation near Lawford (shared corridor with Five Estuaries scheme – see above)	2030	Essex	Application (Development Consent Order) due to be submitted in 2024. OCSS proposals could divert landfall to Friston area via Sea Link bootstrap
New tunnel, pylons, shaft headhouses	**Grain to Tilbury:** tunnel under Thames Estuary. Local sensitive ecological sites (SSSI, SPA, RAMSAR)	2028	Essex Kent	Planning applications expected 2024. *GGU project*
HVDC cable link, converter stations and subsea cabling	**Eastern Green Link 3:** offshore 2GW cable from Peterhead (Scotland) to the south Lincolnshire/ West Norfolk area	2031	S Lincs Norfolk	HND recommended as 'essential option' with earliest optimal delivery date of 2030. *GGU project*
HVDC cable link, converter stations and subsea cabling	**Eastern Green Link 4:** offshore 2GW cable from Peterhead (Scotland) to the south Lincolnshire/ West Norfolk area	2031	S Lincs Norfolk	HND recommended as 'essential option' with earliest optimal delivery date of 2030. *GGU project*
New overhead line	**New South Lincolnshire to East Anglia double circuit**	2033	S Lincs East Anglia	Option found 'optimal' but recommendation to 'hold' in NOA 2021/22 Refresh

East Anglia and the east of England

2.14 Culling data from official sources, Table 1 illustrates the profound and damaging concentration of major grid infrastructure projects in East Anglia and the wider east of England area. This is predominantly because the first major wave of offshore wind development focused on the sea east of the region. Of the 12 projects that make up National Grid's *Great Grid Upgrade* (GGU), seven will impact this region, including three major overhead lines (Bramford to Twinstead; Norwich to Tilbury; Grimsby to Walpole). The four other GGU projects in the region will be less damaging as they utilise subsea routes or tunnels.

2.15 There are also a further 11 regional projects[11], including five windfarm connections (but with shared onshore corridors, a total of three landfalls), up to three interconnectors bringing in power from mainland Europe plus longer term plans for two more significant pylon lines (from North Lincolnshire to Hertfordshire via Cambridgeshire; from South Lincolnshire to East Anglia) plus a new circuit linking Hertfordshire and London, presumably utilising the 'London Connection' tunnel (which has provision for a second circuit).

2.16 Taking all the grid upgrade proposals into account (including the rest of England), if significant widespread impacts of these proposals are to be avoided, there will have to be a sea change in how they are planned, designed and delivered. This report addresses this challenge by defining a new vision for green grid planning (see section 3), better community engagement (section 4) and the need for new design principles and guidance (section 5).

THE GOVERNMENT'S NEW GRID PLANNING SYSTEM

2.17 In recent years the Government has been attempting to balance a series of seemingly conflicting priorities:

- moving at pace towards a decarbonised electricity system as part of meeting UK climate change/net zero targets;
- reducing delays in the consenting of energy infrastructure projects without damaging confidence in the planning system;
- delivering greater energy security, affordable energy prices and a thriving economy whilst maintaining high levels of environmental protection.

2.18 To this end (and after considerable delays) the Government has recently set out a series of new policies and strategies, announced in the November 2023 Autumn Statement[12], including:

- a revised suite of energy National Policy Statements (NPS), governing consenting in the Nationally Significant Infrastructure Planning (NSIP) regime;
- reforms to speed up the NSIP regime;
- an action plan to halve the time needed to build new grid infrastructure;
- a compensation scheme for affected communities;
- and reforms to enable faster grid connections for viable projects.

2.19 Once implemented, these reforms will force a radical acceleration of the planning system for major infrastructure planning, coming on the back of long nurtured Government frustrations with a planning system it describes as 'outdated' and 'inefficient'.[13]

2.20 Whilst a need to speed up the transition to a low carbon economy to address the climate emergency is understandable and desirable, and the challenging scale of the *Great Grid Upgrade* clearly needs a radical solution, the current reforms are likely to fail to create the social licence that would be necessary to bring the wider public on board and speed up delivery. This is the rationale for the new green grid vision proposed later in this report.

[11] This disregards already consented, but yet to be built schemes – such as the Norfolk Vanguard windfarms – where a 37 mile long underground cable corridor from Happisburgh to Necton (Norfolk) is still to be built. A similar cable corridor from Sheringham will connect three more windfarms to new substations south of Norwich (see case study D, this report).

[12] See pp.60ff, paras 4.21-4.27 and pp.95ff, paras 5.89-5.93 of HMT's Autumn Statement 2023 https://assets.publishing.service.gov.uk/media/6568909c5936bb00133167cc/E02982473_Autumn_Statement_Nov_23_Accessible_Final.pdf

[13] Ibid. footnote 9.

2.21 The Government recognises the need to bring communities with them on 'the journey to a secure net zero future'. Some initiatives, notably enhanced public engagement prior to scheme applications being submitted; a community benefits scheme (plus direct payments to households close to lines); and a wider communications and awareness campaign on the need for and benefits of the grid upgrades could be seen as steps in the right direction. Despite these, affected communities have labelled the main policy reforms as undemocratic and dictatorial.

2.22 During the lengthy consultation process (2021-23) on the new energy NPS, both the Suffolk Preservation Society (SPS) and CPRE lobbied for a more participatory, 'front-loaded' strategic, landscape scale planning and design process, with a strong emphasis on environmental net gain and community benefits. This would both improve outcomes and speed up consenting times by reducing friction in the decision-making process. This is part of CPRE's 'greener, better, faster' energy vision for 2045 where '*by engaging with local communities in a meaningful way, decision-makers have found that the process runs more smoothly and receives more support from everyone involved*'.[14]

2.23 In contrast, government has 'doubled down' with a plethora of unpalatable and undemocratic proposals, akin to putting planning on a heavily centralised 'war footing', including:

- a new need 'trump card' (the 'critical national priority' designation) applied to almost all NSIP-qualifying energy infrastructure;
- a revised suite of overly-directive and environmentally-insensitive national policy statements;
- swingeing planning reforms aimed at cutting consenting timescales and procedures to the bone, reducing the scope for democratic participation;
- moves to curb rights to judicial review.

2.24 As one respected planning commentator – Professor Richard Cowell – has warned, *'doubling down on measures to accelerate consenting' could affect the social acceptability of both specific energy projects and wider decarbonisation policies.* He went on to conclude that *'The UK needs to pursue the best net zero energy transition, not simply the quickest'*.[15]

2.25 This is also the view of this report. Speeding up delivery – without sufficient attention to improving both social licence and improved environmental outcomes – risks both public support for climate action and net zero infrastructure not being built (as the government's radical, overriding measures may cause further public backlash). Therefore, to better secure the *Great Grid Upgrade*, further, more consensual changes to grid planning are urgently needed.

[14] See pp.44-45 in https://www.cpre.org.uk/wp-content/uploads/2020/07/Greener-Better-Faster-July-2020.pdf

[15] https://www.brightblue.org.uk/resilient-neighbourhoods-powered-by-low-carbon-energy-2/

3 Better national and regional strategic planning

THE NEED FOR MORE STRATEGIC PLANNING

3.1 Government, Ofgem, and the electricity industry all recognise the need for a more strategic approach, delivered through planning reform. In National Grid's (NGET) May 2023 summary of their five key grid upgrade asks they state *'crucially, the planning system must take a more strategic and holistic approach in order to balance the urgency with which investment is needed* with the voice and interests of local communities'.[16]

3.2 A second NGET ask to *'put communities and consumers at the forefront of the transition' also states 'to maintain popular support for the net zero transition, and drive towards affordability over the longer-term, it is critical that consumers and communities understand the rationale for change, can engage in the process and see its benefits'.*

3.3 NGET's *'more strategic and holistic approach'* is to be delivered by the 'Strategic Spatial Energy Plan (SSEP), which would be *'established through a collaborative and consultative process, including formalised input from industry and local and regional authorities through alignment with new Regional System Plans and Local Area Energy Plans. Work should start now by agreeing scope, creating national consensus and building capabilities in key organisations to ensure the first plan can be in place by 2025'.*

3.4 NGET also recognise that the HND was a welcome first step towards better strategic planning but notes its limitations, being narrow in scope (running only up to 2030) and not having a formal basis in planning and consenting frameworks. By contrast, they envisage that the SSEP would be endorsed in planning policy, hence the need for the collaborative, consensual, multi-stakeholder process envisaged above.

3.5 But despite NGET's rhetoric about the need for community voices and the primacy of communities and consumers, there appears to be little formal role for democratic input into the SSEP in 2024-25. This follows on from the closed and untransparent industry 'insider' process that led to the publication of the HND and its follow up, *Beyond 2030* (previously termed the transitional Centralised Strategic Network Plan (tCSNP2).

3.6 If community confidence, and hence social licence, is to be won for the ongoing roll out of the *Great Grid Upgrade*, a more collaborative and innovative plan is needed urgently. This also involves a fresh approach to two of the main assumptions underpinning the *Great Grid Upgrade*: the needs case and the choice of connection technology. These issues are set out below before we describe our new blueprint for grid planning.

THE APPROACH TO NEED

3.7 Currently the need for new grid connections is driven by NG ESO's 'Future Energy Scenarios' (FES): 'defined credible pathways for the future energy we need'. FES in turn drives the Network Options Assessment and, since 2022, the HND (see p.11-12) and the forthcoming tCSNP2 (now released as the ESO *Beyond 2030* report). It is vital that there is confidence in FES predictions as they directly drive the amount of infrastructure to be planned, consented and built.

3.8 There is clearly a balance to be had between having a precautionary, contingency-led approach and the risk of overbuilding of the network and creating costly stranded assets[17], especially where the impacts of major infrastructure on communities and the environment are significant and long lasting. Currently it is far from clear that this balance is being struck correctly (see the Norwich-Tilbury case study below). This needs to be resolved if the needs case – now imposed unilaterally in the NPS through the 'critical national priority' designation – is to enjoy community confidence.

[16] emphasis added see Delivering for 2035: Upgrading the grid for a secure, clean and affordable energy future (May 2023), see https://www.nationalgrid.com/document/149496/download

[17] In this context, stranded assets refer to significant energy infrastructure that once built, is no longer needed or performs less optimally/provides less value due to changes in circumstances. See here https://www.lse.ac.uk/granthaminstitute/explainers/what-are-stranded-assets/

MEETING NEED THROUGH GREATER SYSTEM FLEXIBILITY

3.9 CPRE has long argued for a smarter grid[18] that better utilises demand management (also termed demand side response, DSR), energy storage and decentralised generation (i.e. generation closer to local demand) to reduce the need for, and amount of long-distance electricity transmission. Such measures are now termed 'system flexibility'. Although flexibility is factored into FES, a number of recent studies suggest much greater scope for its deployment, also bringing with it significant savings in system costs which ultimately would translate into cheaper energy prices.

3.10 The Government's own *Smart Systems and Flexibility Plan 2021* estimated savings of *'up to £10bn a year by 2050, by reducing the amount of generation and network we need to build to meet peak demand*'.[19] Independent studies from the Carbon Trust and Imperial College (2021) and Regen/MCS Charitable Foundation (2023) have gone further, with the former suggesting cost savings of up to £16.7bn a year by 2050, some of the savings accruing from the reduced need for network reinforcement.[20] This is underlined by a 2020 study by Piclo[21] which stated *'flexibility options could cost-effectively reduce network reinforcement by up to two-thirds'*.

3.11 Distributed sources of flexibility, deployed locally, thus offer significant savings in the costs of reaching net zero, although greater investment in the distribution/low voltage system and the transmission/distribution interface is still urgently required if these benefits are to be realised.[22] Most commentators also agree that there is an acute need to maximise flexibility as soon as possible to avoid overbuild of the energy system, including the grid. In East Anglia, with its serious power bottlenecks, ESO have recently launched[23] an interim constraint management service, a small step in the right direction.

3.12 Whilst the three counties fully support the need for large scale offshore wind in the energy mix, they also want to see a big shift towards local distributed energy sources, comprising both generation (particularly rooftop solar[24] and community energy schemes) and end-use DSR by consumers. This is illustrated well in EnergyREV's study of the benefits of 'Smart Local Energy Systems' (SLES) which bring significant consumer savings and reductions in total system costs.[25] In turn EnergyREV cite a 2020 study by WPI Economics stressing the need for a less-centralised energy system, engaging end-use consumers. WPI stated that *'with the right policy support the community energy sector in the UK could grow 12–20 times larger between 2020 and 2030 and could encompass up to 4,000 organisations*'.[26]

3.13 ESO has recently endorsed consumer-based demand reduction, radical action on energy efficiency and distributed flexibility (including DSR) within the key recommendations of the 2023 FES. They also highlight the strategic opportunity to plan the location of future large electricity demands (e.g. hydrogen production plants, data centres) so that energy is consumed as close as possible to where it is generated. ESO's new *Beyond 2030* report takes this further and models up to 10GW of such demand.[27] Whilst the analysis is said to be indicative, it outlines the clear benefit of locating more strategic flexible demand in the north of Great Britain. This reduces the need for transmission, adds flexibility and reduces network constraints. In terms of wider regional economies (outside of London and the South East), it would also be a vital levelling up tool.

3.14 For the future, FES must be revised to include much greater ambition for locational demand centres, distributed energy and flexibility to avoid overprediction of energy need and grid system overbuild. However, the following section, including the East Anglian case study of the proposed Norwich to Tilbury scheme, unhappily illustrates the continuing dangers of ESO's current 'predict and provide' approach which pervades the *Great Grid Upgrade*.

[18] https://www.cpre.org.uk/resources/a-countryside-friendly-smart-grid

[19] See p.5 Transitioning to a net zero energy system: Smart Systems and Flexibility Plan 2021 (publishing.service.gov.uk) In addition, para.3.3.6 of NPS EN-1 (2023) quotes systems savings 'up to £12bn per year by 2050'

[20] https://publications.carbontrust.com/flex-gb

[21] https://assets-global.website-files.com/6123718de4b96c44035b9af8/616d7e539bfe575fccccc7fc_piclo_whitepaper_value-of-flexibility.pdf

[22] https://www.regen.co.uk/wp-content/uploads/Building-a-GB-electricity-network-ready-for-net-zero.pdf

[23] https://www.nationalgrideso.com/news/eso-deliver-consumer-savings-through-early-start-new-constraint-management-service

[24] https://www.cpre.org.uk/resources/shout-from-the-rooftops-delivering-a-common-sense-solar-revolution

[25] https://www.energyrev.org.uk/media/1965/energyrev_flexiblesystemimpacts_202205_final.pdf

[26] https://wpieconomics.com/site/wp-content/uploads/2020/01/Future-of-Community-Energy-20200129-Web-Spreads.pdf

[27] https://www.nationalgrideso.com/document/304756/download see especially p.44

CASE STUDY A

THE NORWICH-TILBURY PYLONS: NEEDS CASE NOT MET

National Grid Electricity Transmission (NGET) first announced the need for a new overhead (OHL, i.e. pylon) line between Norwich and Tilbury (N2T) in January 2022. The proposals have now been through two rounds of non-statutory consultation (spring 2022 and autumn 2023). A further statutory consultation is due in late 2024 with submission of a planning application scheduled for 2025. The scheme – part of the *Great Grid Upgrade* – has garnered widespread opposition, including from CPRE in the region, SPS, local and regional campaign groups, and the local planning authorities (Norfolk, Suffolk and Essex County Councils) who are all objecting.

In addition, the county councils commissioned a needs case review, carried out by a former senior NGET expert, Andy Hiorns.[28] This review has exposed the weakness in the current 'predict and provide' model of grid planning and strongly undercuts the current need case for N2T. It also offers alternative, offshore options for the grid connections needed – at lower costs than NGET had previously quoted.

For East Anglia, Hiorns found that NGET were not being transparent regarding their assumptions and that a more nuanced justification of need was required – rather than it being solely based on the ESO 'contracted position'. Other issues highlighted included uncertainty in the overall capacity and timings of connections required (especially for Sizewell C) and the role of flexibility, including storage and non-build solutions, being overlooked.[29]

Overall, the review conclusions are damning, with Hiorns stating that – given the current levels of uncertainty over generation project delivery – it is premature to conclude that N2T represents the best solution in meeting future system needs and that further sensitivity studies are required to reduce the risk of stranded investments. The review states that a delay (for further studies) would not hinder the delivery of ongoing and planned offshore wind projects.

CPRE Essex, CPRE Norfolk and the Suffolk Preservation Society (who represent CPRE in Suffolk) strongly endorse these conclusions. They also note that his conclusions clearly run counter to the HND which, although not labelling N2T as a 'HND essential' option requiring acceleration, recommends the project be delivered by 2030. Given that NGET will be planning the rest of the *Great Grid Upgrade* based on the same needs methodology (the ESO connection list/contracted position), this further undermines the current model of strategic planning.

The Hiorns report supports the three counties' call for an offshore solution (a second subsea link) rather than the N2T proposed overhead line and shows it to be feasible. In addition, the ESO East Anglia network study (see case study B on p.28) now also highlights the viability of replacing N2T with HVDC undergrounding.

PLANNING AND TECHNOLOGY CHOICES FOR THE 21ST CENTURY

3.15 We have already outlined ongoing and new defects in the current model of strategic planning for grid infrastructure, which is a crucial element in planning for net zero. The 'take home' message is that the new system from 2024 onwards will likely fail to deliver due to an emphasis on speed at all costs, over-predicted demand, and lack of transparency and wider engagement in the future system design.

3.16 A final, but highly determinative factor in improving future planning – especially at the scheme level – is the choice of transmission technology and its impact and cost. For many affected by grid upgrade proposals, this is a central question. Communities understand and accept the urgent need for new sources of low carbon energy and that the electricity must get from A to B. But they ask why, in the 21st century, are we still using the same system pioneered in the 1930s – overhead lines (OHL) and pylons?

[28] https://www.essex.gov.uk/sites/default/files/2023-11/Final%20Hiorns%20report%20-%20East%20Anglia%20Transmission%20Network%20Reinforcements.pdf

[29] Offering contracts to generators and others in the region to provide a more economical method of managing constraints than actions through the balancing mechanism (working successfully from 2022 onwards across the energy boundary between England and Scotland). Now also being implemented for East Anglia, see https://www.nationalgrideso.com/news/eso-deliver-consumer-savings-through-early-start-new-constraint-management-service

3.17 There are three main answers: cost, ease of delivery and lack of regulatory and policy innovation. Transmission providers, such as NGET, are caught in the middle. As the market regulator, Ofgem imposes a duty on them to deliver best value and promote the 'cheapest consentable solution'. As other analysts have aptly described: '*this means proposing OHL to which there is invariably considerable opposition, and this risks having consent refused, or having to go back and re-design parts of the scheme with undergrounding or further mitigation'*.[30]

3.18 The new grid planning framework (2024 onwards), even taking into account the addition of significant community benefits, will not resolve this problem – which stems fundamentally from a) undervaluing the intrinsic values of the countryside: beauty, wildness, history, tranquillity and b) assuming there is infinite capacity for change done well. That may be so for some forms of development but it is not the case for further swathes of pylons.

3.19 The obvious planning solution is to design alternative schemes, which fully mitigate – from the start – the severe landscape and amenity effects of overhead lines and pylons, and also provide significant environmental and community benefits. Such schemes will clearly be more readily consentable. Holistic local and regional benefits, which also accrue nationally (say, towards meeting UK nature recovery targets) would be welcomed by stakeholders and communities and speed up delivery. An alternative vision for scheme development and design of a green grid is set out in section 5 of this report (and see Table 3, p27).

3.20 Once alternative overhead routeing is ruled out, the main solutions are tried and tested: undergrounding (cable burial) and subsea solutions, including increasing interconnectedness of offshore energy flows. Undergrounding is not, however, a universal panacea due to higher costs and potential conflicts with land use, ecology and heritage assets. Nonetheless, there are myriad examples of where it has an ongoing important role to play in mitigating severe landscape impacts, including NGET's own Visual Impacts Provision project,[31] paid for by consumers through an Ofgem regulatory provision.

3.21 Superconductor technology may also play an increasing role. But to enable these technologies to become the 'go to' option first requires a stronger political recognition of the enduring value of our landscapes (justifying the additional costs) and then amending the policy presumption in EN-5 'that overhead lines should be the strong starting presumption for electricity networks developments in general'.[32]

3.22 In 2023, some welcome changes were made to EN-5, in particular reversing the OHL presumption in national designating landscapes. However, despite allowing that undergrounding or alternative routeing via subsea cabling could be considered where there is 'a high potential for widespread and significant adverse landscape and/or visual impacts' (para. 2.9.23), the ensuing criteria for assessment and decision-making are strongly weighted against such solutions being deemed appropriate (see paras 2.11.16 and 2.9.24). The current unwillingness of Government to respect landscapes is perhaps best exemplified in EN-5, para. 2.9.11 where it is stated: '*Though mitigation of the landscape and visual impacts arising from overhead lines and their associated infrastructure is usually possible, it may not always be so, and the impossibility of full mitigation in these cases does not countermand the need for overhead lines'*.

3.23 Whilst it is possible to understand the conclusion that, faced with the daunting scale of the *Great Grid Upgrade*, the cheapest and simplest (in engineering terms) option (OHL) will be preferred, this again prioritises the quickest rather than the best net zero transition – at expense of landscapes, communities and social licence. In the next two parts of this report, we go on to address better ways of engaging with communities (section 4, p.23) and then a new set of design principles, fit for the 21st century, including underground and offshore solutions (section 5, p.26).

[30] See p.2, proposal brief to NGET from RSK (2020) East Coast Strategy - Environmental Net Gain Exemplar Project: A Proposal from RSK Environment.

[31] https://www.nationalgrid.com/electricity-transmission/network-and-infrastructure/visual-impact-provision

[32] See para.2.9.20, p.21 in https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5

OUR GREEN GRID PLANNING VISION

3.24 This report has already highlighted both defects in strategic and NSIP planning that risk the delivery of the *Great Grid Upgrade* but also indicated areas for change that the three counties believe would reduce impacts, enhance outcomes, increase social acceptability and speed up consenting and delivery. The proposed changes are summarised in Table 2 as our green grid planning vision, showing how the new headline proposals map onto the government's new grid planning system.

TABLE 2: OUR GREEN GRID PLANNING VISION

NEW GOVERNMENT PLANNING MODEL (2024-)	GREEN GRID PLANNING VISION
FES: Energy modelling (the Future Energy Scenarios) aggregates energy scenarios of supply, demand and technology mixes and tests against net zero targets	Smarter FES modelling (as above) improves ETYS inputs; new strategic approach optimises location of large electricity demands to better balance the system
Electricity Ten Year Statement (ETYS) inputs FES data into energy flow models to determine network capacity and identify need for reinforcement	Smarter FES modelling (as above) improves ETYS inputs; new strategic approach optimises location of large electricity demands to better balance the system
NOA – using economic criteria, NOA prioritises proposed TO options to meet ETYS requirements **HND** uses further economic, deliverability, environmental and community filters to identify an optimised onshore and offshore network design; NOA refreshed with design and re-run **tCSNP** evolves HND approach with HND follow up exercise (HNDFUE) with FES/ETYS/NOA input	Updates to FES and ETYS refine underlying needs case. Policy signals and technology innovation reduce reliance on OHL solutions. CSNP approach is refined with enhanced SEA testing of holistic network designs (frontloading environmental capacity issues). Full engagement with environmental and community stakeholders ensures transparency and enhances social licence
Strategic Spatial Energy Plan – high level strategic and holistic plan bridging overall energy needs to the planning system, engaging industry and regional and local authorities	Widen SSEP engagement with community and environmental stakeholders. Co-design with devolved nations and regional/local government to support policy shaping, green economic development and levelling up
National Policy Statements (NPS) set out policy, need, assessment principles and guidance on dealing with impacts. New need designation of 'critical national priority' (CNP) introduced	Update to reflect new CSNP approach; remove CNP trump card as improved needs testing, SEA frontloading and stakeholder engagement reduces delays in consenting; update guidance to mandate significant new environmental net gain (ENG) requirement and outcomes
Ofgem: regulatory revisions to allow anticipatory investment, speed delivery whilst protecting consumers. Duty to deliver best value and promote the 'cheapest consentable solution'	Maintain trajectory but widen duty to include environment/landscape, net zero and just transition; better integration of transmission and distribution frameworks; widen stakeholder engagement in regional energy planning
NSIP/DCO reforms: fast-track route for energy DCOs; shortened timescales for consenting; additional resources for PINS and LPAs; **Legal reforms:** new limits on recourse to judicial review (JR) of DCOs	Enhance resources for PINS and LPAs; delay fast-tracking pending holistic revisions to CSNP, NPS (especially introduction of ENG) and a better designed community benefits scheme; no changes to JR criteria
Community benefits scheme: compensatory allowances for communities affected by major energy infrastructure including direct payments to householders. **Guidance on community engagement**	Drop direct payment scheme; integrate community benefits with delivery of environmental net gain (ENG) schemes. Introduce co-design groups (developers, LPAs and communities) for benefit scheme delivery

3.25 While some of the proposals do represent significant changes to the current regime, that will require policy revision and also result in higher mitigation costs for some schemes, it is argued that this will be balanced by the reduced need for network reinforcement and faster consenting. Thus a better and faster route to net zero.

3.26 Significantly, there are clear opportunities for delivering the vision through government workstreams that are still evolving, including the Electricity Transmission Design Principles, the Centralised Strategic Network Plan and the Strategic Spatial Energy Plan – with the key proviso that stakeholder engagement in these workstreams is widened significantly, thereby improving social licence.

Bridge over River Waveney on Doit Lane, Norfolk/ Suffolk border. Credit: Angela Payne

4 Better engagement

4.1 Government and industry alike state the need to take people with them on the journey to net zero. To this end, the Government has proposed further measures to win social licence for the *Great Grid Upgrade* – notably a bespoke community benefits scheme plus voluntary guidance on engagement.[33] The Government has also consulted[34] on operational reforms to Nationally Significant Infrastructure Project (NSIP) processes to improve engagement with local planning authorities and communities. Our view is that – with poor levels of trust in NSIP planning (ongoing and revised) – the new proposals are unlikely to address current opposition to big grid projects. We unpack this now.

ACQUIRING SOCIAL LICENCE

4.2 The need for new grid infrastructure provision in the face of an energy transition is not unique to the UK. In this and the next sub-section we draw particularly on Australian and Irish experiences of adapting to this challenge. Like the UK, both countries have faced opposition to major infrastructure projects and both need to roll out new grid networks.

4.3 The most analogous situation to the UK is probably Australia where the energy industry's 'decide, announce, defend and compensate' model of roll-out is said, by the Energy Grid Alliance (EGA), not to be working.[35] The current UK model could perhaps be better described as 'decide, consult, amend, compensate'. On the International Association for Public Participation (IAP2) spectrum of public participation (see Appendix: Figure 1) this places NSIP grid consenting – at best – at the cusp of levels 2/3, between 'consult' and 'involve'. Typically, a new grid proposal in the UK will be subject to two non-statutory consultations before the final statutory stage that precedes the DCO examination. NGET in England appear to view this as meaningful and therefore sufficient.

4.4 In reality, communities and other third parties affected by major grid projects are highly dissatisfied with the current consultation model as their formative responses and counter-proposals are overwhelmingly ignored. As the Suffolk Preservation Society (SPS) stated in their response to the second non-statutory consultation on the Norwich to Tilbury OHL proposals: *'We are extremely disappointed that this second consultation confirms that the preferred Strategic Proposal remains unchanged…. As a community engagement exercise this fails to engender greater transparency, trust or co-operation with affected communities. The current consultation needs to go significantly further to address key issues of concern…'*

4.5 Furthermore, this calls into question the compliance of such consultations with the 'Gunning principles', either in spirit or law. These principles have been judicially summarised and endorsed by the Supreme Court as: *'First, that consultation must be at a time when proposals are still at a formative stage. Second, that the proposer must give sufficient reasons for any proposal to permit of intelligent consideration and response. Third… that adequate time must be given for consideration and response and, finally, fourth, that the product of consultation must be conscientiously taken into account in finalising any statutory proposals.'* [36]

4.6 Setting aside any potential grounds for challenge, it is clear that the current mode of engagement – solely by way of consultation (in essence huge volumes of highly technical and indigestible information) – is insufficient to secure social licence. As East Anglian political leaders have stated: *'More must be done to bring host communities along and ensure that they are genuine participants in shaping their local area, in collaboration with project promoters of nationally significant infrastructure'.*

Richard Rout, Cabinet Member for Finance and Environment and Deputy Leader of Suffolk County Council[37]

[33] https://assets.publishing.service.gov.uk/media/655cda1dd03a8d000d07fe0b/community-benefits-for-electricity-transmission-network-infrastructure-govt-response.pdf

[34] https://www.gov.uk/government/consultations/operational-reforms-to-the-nationally-significant-infrastructure-project-consenting-process

[35] See p.3 in https://www.energygridalliance.com.au/acquiring-social-licence-for-electricity-transmission

[36] set out by Stephen Sedley QC as approved by Hodgson J in R v. Brent LBC ex p Gunning and endorsed by the Supreme Court in R (Moseley) v Haringey London Borough Council [2014] UKHL 56; [2014] 1 WLR 3947

[37] https://www.suffolk.gov.uk/asset-library/community-benefits-consultation-scc-response-07-06-23.pdf

4.7 Unfortunately, the Government's new proposals to improve early consultation and pay community benefits appears exactly akin to that described in Australia by EGA where they say the energy industry's strategy of *'pushing the "talk to them early and pay them more" agenda is very likely to further dilute trust, increase opposition and dissolve any credible opportunity to acquire social licence'*.

4.8 EGA's solution is for industry to *'first focus on community responsibility, environmental responsibility, and stakeholder engagement to acquire social licence'*. Finally, EGA suggest social licence is lost when there is lack of trust in the regulatory process. For the *Great Grid Upgrade*, this means further planning reform is also key to reducing opposition to new grid infrastructure. In terms of this report, this comprises both the green grid planning vision (see section 3 above, Table 2) and the green grid planning hierarchy (section 5, see Table 3).

THE WAY FORWARD

4.9 Social licence is said to comprise four elements: benefit sharing, impact mitigation, procedural fairness and governance.[38] All of these can be improved through our new green grid planning vision and hierarchy (Tables 2 and 3). Benefit sharing is addressed by community benefits; impact mitigation by reduced landscape impacts (more use of undergrounding and re-routeing, including offshore) and wider net environmental gain; procedural fairness and governance by enhanced strategic environmental assessment (SEA) testing of network designs and better engagement at all levels of design and planning.

4.10 The Government's recent proposals on community benefits are welcome, although – on just transition (social fairness) grounds – the three counties strongly favour wider community benefits over direct householder payments. Applying a benefits regime is of course firstly dependent on proposed schemes being acceptable in terms of overall impacts being minimised and the appropriate provision of environmental net gain. However, the way in which these benefits will be delivered will be crucial to the scheme's contribution to social licence. As stated elsewhere, benefits in the form of direct payments to households should be avoided.

4.11 EirGrid, the grid operator and developer in Ireland, has been evolving its public engagement strategy since 2020. They recognise that only a collaborative approach can secure social acceptance: '*It is vital that we all work together if we are to succeed. It is only with public support that we can secure a sustainable supply of electricity for the next generation*'.[39] Importantly, as an engineering company, they also realise the need to make community engagement and participation part of their core competence, setting new goals around socially acceptable solutions, increasing their engagement capacity and partnership working.

4.12 There are key lessons here for NGET and other UK transmission companies in 'upskilling' and how they can implement more participative engagement – both for a) route corridor design options and b) the identification, design and delivery of associated benefits.

[38] See https://www.sciencedirect.com/science/article/abs/pii/S030626192031237X

[39] https://www.eirgrid.ie/site-files/library/EirGrid/EirGrid-Public-Engagement-Strategy.pdf

BEST PRACTICE COMMUNITY ENGAGEMENT

a. Route corridor design

4.13 In the green grid planning vision and hierarchy, we firstly anticipate that improved 'on the ground' scheme designs arise from 'baking in' better environmental options at the strategic network design and planning stage (we also assume that volume of onshore schemes is reduced by increased system flexibility and offshore solutions). In the CSNP and Detailed Network Design (DND) stages, use of enhanced SEA for onshore routes will identify more holistic solutions with enhanced mitigation and net gain being delivered through regional and local co-design with key environmental and community stakeholders. Straddling this regional/ local interface will involve earlier and more participatory community engagement. As Suffolk County Council have stated, '*(s)uch changes in process are important, as this means that to a much greater extent than is the case at present, changes are done with, rather than done to, local communities*'.[40]

4.14 Such changes could readily be incorporated within the current direction of Government policy on NSIP reform[41] which is already contemplating revised pre-application guidance and introducing an adequacy of consultation milestone. Crucially, supporting community forums to input to the consenting process has also been put on the table. To meaningfully improve social licence, reforms would have to move public participation well beyond 'consult' to the 'involve' and 'collaborate' stages (see IAP2 schema, Appendix, Figure 1). For NGET this would also mean changes to their project development process such that stakeholders and communities are engaged earlier, i.e. prior to identifying a preferred option. Throughout the process, the three counties envisage much greater input into decisions affecting routeing, site selection, minimising effects, mitigating adverse effects, offsetting and enhancements.

4.15 Time and effort spent getting this right would accelerate the overall development process significantly as formal consenting is eased. Replacing a simple tickbox (yes/no) consultation milestone with a grade (e.g. unsatisfactory, poor, good or excellent) could also be a formative driver towards better standards of engagement.

b. Delivery of community benefits

4.16 There is also further opportunity for Government to introduce a more engaged and participative process in the voluntary guidance that will accompany the community benefits for transmission infrastructure scheme. Our key demands here mirror much of Suffolk County Council's (SCC) proposals[42] for earlier engagement, a flexible menu of benefit options, fair representation on community forums, and vitally, support/capacity building for parish and town councils to engage effectively. To those groups, we would add support for wider community and other interest groups. The three counties also endorse the need for professional, and possibly independent support to drive the engagement process, with the costs either borne by NGET or the community benefits pot.

4.17 Like SCC, we believe there are strong lessons from EirGrid's community benefits policy.[43] The three counties wish to see a multi-strand fund, akin to the EirGrid scheme (which has sustainability, community and biodiversity streams under an umbrella framework of the UN Sustainable Development Goals, SDGs) with an especial focus on community energy projects and adding landscape enhancement projects to a nature recovery workstream. For this latter ambition, we see scope for community benefit funds to help enhance wider environmental net gains required by the new electricity transmission design principles (set either as policy or guidance).

4.18 Finally, and following the EirGrid approach, we suggest that the new community benefits approach is set out as policy rather than voluntary guidance. Such policy could be set out by either Government or NGET and could also form the basis of evaluative criteria for scheme monitoring, together with a community benefits register package.

[40] See Appendix B https://www.suffolk.gov.uk/asset-library/community-benefits-consultation-scc-response-07-06-23.pdf

[41] https://www.gov.uk/government/consultations/operational-reforms-to-the-nationally-significant-infrastructure-project-consenting-process

[42] See again SCC response to the Government's community benefit consultation at fn.32 and fn.35 *ibid.*

[43] https://www.eirgrid.ie/site-files/library/EirGrid/209130-EirGrid-Community-Benefit-Policy-A4-Report-final.pdf

5 Best practice design and delivery

5.1 The design and delivery of grid infrastructure – to date, typically overhead lines and substations – are the sharp ends of the overall planning process. For the future, better grid design and delivery are key to both smooth consenting and social, i.e. community, consent. This section sets out why and how further improvements to design and delivery outcomes are the essential last element in our green grid planning vision (smarter strategic planning; enhanced stakeholder and community participation; co-design and delivery of environmental net gain).

GREEN GRID DESIGN PRINCIPLES FOR THE 21ST CENTURY

5.2 Current grid design is still governed by the Holford Rules, little changed since they were first drawn up in 1959.[44] Further guidance (the 'Horlock Rules'[45]) on the siting of substations was issued in 2009. The dated nature of these design rules underscores the widespread concern among affected communities that the *Great Grid Upgrade* will deliver mid-20th century solutions despite the opportunities offered by more innovative technologies and choices.

5.3 The government's Transmission Acceleration Action Plan (TAAP) has accepted that current rules for overhead lines (OHL) are 'not comprehensive and have not been updated for some time'.[46] In response, the government has agreed to the proposal by the Electricity Networks Commissioner *'to create new Electricity Transmission Design Principles (ETDP), which have the potential to provide clarity on how infrastructure design could be improved and where alternative options could be considered such as different pylon designs or more detailed criteria for undergrounding cables, allowing for more meaningful discussion about choices with host communities.'* (TAAP, p.33, 2023)

5.4 The three counties welcome this process and the intention to consult publicly on the draft design principles. We see it as a significant early opportunity to green the *Great Grid Upgrade*. However, to ensure the ETDP's future legitimacy, it is vital that the ETDP working group includes relevant non-governmental environmental stakeholders plus community and local government representation. Lack of wider participation has already marred the legitimacy of the HND and CSNP processes. Stakeholder engagement needs widening across most of the current grid planning forums.

[44] https://www.nationalgrid.com/sites/default/files/documents/13795-The%20Holford%20Rules.pdf

[45] https://www.nationalgrid.com/sites/default/files/documents/13796-The%20Horlock%20Rules.pdf

[46] See p.33 in https://assets.publishing.service.gov.uk/media/65646bd31fd90c0013ac3bd8/transmission-acceleration-action-plan.pdf

5.5 In the following sub-sections, we outline the key areas for establishing new best practice design principles.

TABLE 3: THE GREEN GRID PLANNING HIERARCHY

PROJECT DELIVERY STAGES	HIERARCHY OF PLANNING ACTIONS	KEY OUTCOMES
NEED CASE (SYSTEM OPERATOR/ESO)	**Reduce need for connections** through altered modelling assumptions: increased ambitions for energy efficiency, DSR, flexibility, distributed energy	FES/ETYS/NOA still underpins need but **number of connections reduced/need met in other ways** Broad optioneering/SEA conducted in CSNP/HND identifies **project driver and need case**
STRATEGIC PROPOSAL/ OPTIONEERING (TRANSMISSION OWNER/NGET)	Strategic constraint mapping (informed by SEA). **Includes wider non-statutory stakeholder input** Network modelling prioritises a) offshore and **then** b) undergrounding options. Maximise use of new technology options (e.g. superconductors) Options appraisal with full CBA testing, including economic impact of both the connection (lifetime cost basis) and environmental costings (e.g. value of landscape damage avoided)	**Transparent matrix of OHL and non-OHL options assessed, informed by full SEA and CBA** **Strategic proposal identified**
PROJECT DEVELOPMENT – PRE- AND POST-CONSENTING (TRANSMISSION OWNER/NGET)	**Offshore:** constraint mapping of seabed, marine areas, identify corridor options; also in relation to coastal landings and onward onshore connection	**Offshore route prioritised where possible.** Impacts avoided, mitigated and/or compensated.
	Early engagement with regional/ local stakeholders for formative input/co-design/identification/ delivery of benefits	**Significant environmental net gain (ENG) delivered and benefits co-designed with stakeholders/ communities affected**
	Onshore: constraint mapping, identify corridor options commensurate with hierarchy of undergrounding whole route (HVDC), **then** mixed OHL with extensive HVDC or AC undergrounding	**Underground cabling prioritised to protect landscape and communities.** Where OHL used, impacts avoided, mitigated and/or compensated
	Early engagement with regional/ local stakeholders for formative input/co-design/identification/ delivery of benefits	**Significant environmental net gain (ENG) delivered and benefits co-designed with stakeholders/ affected communities**

INCREASING THE USE OF ALTERNATIVES

5.6 A much more pro-active approach to alternatives (to OHL) is required if the onshore impacts of electricity transmission are to be minimised in rural areas. This must be the key starting point for the design of mitigation in the ETDP.

Offshore grids

5.7 Earlier we highlighted the mismatch between ESO's Offshore Coordination Project's 2020 estimate of reducing the number of new electricity infrastructure assets by 50% by 2050 (re-quoted in the new EN-1 National Policy Statement at para. 3.3.75) and the paucity of ambition offered in the Holistic Network Design in 2022. A more determined approach to creating a truly offshore grid must be facilitated both in policy and guidance, including the forthcoming ETDP. This should include the green grid planning hierarchy approach where a high-level policy presumption is set for subsea connections, where feasible (noting the high environmental sensitivity of many marine areas), then undergrounding (see Table 3). Greater ambition is required so that the ESO 2020 OTNR prediction of an integrated approach reducing infrastructure (cabling and onshore landings) by 50% can be realised.

CASE STUDY B

OFFSHORE SOLUTIONS – ESO EAST ANGLIA NETWORK STUDY

This recent study[47] carried out by ESO, with community input, looks at ten alternative connection options if – as proposed through the Offshore Co-ordination Support Scheme (OCSS) – two offshore wind farms (North Falls and Five Estuaries) connect to land via the SeaLink undersea cable from Suffolk (Friston) to Kent, rather than the original landing point on the Tendring peninsula in Essex (see Table 1).

Whilst alleviating potential impacts in Essex (although the Tarchon interconnector might still make landfall in the Tendring area), most of the new connection options would involve overhead lines, sometimes in addition to N2T. Offshore options, tabled by community representatives, were analysed but scored poorly, either due to deliverability issues (current issues with global market sourcing) or environmental impacts (undergrounding or subsea cabling through sensitive designated areas, both land and marine).

Many options scored poorly as the result of landing power further north (Friston compared with the Tendring area) made for worse power 'bottlenecks' in the region, adding to greater lifetime costs (as constraint costs are increased when there is insufficient connection capacity). In this sense, the co-ordination 'solution' (new windfarms 'plugging in' to the SeaLink cable) suggested through OCSS can be seen as sub-optimal. Indeed, the ESO study described the new set of problems as 'critical trade-offs'.

For the purposes of this report, there are two main conclusions. First that additional offshore co-ordination – if done in a very limited and constrained regional context, without long term forward planning – can be counterproductive. In particular, the Suffolk landing point (around Friston and Saxmundham, sensitive in ecological, landscape and heritage terms) becomes an extended 'sacrifice zone', suffering unacceptable long term cumulative planning blight.

Secondly, on a more positive note, the lifetime cost of HVDC undergrounding between Norwich and Tilbury (Option 8) was shown to be of a similar magnitude to OHL costs, especially when a delayed delivery date of 2034 was factored in. This strongly suggests that HVDC undergrounding of N2T (irrespective of whether the Sealink co-ordination proceeds) is a viable long-term solution to significantly reduce landscape and community impacts in the region.

[47] https://www.nationalgrideso.com/document/304496/download

Undergrounding

5.8 The most significant area for amendment of guidance, via the ETDP, would be the balance of decision making in respect of undergrounding in valued landscapes that fall below the designated landscape threshold (where the presumption of OHL has already been reversed, see EN-5 para.2.9.20). However a rationale for wider undergrounding is already given in text on feasible alternatives (re-routing, undergrounding and subsea cables) at EN-5 para.2.9.14 and 2.9.23. Thus where, in non-designated landscapes, there is '*a high potential for widespread and significant adverse landscape and/or visual impacts'* undergrounding should now be prioritised.

5.9 This change would mark a substantive shift enabling much more undergrounding, rather than – as currently envisaged in the TAAP ('providing clarity', see quote above on p.26) – a more detailed explication of the status quo. Merely giving a better explanation of why undergrounding has been discounted as an option is unlikely to significantly improve social acceptability. The proposed shift to greater undergrounding is not made naively; we are aware of the additional cost involved (although this could be abated in part by market innovation, e.g. the use of HVDC cabling). It is also recognised that a regulatory shift away from the 'cheapest consentable solution' will be required from government and Ofgem.

CASE STUDY C

THE CASE FOR UNDERGROUNDING IN EAST ANGLIA

In recent consultations on proposed new OHL in East Anglia (Bramford to Twinstead, B2T; Norwich to Tilbury, N2T) there has been widespread concern expressed by local authorities and affected communities regarding the visual impact of pylons in key valued landscapes outside of Areas of Outstanding Natural Beauty (AONB, now 'National Landscapes', NL). This is compounded in East Anglia by the preponderance of large, flat open landscapes which pylons would dominate. Given the density of local heritage assets, impacts on their setting is also a key concern.

Put crudely, the current situation is best described as haggling over the small amount of betterment 'crumbs' that might 'fall from the table', as a proposal makes its way through the consenting process. This is an unhelpful and inefficient way to design, plan and deliver new connections.

Whilst concessions of additional undergrounding (outside of AONB/NL) have been made and are welcome (for example, on B2T in the Stour Valley (setting for the Dedham Vale AONB)), a more proactive and strategic approach prior to identifying a preferred option would obviate protracted, time-consuming and resource-sapping negotiations that hinder project delivery. This is currently occurring in relation to a number of additional undergrounding requests – for example by Suffolk CC and others – along the N2T line. These include addressing impacts in the Waveney Valley (especially around Wortham Ling SSSI; harm to heritage assets, e.g. near Badley) and again in the setting of the Dedham Vale AONB.

A further key issue is the positioning of sealing end compounds (SECs) where the buried cabling connects to the pylon line at each end of the undergrounded sections. Too often these intrusive structures (akin to substations) cause harm within either the setting of the designated landscape and/or to adjacent valued landscapes. Generally, calls for more appropriate locations (but requiring a longer cable lay) go ignored. This is the case in relation to Little and Great Wenham on the edge of Dedham Vale, as both SCC and SPS have pointed out. This persistent problem (which occurs nationally) needs to be dealt with by better forward planning and co-design with local stakeholders. This should be addressed as a priority in the ETDP.

5.10 Consumer willingness to pay (WTP) studies (commissioned to underpin a proposed Ofgem fund for pylon removal, established in 2015) have consistently indicated strong public support for undergrounding in valued landscapes. A 2012 study conducted for NGET revealed that 'consumers think there is a need to lessen the visual impact of transmission infrastructure (59%) and that the countryside would be improved by doing so (64%)'. Furthermore, the research found '(w)hen it comes to addressing the visual impact of the transmission infrastructure, undergrounding was the first choice of just over half (55%) of the respondents'.[48] In 2018, a study[49] of NGET's Visual Impact Provision project (the main England-focused component of the Ofgem fund, established by a national levy on bills) demonstrated that a strong majority of consumers found it acceptable to pay for undergrounding in designated landscapes. Whilst rising energy prices in recent years may have dented WTP values, the public's desire for wider undergrounding – in the face of a significant expansion of the grid – is unlikely to abate.

Cable innovation

5.11 The vast majority of the UK grid carries electricity in AC (alternating current) format. DC (direct current) cabling is increasingly being used offshore and in bringing power from offshore wind farms or interconnectors into the UK grid. Using DC has a number of advantages, especially in relation to undergrounding over long distances, but there are also downsides[50] including the need for large 'converter' stations to interface with the AC system. This is explored in case study D below. Nonetheless, opportunities for a more hybrid AC/DC system need to be explored more fully in the ETDP.

CASE STUDY D

SUBSTATIONS: THE NEW SACRIFICE ZONES

Despite the existence of the Horlock Rules, the expansion of many substations (as part of the GGU) is causing serious concern by dint of cumulative impacts. Whilst in part a corollary of increased offshore co-ordination (which is welcome), further controls (via design guidance, i.e. the ETDP) are necessary if such areas – especially in sensitive rural/coastal locations – are not to become sacrifice zones (see Case study B, above).

Friston (as noted above) has been selected as a substation 'hub', initially hosting two converter (HVDC to AC) stations for Scottish Power Renewables (SPR) windfarms East Anglia 1North (EA1N) and East Anglia2 (EA2) plugged into a NGET substation and then onto the Sizewell-Bramford overhead line. The site is very controversial with a series of Court cases: local concerns focus on heritage and landscape impacts, flood risk, noise, cumulative impacts, alternative sites. A second, linked site is slated for the south-eastern edge of Saxmundham where three interconnector converter stations are anticipated (SeaLink, LionLink and Nautilus) with onward cabling to connect to the grid at Friston. At present there is insufficient mitigation of the visual impact of such converter stations, which are substantial structures leading to locally inappropriate industrialisation of the countryside.

Similar problems are occurring at another connection hub: the Norwich Main substation. Multiple new developments here include an extended (new) substation for the proposed N2T pylon line plus an adjacent set of converter stations near Swardeston serving three offshore windfarms (Sheringham Shoals, Dudgeon Extensions and Hornsea3). Cumulative land take and visual impacts are now compounded by the proposed addition of battery storage ('energy balancing infrastructure') and associated light pollution impacts within a NCC-designated Rural Dark Landscape zone.

These two case studies illustrate a need for better locational guidance, including prioritising brownfield sites at distance from the existing grid supply point, even if this means longer, more costly cable lays. Grid supply points, i.e. existing substations, should not become default cluster points (hubs) for grid infrastructure, especially where cumulative impacts in sensitive landscapes are anticipated. The Horlock rules must therefore be revised as part of the forthcoming ETDP to avoid such locational distortions.

[48] See https://www.nationalgrid.com/electricity-transmission/document/128301/download#:~:text=34%20In%20a%20straightforward%20ranking,this%20as%20their%20first%20choice.

[49] https://www.nationalgrid.com/electricity-transmission/document/121706/download

[50] See this useful HVDC factsheet: www.nationalgrid.com/sites/default/files/documents/13784-High%20Voltage%20Direct%20Current%20Electricity%20%E2%80%93%20technical%20information.pdf

5.12 Another technology, albeit at an earlier development stage, is superconductors. NG Partners, the corporate venture and innovation arm of National Grid, is investing in TS Conductor, a US company whose 'technology replaces legacy materials in high-voltage electricity lines with a next generation conductor that doubles the lines' capacity without the need to retrofit towers or other infrastructure'.[51] Recognising that the transmission grid is the backbone of the current energy transition, TS Conductor believe 'a 21st century power grid deserves more than 20th century wires'[52] – mirroring the premise of this report.

5.13 Others agree: a coalition of East Anglian parish[53] have already made formal representations[54] to the Bramford to Twinstead DCO Examination questioning the lack of consideration of this technology in the strategic optioneering of the proposed OHL connection. Given the cited benefits, its potential for near-term deployment in NGET's *Great Grid Upgrade* must be an urgent priority.

WIDER ENVIRONMENTAL NET GAIN

5.14 Through upward pressure on environmental standards in the last two decades, there is already a raft of environmental considerations that transmission schemes must take into account, as outlined in the newly revised NPS, EN-1 and EN-5. Some of these, such as biodiversity net gain, are required by legislation and contribute to national strategic targets (e.g. in the 25 Year Environment Plan, 25YEP). The 25YEP also committed to the development of 'environmental net gain' (ENG) – '*an approach to development that aims to leave the natural environment in a measurably better state than beforehand'. EN-1 (para.4.6.1) adds to this: 'Projects should therefore not only avoid, mitigate and compensate harms, following the mitigation hierarchy, but also consider whether there are opportunities for enhancements'.*

5.15 Despite powerful arguments by both the Natural Capital Committee[55] (NCC) and the National Infrastructure Commission[56] (NIC), ENG has yet to be developed into a metric or legal requirement, consistent with biodiversity net gain. Nonetheless, both EN-1 (see paras 4.6.1, 4.6.6, 4.6.13, 4.6.15 and 4.6.18) and EN-5 (para.2.5.1) encourage the delivery of '*wider environmental gains and benefits to communities relevant to the local area, and to national policy priorities'* (EN-1, para.4.6.13). Furthermore, EN-1 (para.4.6.15) also requires *'a statement demonstrating how opportunities for delivering wider environmental net gains have been considered, and where appropriate, incorporated into proposals as part of good design (including any relevant operational aspects) of the project'.*

5.16 In our view, the ENG approach could be readily translated, via clear guidance in the ETDP, into a vital new tool to deliver a range of cumulative benefits to offset residual impacts of significant grid transmission infrastructure. This would operate through national, regional and local levels of benefit:

- *increased opportunities for enhancement of natural capital as whole route corridor mitigation: thus fulfilling the overall environmental net gain ambition;*
- *use of grid corridor 'visual catchments'*[57] *to enhance blue and green infrastructure, for example: flood protection; enhancing tree and woodland cover (screening); rewilding; carbon sequestration etc;*
- *through biodiversity net gain, help meet national nature recovery ambitions – adding cumulative value through existing and new local nature recovery strategies;*
- *delivering local environmental benefits (landscape, amenity, sustainability, access to countryside), driven by the needs and aspirations of local communities, expressed through participative design panels and/or community forums.*

[51] https://www.nationalgridus.com/News/2021/10/National-Grid-Partners-Driving-Clean-Energy-Future-with-24-Million-in-New-Startup-Investments-/

[52] https://tsconductor.com

[53] Parish Councils of Assington, Bures St Mary, Leavenheath, Little Cornard, Polstead & Stoke by Nayland

[54] infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020002/EN020002-001475-The%20Parish%20Councils%20of%20Assington,%20Bures%20St%20Mary,%20Leavenheath,%20Little%20Cornard,%20Polstead%20&%20Stoke%20by%20Nayland%20-%20Comments%20on%20submissions%20received%20at%20Deadline%206.pdf

[55] https://assets.publishing.service.gov.uk/media/5f354ed5e90e0732debd3115/ncc-advice-net-enviornmental-gain.pdf

[56] https://nic.org.uk/studies-reports/natural-capital-environmental-net-gain/

[57] i.e. within the landscapes comprising the zone of visual influence (ZVI) of the grid infrastructure

5.17 In stakeholder discussions with CPRE in 2021/22, NGET shared their future thinking[58] on environmental net gain – akin to that outlined above – to help them meet environmental delivery targets set with Ofgem. Our proposals above borrow from some of that thinking which was intended to facilitate NGET's transmission network to help deliver a more holistic approach to rural land use. This important goal should be kept front and centre of future grid planning.

GAIN AND THE HISTORIC ENVIRONMENT

5.18 As Historic England (HE) has commented (to little effect), the draft of EN-5 contained very limited specific reference to the historic environment, compared with biodiversity, landscape and visual impact.[59] This is an unfortunate oversight but could be rectified in part by the ETDP providing additional clarificatory guidance, taking into account HE's specific concerns in respect of EN-5. This is a necessary step as there can be significant impacts on historic landscapes and heritage assets arising from major grid infrastructure (especially below the level of 'substantial harm': e.g. NGET not addressing avoidable harm at Hintlesham Hall and Park caused by pylons on the Bramford to Twinstead route).

5.19 We also consider that a parallel approach to ENG could be considered for the historic environment, relating to EH's guidance on mitigation hierarchy[60] with gain/enhancement being provided through maximising opportunities for public benefit.

OPERATIONALISING DESIGN INTO DELIVERY

5.20 The drafting of the ETDP (scheduled for consultation late in 2024) is a huge opportunity for new guidance that could facilitate a significant step change in the delivery of a much greener grid – fit for the 21st century. Not only could it deliver much needed environmental net gain (ENG) and nature recovery but also – through co-design of widespread local enhancements – significantly ease social licence and thereby speed the consenting of forthcoming grid infrastructure. Given that delivery of ENG is specifically enabled by the NPS (EN-1 and EN-5), there are few strong policy barriers to block this enhanced approach to scheme mitigation.

5.21 However, it does raise the issue of the relationship of ENG (which could be viewed as compensatory) with the government's community benefits scheme for electricity transmission, currently being developed by the Department of Energy Security and Net Zero (DESNZ). At this stage there may not be a definitive answer or policy route forward but it is clear that the provision of local ENG benefits (last bullet in the section above) clearly overlap with some of the potential workstreams that could arise from the community benefits scheme. However, the main goal is to deliver a holistic set of regional and local environmental, nature recovery and community gains, in addition to the national net zero benefits that an upgraded grid brings us. The means of delivery is secondary (but tractable) but needs to secure the benefits that enable the best transition to net zero..

[58] Initially in RSK (2020) East Coast Strategy - Environmental Net Gain Exemplar Project: A Proposal from RSK Environment and later in their 'Grid for Nature' draft proposals (both unpublished)

[59] https://historicengland.org.uk/content/docs/consultations/response-draft-national-policy-statements-energy-infrastructure-may2023

[60] https://historicengland.org.uk/images-books/publications/planning-archaeology-advice-note-17

6 An agenda for action

OVERVIEW

6.1 CPRE Essex, CPRE Norfolk and the Suffolk Preservation Society (who represent CPRE in Suffolk) all recognise the urgent need to decarbonise to meet vital net zero targets as soon as possible and avert the worst effects of climate change. This involves rapid deployment of renewable energy and in particular offshore wind off the coast of East Anglia. The three counties support a green energy revolution but not one that ruins precious countryside. In an already crowded region, long swathes of new pylons and overhead lines are no longer acceptable.

6.2 The brunt of grid reinforcements will obviously fall on areas of open countryside, impacting on landscape quality, tranquillity, biodiversity, the setting of historic landscapes, historic buildings and the amenity of communities. The research in this report has highlighted – in outline – the regional scale of the impacts with at least 18 major projects in East Anglia and the wider east of England area. On occasion, a subsea route has been chosen in preference to lengthy, disfiguring pylon lines. This is to be commended. Such solutions also show that there are workable alternatives to the damaging prospect of swathes of new overhead lines.

6.3 Nonetheless the number and length of new overhead lines in the *Great Grid Upgrade* is unacceptable. The scoping, consenting and delivery of the new connections needed will be a mammoth undertaking, predominantly borne by NGET and is set to affect rural communities all over England. Many proposals are already 'live' and causing incalculable worry and unrest in local communities – and sparking wider political consternation in East Anglia.

6.4 This need not be so. But sadly, the antipathy of communities is a direct response to the unwieldiness and directive nature of the current planning regime for nationally significant infrastructure projects where development, to coin a phrase used by Suffolk County Council, is done to them, not with them. Much of this report has analysed and set out the problems with the current system, which are likely to continue despite a raft of new policies and strategies being announced in the Autumn Statement in November 2023.

6.5 The current problems can be summarised in brief as:

- over-estimation of the need for network reinforcement, risking overbuild and costly stranded assets;
- planning reforms that prioritise the 'need for speed' instead of building social licence; and
- continuing a 'cheapest consentable' approach, disregarding a range of innovative solutions that could significantly alleviate the worst impacts on landscapes and communities.

6.6 All this needlessly undermines social licence and threatens NGET's delivery of their *Great Grid Upgrade*.

The discussion we now need to have is therefore about the 'art of the possible'. Based on this report's analysis, drawn from government, industry and independent expert sources, we propose a way forward in the form of the greener grid planning vision and the green grid planning hierarchy.

6.7 Despite the fact that government policy has only just been revised, with the express intention of accelerating the delivery of new transmission infrastructure, we are still clear that the green grid planning vision and planning hierarchy plus the recommendations below offer practical, workable solutions which dovetail into the ongoing development of new grid planning, design and delivery mechanisms.[61]

[61] See Tables 2 (p21) and 3 (p27) for the green grid planning vision and hierarchy.

RECOMMENDATIONS

1 **Halt work on the Norwich to Tilbury scheme:** a recent expert needs case analysis (the 'Hiorns report') for Essex, Norfolk and Suffolk county councils exposed serious holes in the needs case for this major overhead line, citing overestimation of the urgency of connection. The report also showed feasible offshore solutions could accommodate the extra power flows at much lower costs than previously quoted. The new ESO East Anglia network study also shows a HVDC underground line from Norwich to Tilbury to be another viable alternative. The Norwich to Tilbury line should now be paused for review whilst need, timings and alternative solutions are investigated more thoroughly. An offshore solution (a second subsea link) or HVDC undergrounding is strongly preferred to the proposed overhead line.

2 **Consider need and the risk of overbuild:** There is clearly a balance to be had between having a precautionary, contingency-led approach and the risk of overbuilding of the network and creating costly stranded assets, especially where the impacts of major infrastructure on communities and the environment are significant and long lasting. Greater deployment of smart solutions, including greater ambition on energy efficiency, support for smart local energy systems (including a rapid expansion of rooftop solar and community energy) and strategic planning of the location of large energy demands, are key first steps. For the future, FES must be revised to include much greater ambition for locational demand centres, distributed energy and flexibility to avoid overprediction of energy need and grid system overbuild.

3 **Deliver better strategic planning:** whilst the recent government focus on strategic planning of the grid is most welcome, more ambition is required, especially in securing greater offshore co-ordination, if the volume of infrastructure (and hence the impact footprint) is to be reduced by half, as previously predicted by ESO. This must occur at pace as the Centralised Strategic Network Plan (CSNP) is further developed. The CSNP must frontload more rigorous environmental assessments (SEA) to provide a more holistic analysis of onshore and offshore options. To provide better balancing of environmental and community constraints, the CSNP must be opened up to inputs from wider environmental and community stakeholders.

4 **Deliver enhanced offshore integration for East Anglia:** the new ESO East Anglian network study reveals that the 'early opportunities' (OCSS) scheme (landing offshore wind power via Sea Link at Friston in Suffolk rather than Tendring in Essex) is unlikely to meaningfully reduce local environmental and amenity impacts unless wider offshore or undergrounding solutions are employed. The early opportunities coordination model must be improved and widened, maximising offshore and undergrounding solutions. A stronger approach to co-ordination also needs to be taken in the Holistic Network Design and *Beyond 2030* network plans.

5 **Deliver a new Great Green Grid via the new Electricity Transmission Design Principles:** create a new smart, green grid where better policy and technology innovation protects and enhances landscapes and amenity, biodiversity and heritage whilst helping rural communities achieve their low carbon and local development goals. Better onshore solutions, including undergrounding, the provision of environmental net gain, and earlier and more meaningful participation – through design panels and community forums – will increase social consent and speed up consenting.

6 **Implement a more participative approach to community engagement:** build on new government commitments to earlier and more meaningful consultation in the NSIP regime by grading consultation outcomes based on best engagement practice and introducing the use of local design panels and community forums. NGET or government to develop a socially just, transparent and flexible community benefits policy that prioritises sustainability goals (including energy transition) and community and environmental betterment. Community benefit funds to be properly resourced and run, using experienced independent facilitators.

7 **Start a new national conversation about energy infrastructure, place-making and the role of planning for net zero:** this report aims to shine a light on the inequitable impacts on East Anglia countryside and communities and start wider conversations about better grid planning. There is a strong need for ongoing discussion and wider dialogue in and between local, regional and national polities, from parish and town councils right up to Westminster and Whitehall. However, there remain issues such as wider participative engagement in planning or formalising environmental net gain, that still sit on the government's 'too difficult to do' pile. The immediate need is to address the short-term changes required to green the *'great grid upgrade*' in East Anglia but we also recommend wider reflection by Government (DESNZ, Defra and DLUHC) on how better planning for net zero be put in place.

Appendix

THE REST OF ENGLAND

Elsewhere in England (see Table 4) there are a further five GGU projects due for delivery by 2031, including at least one major new overhead line (North Humber to High Marnham). Two projects are subsea connections facilitating increased power flows between Scotland and northern England, commendably avoiding the need for lengthy overhead lines through southern Scotland and northern England. Although the onshore cable links would be routed underground, further large converter stations (which would be visually intrusive) are required close to the grid connection point.

In addition to the GGU projects, there are a further seven major reinforcement projects slated for the rest of England, most of which appear to comprise substantial distances of new overhead lines. However, it is not clear whether some are duplicate options. Nonetheless, the spectre of at least two further long pylon lines between Scotland and England (both east and west coasts) is emerging post-2030. This is despite more offshore links being proposed in the HND which would provide both windfarm connections and additional reinforcement capability.

Finally for the rest of England, a further 11 European interconnectors have been identified as slated to be built between now and 2032. Currently these envisage individual landings, primarily on the south and east coasts, usually with buried onshore cable routes but again with the potential for highly intrusive above-ground infrastructure in the form of converter stations near the grid connection point. Despite ten interconnector projects being stated[62] as being 'in scope' of the Government's 'Early Opportunities' workstream for offshore coordination in 2021, none have been slated for offshore co-ordination in the HND.

Beyond 2030, ESO's latest iteration of its strategic network plan, has just been published (March 2024). Whilst it sheds further light on some new connections between Scotland and England, the amount of offshore co-ordination remains minimal.

[62]https://www.eastsuffolk.gov.uk/assets/Planning/Strategic-engagement/11-SCC-ESC-Response-Letter.pdf

TABLE 4: MAJOR GRID/CONNECTION PROJECTS IN EAST ANGLIA/EAST OF ENGLAND (drawn from HND/Pathway to 2030; NOA 2021/22 refresh)

TYPE OF GRID INFRASTRUCTURE	OTHER MAJOR GRID/CONNECTION PROJECTS IN ENGLAND (outside of East Anglia/East of England) (n = 12)	PROPOSED COMPLETION	AREA(S) AFFECTED	CURRENT STATUS (AND IF PART OF NATIONAL GRID'S GREAT GRID UPGRADE (GGU))
New overhead line	**North Humber to High Marnham:** 90km new 400kV double circuit	2031	East Riding N Lincs Notts	A new project emerging in 2023 after HND and the NOA2021/22 Refresh. Further consultation planned in late 2024. *GGU project*
Substations, larger pylons?	**Brinsworth to High Marnham:** Uprating existing line from 275kV to 400kV and building new substations – could involve larger pylons	2028	S Yorks Derbyshire Notts	In very early stages: scoping discussions with landowner for survey access. No dates for consultation. HND recommended as 'essential option' with earliest optimal delivery date of 2028. *GGU project*
New overhead line, new substations	**New Chesterfield to Ratcliffe-on-Soar 400kV double circuit**	2030	Derbyshire Notts	HND 'essential option' in NOA 2021/22 Refresh. Unclear if this has been superseded by combination of two schemes above?
New overhead line, UG cable, sealing end compounds, substations	**Yorkshire Green:** new 400kV double circuit and complex upgrades between around York and Tadcaster	2027	North Yorkshire	DCO examination concluded September 2023 and a decision by the Secretary of State is awaited. *GGU project*
Direct current cable link, converter stations and subsea cabling	**Eastern Green Link 1:** offshore 2GW cable from Torness (Scotland) to Hawthorn Pit (near Seaham, Co. Durham). New substation plus two converter stations	2029	Co. Durham (East Lothian)	Consenting largely complete. HND recommended as 'essential option' with earliest optimal delivery date of 2027. *GGU project*
Direct current cable link, converter stations and subsea cabling	**Eastern Green Link 2:** offshore 2GW cable from Sandford Bay near Peterhead (Scotland) to landing near Bridlington, then UG cabling (c.80km) to Drax. Two converter stations, one adjacent Drax substation	2029	E Riding N Yorkshire (Aberdeenshire)	Consents largely granted. HND recommended as 'essential option' with earliest optimal delivery date of 2029. *GGU project*
New overhead line?	**New North West England to Lancashire reinforcement**	2036	Cumbria Lancashire	Option found 'optimal' but recommendation to 'hold' in NOA 2021/22 Refresh
New overhead line?	**South East Scotland to north west England AC onshore reinforcement**	2033	Cumbria (SE Scotland)	Option found 'optimal' and recommendation to 'proceed' in NOA 2021/22 Refresh
Direct current cable link, converter stations and subsea cabling	**New HVDC link between North West England and North Wales**	2036	Cumbria Lancashire (N Wales)	Option found 'optimal' but recommendation to 'hold' in NOA 2021/22 Refresh

TYPE OF GRID INFRASTRUCTURE	OTHER MAJOR GRID/CONNECTION PROJECTS IN ENGLAND (outside of East Anglia/East of England) (n = 12)	PROPOSED COMPLETION	AREA(S) AFFECTED	CURRENT STATUS (AND IF PART OF NATIONAL GRID'S GREAT GRID UPGRADE (GGU))
Direct current cable link, converter stations and subsea cabling	**Additional new HVDC link between North West England and North Wales**	2037	Cumbria Lancashire (N Wales)	Option found 'optimal' but recommendation to 'hold' in NOA 2021/22 Refresh
New overhead line	**West Coast onshore Anglo-Scottish new circuit**	2036	(SW Scotland) Cumbria Lancashire	Option found 'optimal' and recommendation to 'proceed' in NOA 2021/22 Refresh
New overhead line	**East Coast onshore Anglo-Scottish onshore reinforcement**	2037	(SW Scotland) Cumbria Lancashire	Option found 'optimal' and recommendation to 'proceed' in NOA 2021/22 Refresh

OTHER ENGLAND (outside East Anglia/East of England) interconnectors (data from NG ESO Interconnector Register 23-01-24)
Development will comprise subsea cabling, landfall work, underground cabling to converter station (DC to AC), connection to NG substation (n = 11)

PROJECT	CONNECTION DETAILS	COMPLETION	AREA	STATUS
Aminth	Denmark to Mablethorpe 1.4GW	2032	Lincs	In scoping; consenting 2026
Aquind	France to Lovedean 2GW	?	Hampshire	Awaiting consent. DCO refused but decision quashed on appeal
Continental Link	Norway to Creyke Beck (Hull) 1.8GW	?	East Riding	Scoping; planning application in 2025
Cronos	Belgium to Kemsley (Sittingbourne) 1.4GW	?	Kent	Scoping
FAB Link	France-Alderney to Exeter 1.25GW	?	Devon	Awaiting consents
GridLink	France to Kingsnorth 1.5GW	2026	Kent	Scoping
Kulizumboo	France to Canterbury 0.7GW	?	Kent	Scoping
Neuconnect	NL/Germany to Grain 1.4GW	2028	Kent	Awaiting consents
SENECA/NU-Link	NL to Mablethorpe 1.2GW	2031	Lincs	Scoping
Southern Link	Germany to Grain 1.5GW	?	Kent	Scoping
The Super-connection	Iceland to Creyke Beck (Hull) 1GW	?	East Riding	Scoping

IAP2 Spectrum of Public Participation

IAP2's Spectrum of Public Participation was designed to assist with the selection of the level of participation that defines the public's role in any public participation process. The Spectrum is used internationally, and it is found in public participation plans around the world.

INCREASING IMPACT ON THE DECISION

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

‘The UK needs to pursue the best net zero energy transition, not simply the quickest’

Richard Cowell

Professor of Environmental Planning, Cardiff University

River Stour, Nayland, Suffolk. Shutterstock

SUFFOLK PRESERVATION SOCIETY

Representing CPRE in Suffolk
Little Hall, Market Place, Lavenham, Sudbury, Suffolk CO10 9QZ
Tel: 01787 247179
Email: sps@suffolksociety.org
Web: suffolksociety.org

The countyside charity
Essex

RCCE House, Threshelfords Business Park, Inworth Road
Feering, Colchester CO5 9SE
Tel: 01376 572023
Email: office@cpre-essex.org.uk
Web: cpressex.org.uk

The countyside charity
Norfolk

15 Pigg Lane, Norwich, Norfolk NR3 1RS
Tel: 01603 761660
Email: info@cprenorfolk.org.uk
Web: cprenorfolk.org.uk