

# **OFFSHORE GRID:** **BETTER, CHEAPER, FASTER**

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Lincolnshire 29/1/2024  
Rosie Pearson

# Agenda

- Background – Great Grid Upgrade
- Pylons in Lincolnshire – the planning process
- How to campaign

# Great grid upgrade?

More cables 2023-2030 than previous 30 years

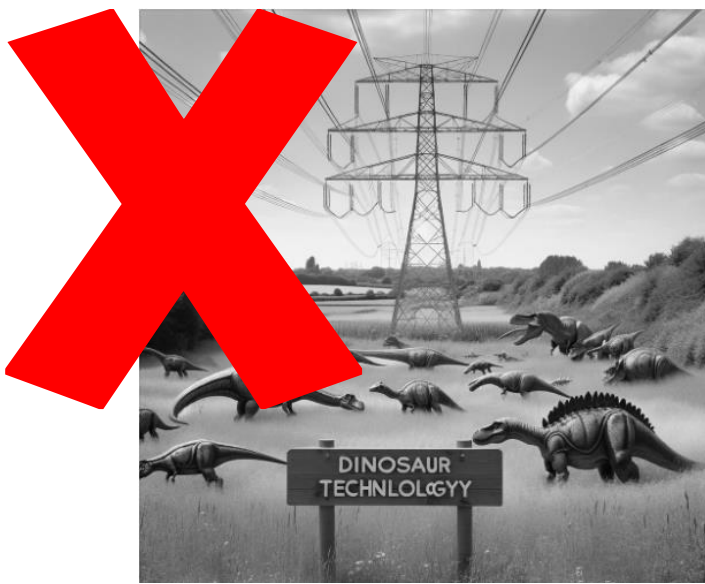
- Underground
- Overground
- Under the sea



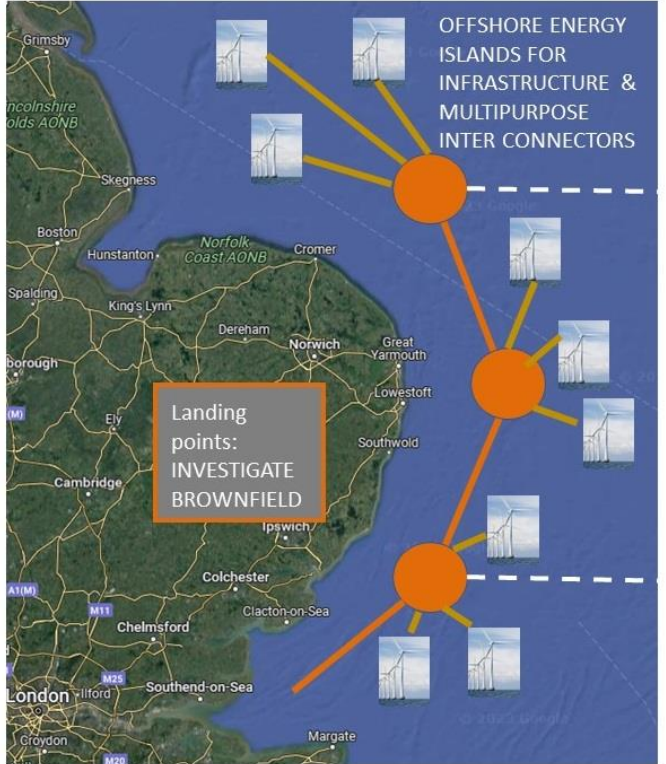
# Great grid upgrade?



Quite simply, Cable Plough is the most efficient, environmentally friendly and effective way of installing pipes and cables below ground.

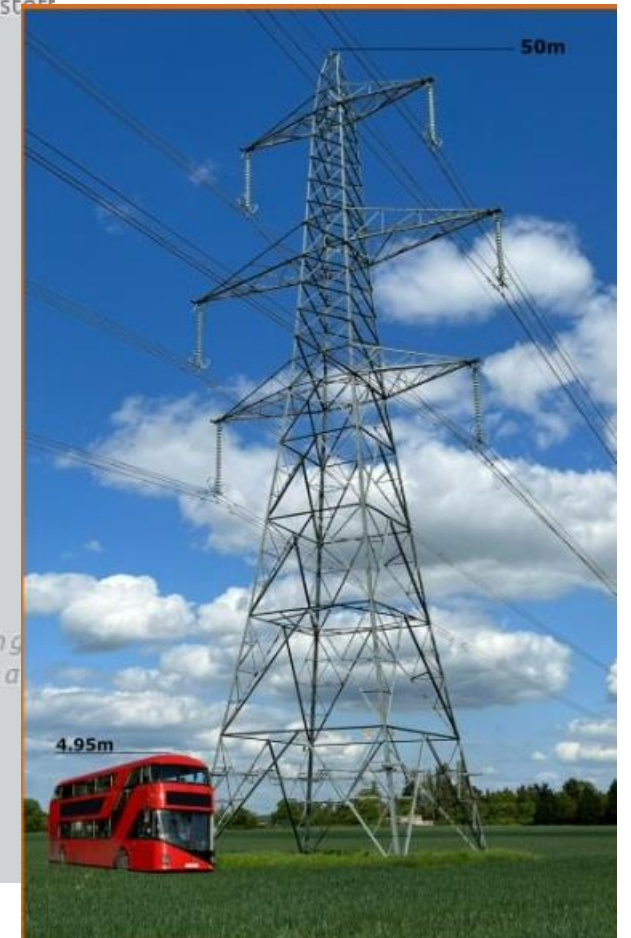
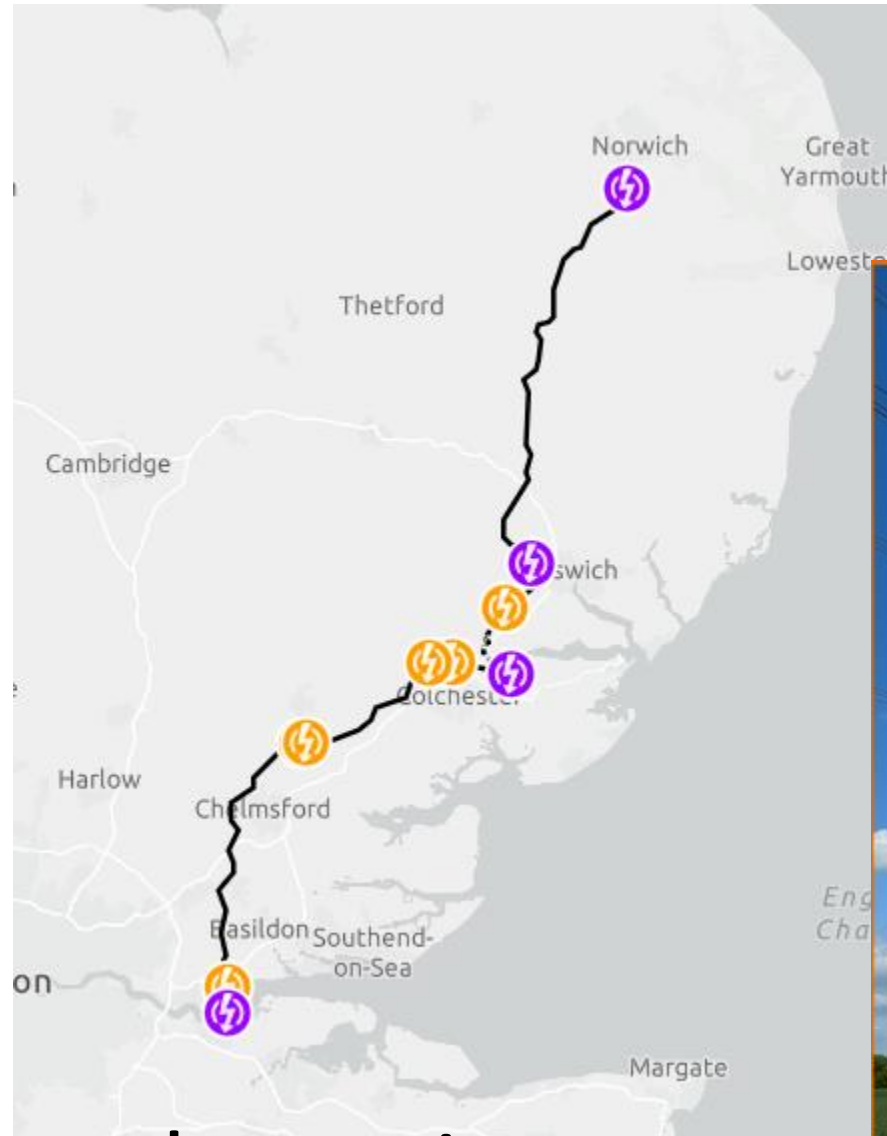
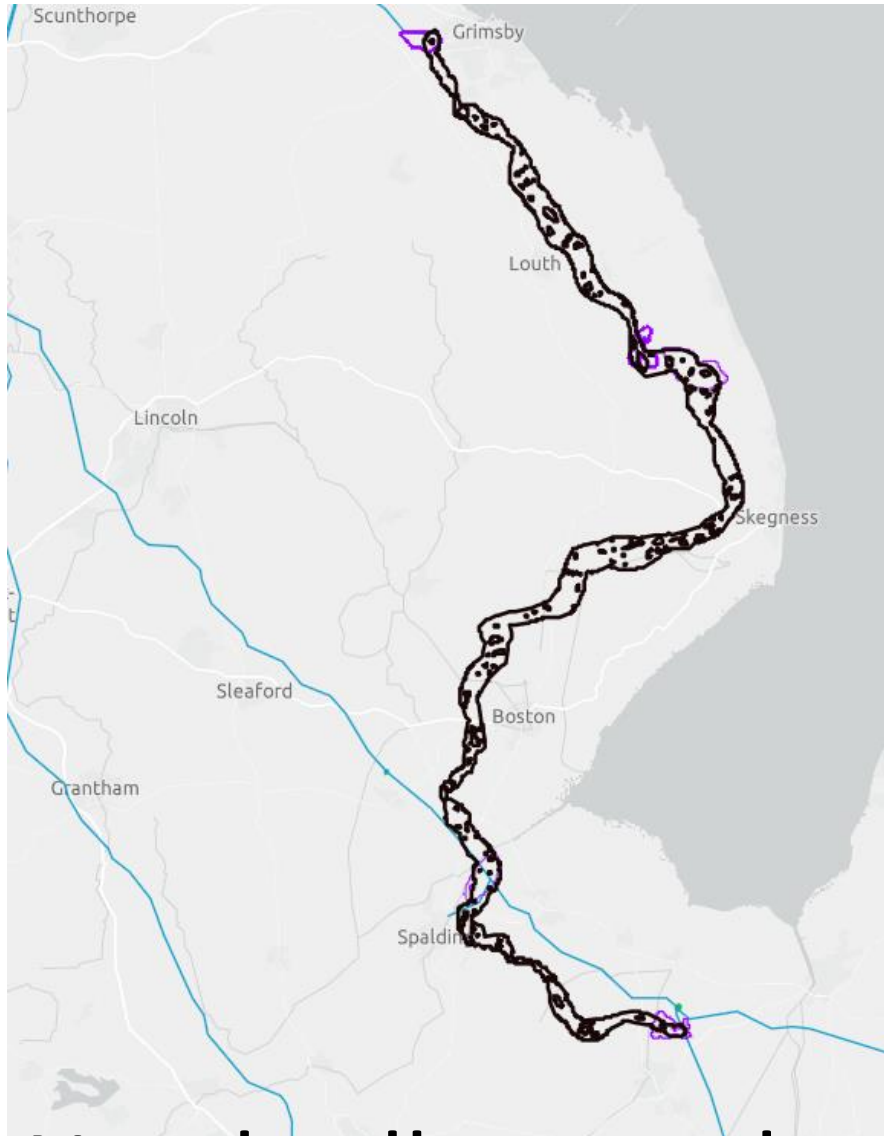


Proudly backed by:  
national **grid**  
partners





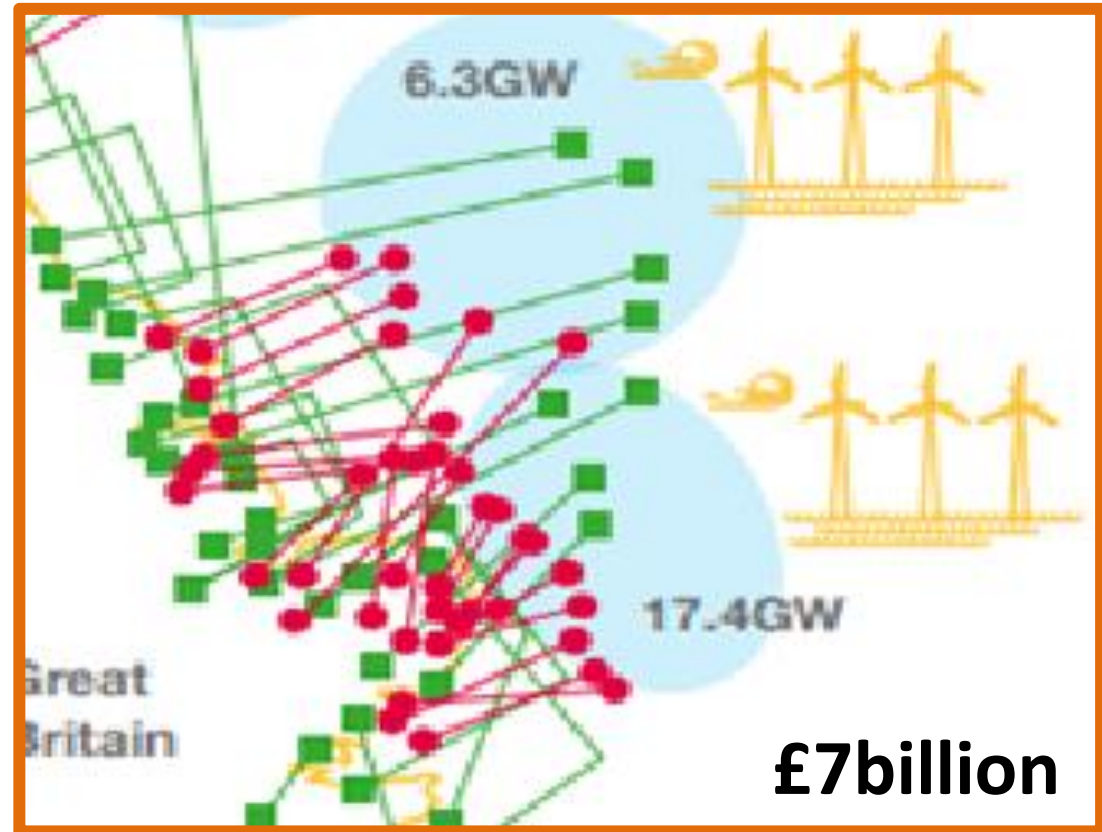
# Pylons proposals... East of England under a bus



Nearly all power leaves the region

# East of England: current

Unplanned,  
piecemeal & pylons



# Planned windfarms (grouped by substation)



2030 Race Bank Extension  
**Cancelled 2019 but on NG's 2023 Norwich Tilbury list**

2025 Vanguard	Necton 400
2026 Norfolk Boreas	Necton 400
2027 Vanguard East 1	Necton 400
2028 Vanguard East 2	Necton 400

Liam Walker confirmed network can cope until 2026 with existing upgrades, including Vanguard and Boreas (in construction/starting soon)

Hornsea Power Station 3	
2026 Stg 1	Norwich 400
2027 Equinor	Norwich 400
Hornsea Power Station 3	
2028 Stg 2	Norwich 400

**NOT on NG's 2023 Norwich Tilbury list:**

Sheringham Shoal & Dudgeon extensions Norwich 400  
 (Norfolk Parishes Movement arguing for Walpole)

2025 East Anglia Two	Bramford 400
2026 East Anglia One North	Bramford 400
2026 East Anglia Three	Bramford 400

**NOT on NG's 2023 GENERATION list (Lawford):**

- Five Estuaries
  - North Falls
  - Tarchon Interconnector
- (But yet NEED case for Norwich to Tilbury is based on these, with Lawford substation)

(Plus Sizewell C. NG says online by 2029, 2030. EDF's lawyers currently say 2034 (March 2023). 1670MW x 2)



# Plus interconnectors

Great Britain's electricity market currently has 6GW of electricity interconnector capacity:

- 3GW to France (IFA and IFA2)
- 1GW to the Netherlands (BritNed)
- 1GW to Belgium (Nemo Link)
- 500MW to Northern Ireland (Moyle)
- 500MW to the Republic of Ireland (East West).
- 1.4 GW Viking Link (Dec 23. Denmark to Bicker Fen.

ASC ENERGY LIMITED	The Superconnection	Creyke Beck 400kV Substation			0	0	1000	1000	1000	1000	#####	Scoping
NATIONAL GRID INTERCC	Continental Link	Creyke Beck 400kV Substation			0	0	1800	1800	1800	1800	#####	Scoping
EIRGRID INTERCONNECT	East West Interconnector	Deeside 400kV Substation			505	585	0	0	505	585		Built
TARCHON ENERGY LIMIT	Tarchon	East Anglia Connection Node 400kV Substation			0	0	1400	1400	1400	1400	#####	Scoping
FAB LINK LIMITED	FAB Link Interconnector	Exeter 400kV Substation			0	0	1250	1310	1250	1310	#####	Awaiting C
NATIONAL GRID INTERCC	Lion (EuroLink)	Friston 400kV Substation			0	0	1600	1600	1600	1600	#####	Scoping
BRITNED DEVELOPMENT	Britned	Grain 400kV Substation			1200	1200	0	0	1200	1200		Built
NATIONAL GRID INTERCC	Southernlink	Grain 400kV Substation			0	0	1500	1500	1500	1500	#####	Scoping
NEUCONNECT BRITAIN L	NeuConnect Interconne	Grain West 400kV Substation			0	0	1400	1470	1400	1470	#####	Awaiting C
CRONOS ENERGY LTD	Cronos	Kemsley 400kV Substation			0	0	1400	1400	1400	1400	#####	Scoping
TI LIRIC Limited	LIRIC Interconnector	Kilmarnock South GSP			0	0	730	700	730	700	#####	Scoping
GRIDLINK INTERCONNEC	Gridlink Interconnector	Kingsnorth 400kV Substation			0	0	1500	1500	1500	1500	#####	Scoping
NATIONAL GRID INTERCC	Nautilus	Leiston 400kV Substation			0	0	1500	1500	1500	1500	#####	Scoping



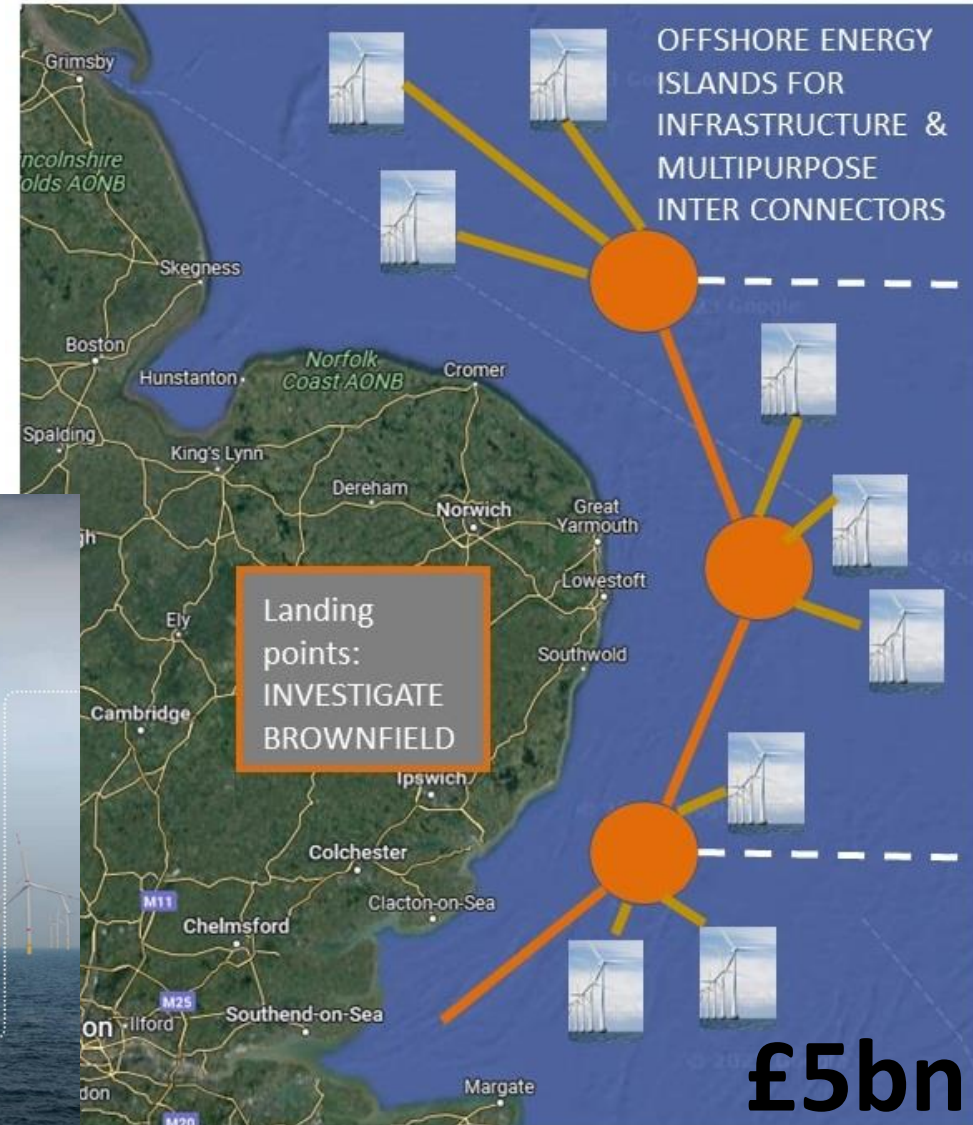
# An integrated offshore grid is best!

50% less infrastructure

£2bn cheaper

Best for

- the environment
- communities
- the network



Planning process

# Planning process

When	What
2024	<b>NG ESO Review</b> Norwich to Tilbury Statutory consultation <i>(two previous consultations)</i> <b>Grimsby to Walpole Non-statutory consultation til 13 March</b>
2025	N2T Development Consent Order (DCO) application. <i>(Possibility of rejection by planning inspector)</i> <b>G2W Stage 2 (Statutory consultation)</b>
2025/26	N2T DCO Examination and decision <i>(Judicial Review?)</i>
2027	N2T Build <b>G2W Development Consent Order (DCO) application. <i>(Possibility of rejection by planning inspector)</i>. Followed by Examination and decision <i>(JR?)</i></b>
2029	<b>G2W Build</b>
2031	N2T Operational
2033	<b>G2W Operational</b>

# Planning process

## Need

*'Critical National Priority'*

*'strong presumption in favour of overhead lines'*

Mitigation

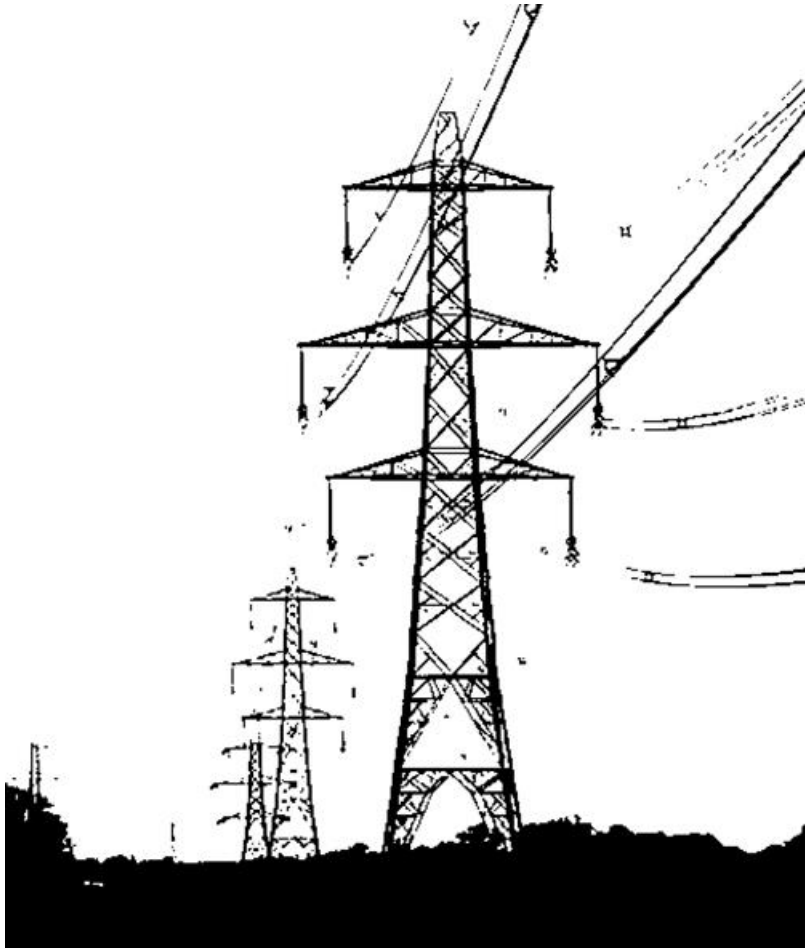


## Harm & legal process

- Heritage
- Landscapes
- Environment
- Health
- Green Book
- Consultation process
- Alternatives
- Predetermination



# Our strategy



- P** – Planning process
- Y** – Yes to an offshore grid
- L** - Lobbying
- O** – Ofgem
- N** – National Grid

# How to campaign!



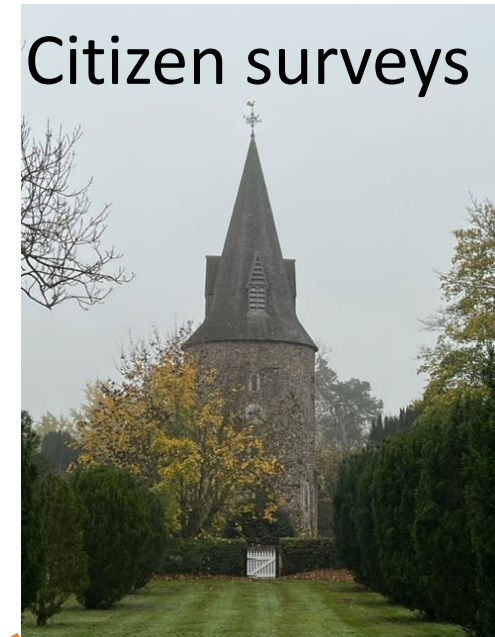
People & placards



Spread the word & respond to consultations

**www.  
pylonseastanglia.  
co.uk**

**£££**



Citizen surveys

## Analysis & evidence

- Covering letter
- Charles Banner KC legal opinion about second non-statutory consultation
- Charles Banner KC legal opinion about Treasury Green Book
- Backcheck
- Design Development Report
- Need
- Bird hotspots
- Priority habitats
- Bird strikes
- Landscapes
- Heritage and culture
- Feedback
- Consultation strategy
- Alternatives: integrated offshore grid
- ESNP survey



**It is not  
a done  
deal!**



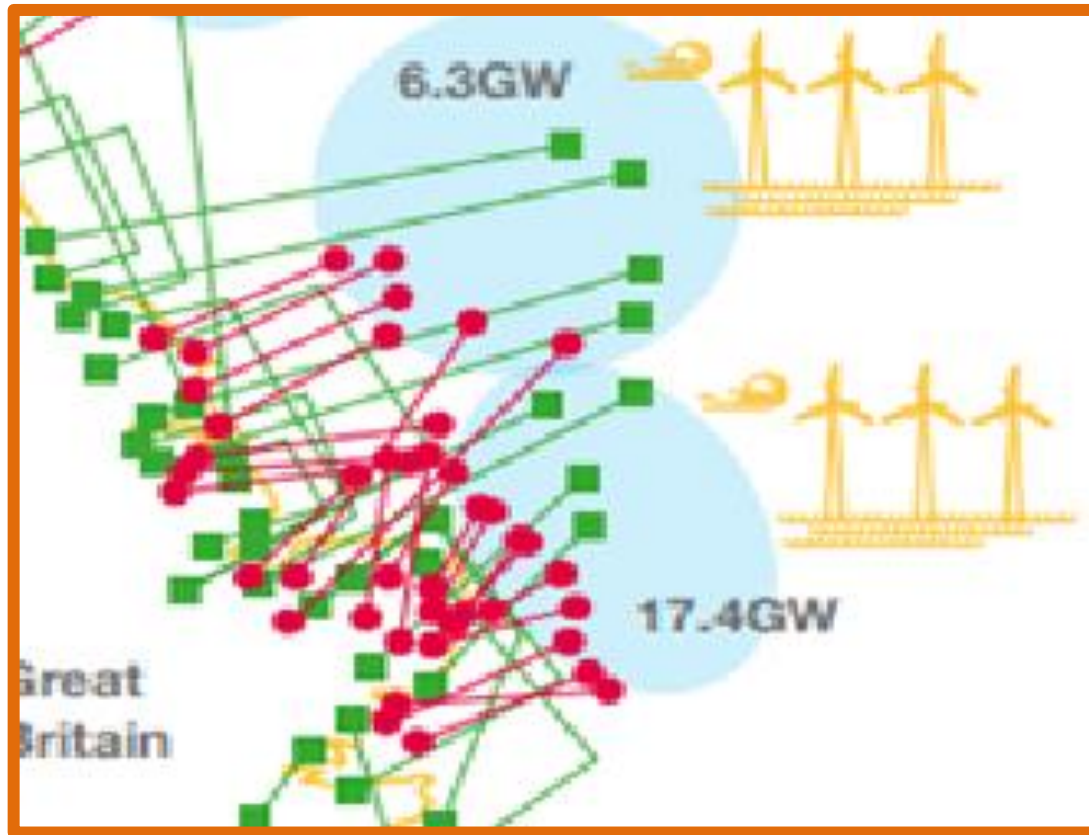
**www.  
pylonseastanglia.  
co.uk**

# Background facts

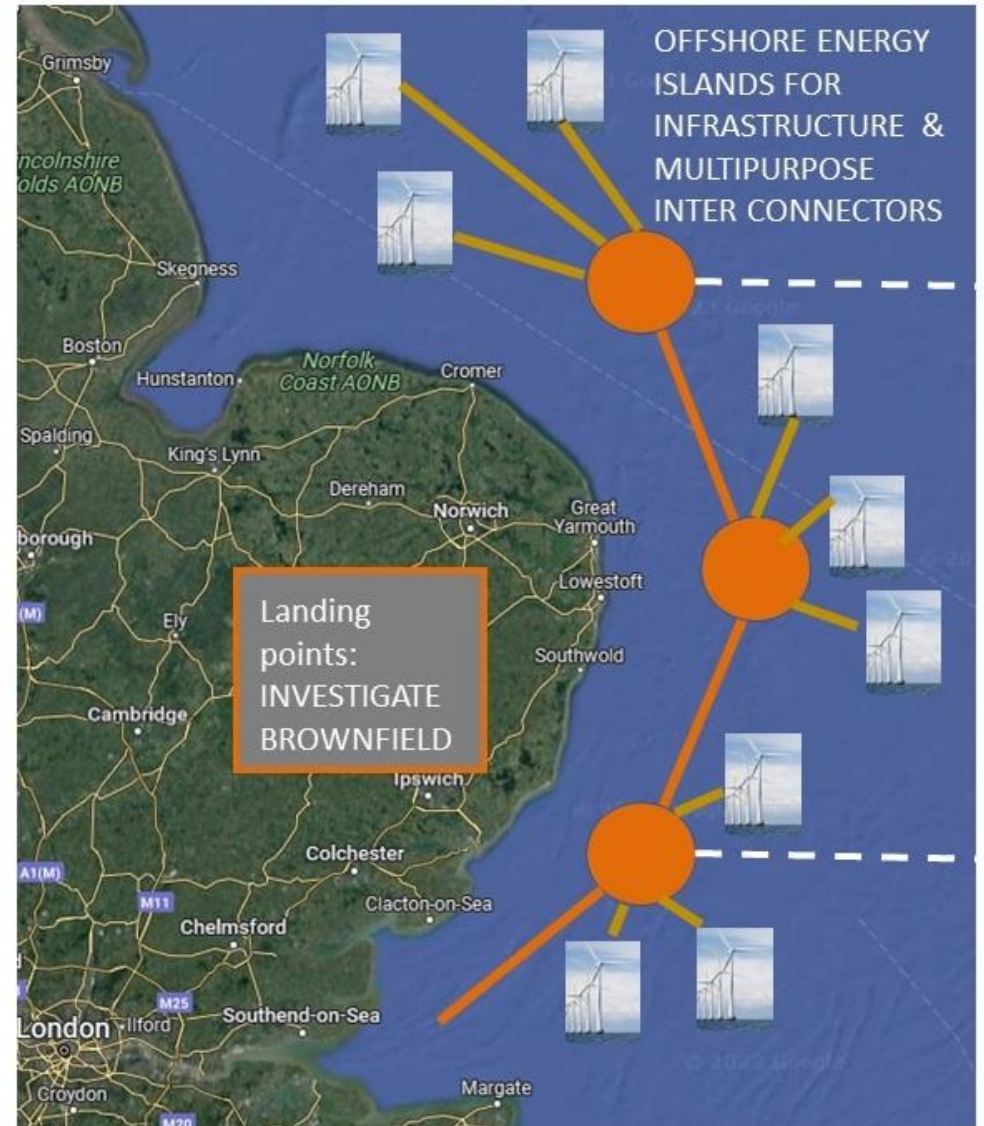
For reference only



# Offshore grid: better, faster, cheaper



£7billion



£5billion

The need above identifies a requirement for two sets of AC 400kV transmission circuits or multiple HVDC connections to resolve the NETS SQSS compliance and two distinct sets of issues as set out below.

- Issue (a), a circuit is required to ensure compliance from the Creyke Beck generation group whilst also providing >6 GW of boundary capacity across the B8 boundary.

Figure 6.1 – Indicative map of strategic options considered to resolve issue (a)

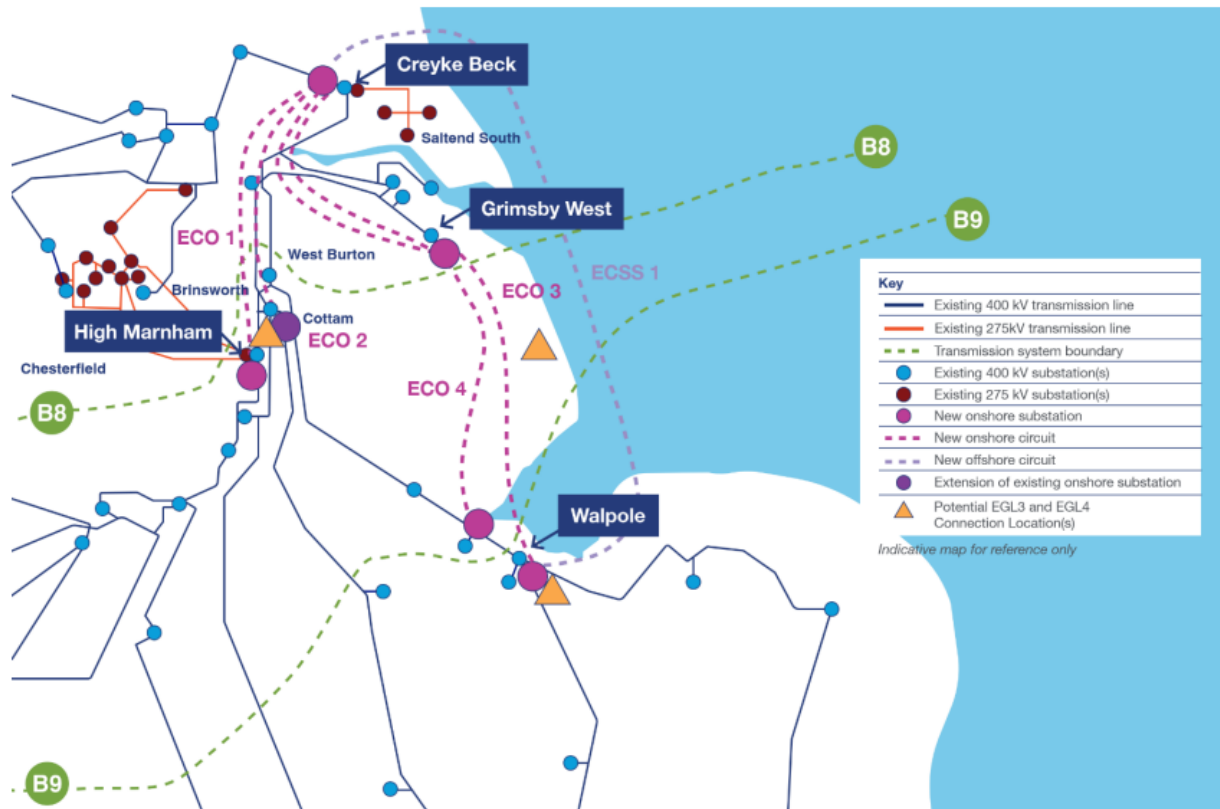
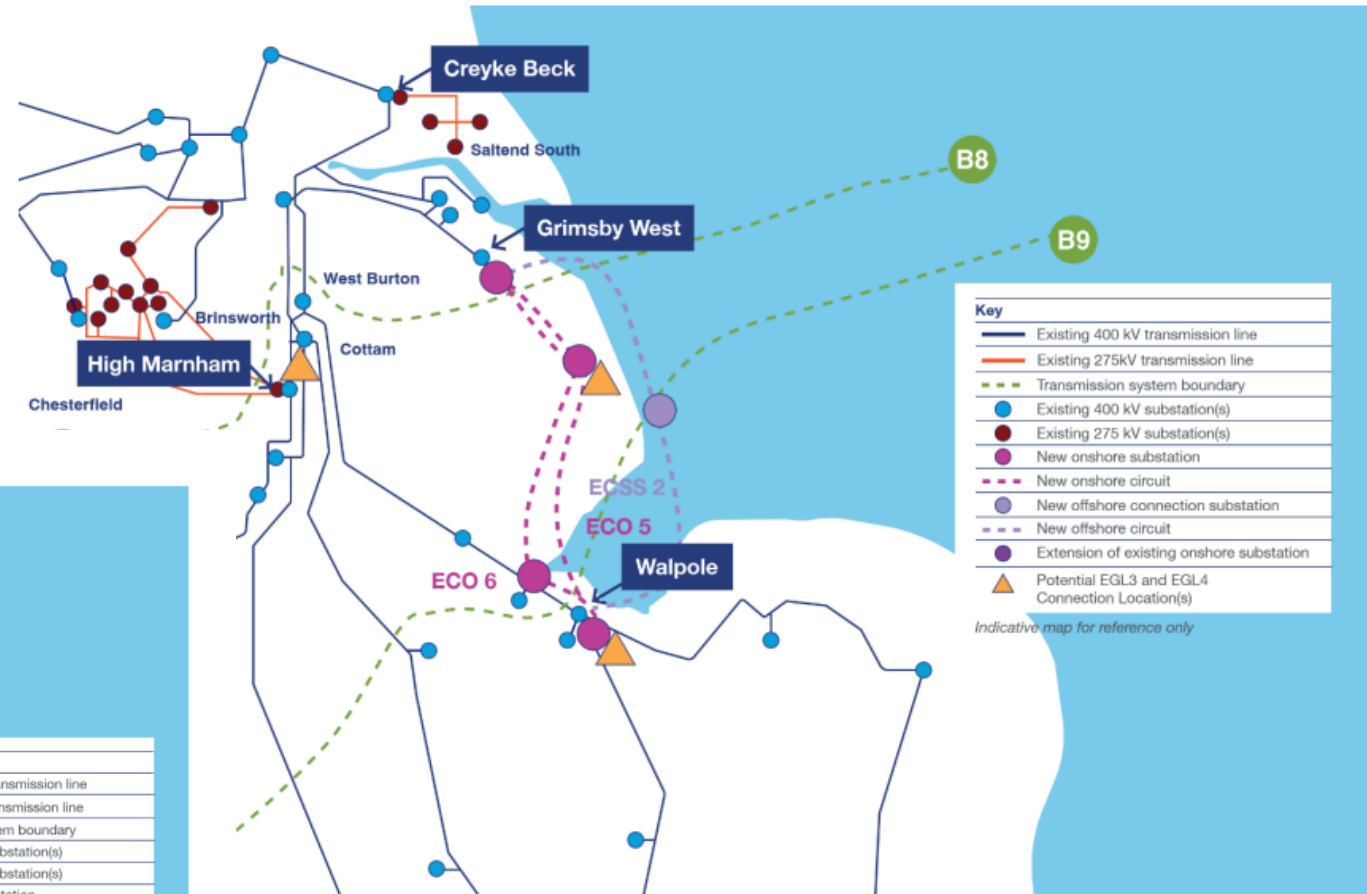


Figure 6.2 – Indicative map of strategic options considered to resolve issue (b)



- Issue (b), a circuit is required to provide capacity to the East Coast generation group whilst increasing the boundary capacity across B8 by an additional >6 GW (giving 12 GW capacity) and providing >6 GW of capacity across the B9 boundary.

# Supporters of a coordinated offshore grid

- **National Grid ESO in 2020**, £6bn UK saving. Coordinated grid for East of England saves £2bn.
- **Integrated Offshore Transmission Project (IOTP) in 2015**: £5.6 billion cost-saving. *“In no circumstance does the radial-connection design offer economic advantage, even when coupled with an £870m onshore reinforcement package.”* No technical barriers to an offshore transmission network. Integrated Offshore Transmission Project (IOTP) in 2015
- **Offshore Future Transmission Network System (OFTNS) report 2011**: Cost savings of £3.5 billion from an integrated solution.
- *“This coordinated approach is likely to provide the highest degree of consumer, environmental, and community benefits.”* **Government, in its Draft National Policy Statement EN-1**
- Recommendation that the UK develops a strategy to coordinate interconnectors and offshore networks for wind farms and their connections to the onshore network. **The Climate Change Committee’s Sixth Carbon Budget, 2020**
- *“As offshore wind continues to grow, more coordination is needed.”* Daniel De Wijze, Policy Analyst at **Renewable UK** in a blog, 2021
- *“Recommendation 1.4. Develop an offshore ring main for offshore wind farms.”* **1922 Backbench Committee on Business, Energy, and Industrial Strategy**, January 2023

# ...more supporters of an offshore grid

- **Integrated Offshore Transmission Project (IOTP) in 2015:** £5.6 billion cost-saving. *“In no circumstance does the radial-connection design offer*
- **Ben Wilson the President of National Grid Ventures, 2022:** *“Connecting wind farms to multiple markets simultaneously is a game changer for energy infrastructure and brings us one step closer to realising the enormous green energy potential of the North Sea. Not only can we deploy every spare electron where it is needed most, we can help to reduce the impact of infrastructure on coastal communities. We now need the right political, legal and regulatory framework to make it happen and establish a mutually beneficial North Sea grid to deliver a cleaner, fairer, more secure and more affordable energy future for British and European consumers”.* Press release for LionLink\*
- **Lord Deben, ex, Chairman of the Committee on Climate Change, 2022:** *“Will she also accept that we ought to have a ring main so that we can bring the offshore wind onshore, and not put vast quantities of pylons across some of the most beautiful countryside in Britain?”* Hansard - North Sea Oil and Gas Producers: Investment Allowances, Volume 822: debated on Tuesday 7 June 2022
- **Dieter Helm\*\*, the Professor of Economic Policy at the University of Oxford and Fellow in Economics at New College, Oxford, 2023:** *“There needs to be an offshore grid, interconnected fully with the onshore grid, including Hinkley and Sizewell new nuclear connections”.*

• \*<https://www.gov.uk/government/news/worlds-largest-of-its-kind-power-line-to-deliver-clean-power-to-18m-uk-homes-and-boost-energy-security>

• \*\*<https://dieterhelm.co.uk/publications/net-zero-electricity-the-uk-2035-target/>



# Fact check

Myth	Busted!
National Grid is required to build pylons	<ul style="list-style-type: none"><li>• <b>National Policy Statements say: <u>starting point</u>.</b></li><li>• <b>Sea Link / Scotland offshore</b></li></ul>
It is more expensive to go offshore	<ul style="list-style-type: none"><li>• <b>Not if you coordinate! £2bn cheaper to coordinate off the East of England</b></li></ul>
Pylons are green	<ul style="list-style-type: none"><li>• <b>Habitats destroyed</b></li><li>• <b>ESNP bird strikes report</b></li><li>• <b>Access roads, concrete bases</b></li></ul>
Sub-sea not technically possible	<ul style="list-style-type: none"><li>• <b>NG ESO 2020 ‘no showstoppers’;</b></li><li>• <b>Lion Link multi-purpose interconnector*;</b></li><li>• <b>Sea Link</b></li><li>• <b>New MPI legislation forthcoming</b></li></ul>
Contracts make a grid impossible	<ul style="list-style-type: none"><li>• <b>Not true: ESNP legal opinion May 2023</b></li></ul>

## Scenario 11: Sea Link offshore island (NF, 5E, Nautilus & Eurolink connect to Sea Link at offshore island)

Areas	Output	RAG Status
Contracts and Offer process	<ul style="list-style-type: none"> <li>Minimal changes required</li> <li>Bespoke clauses required for bilateral agreements reflecting arrangements</li> </ul>	
Charging	<ul style="list-style-type: none"> <li>Assume principles remain the same and funded through the existing needs case, needs some level of consultation</li> </ul>	
User commitment	<ul style="list-style-type: none"> <li>Able to accommodate under existing arrangements</li> </ul>	
Technical obligations and compliance	<ul style="list-style-type: none"> <li>Potentially multiple material challenges to be considered e.g. reduced system capability through Sea Link (5.1GW injection onto 2GW Sea Link), generator connection through HVDC untested, risk of loss of infeed</li> <li>New technology and need for new requirements</li> </ul>	
System operability	<ul style="list-style-type: none"> <li>Reduction of options for network management as a result of the reduced system capability through Sea Link</li> <li>Potentially novel / complex control system required (Four/Five ended HVDC)</li> <li>Fault ride through and inertia / Grid Forming at the Interface Point</li> </ul>	
Codes and Standards	<ul style="list-style-type: none"> <li>Loss of infeed in progress</li> </ul>	

# Where is the power going?

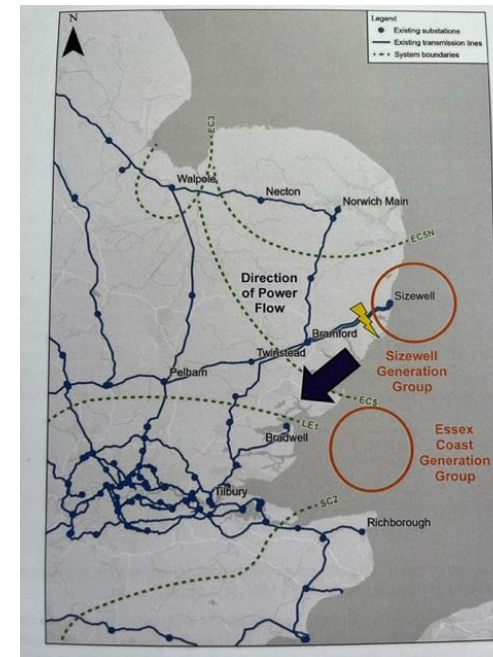
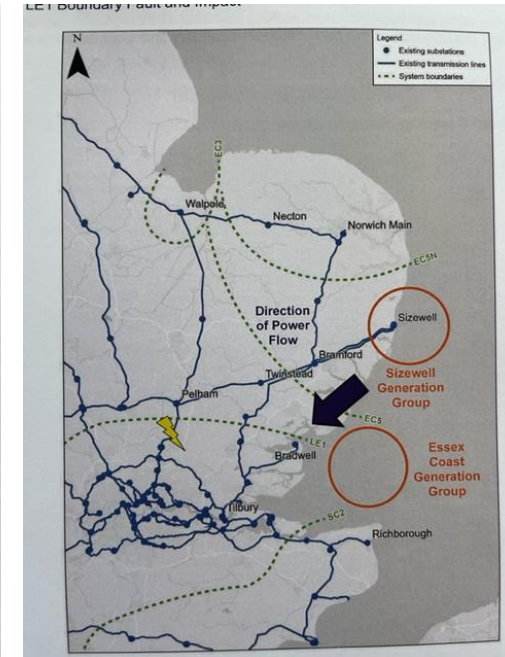
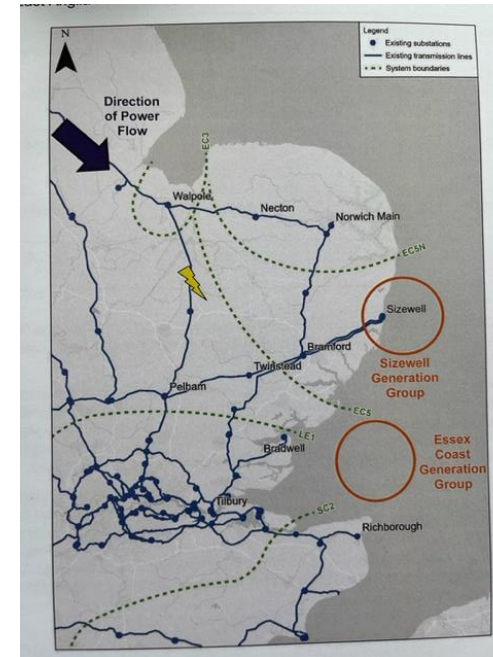
Only 8% of peak energy generated in our region is used in our region.

(Source: National Grid ET's most recent consultation documentation)

Power transfer to London & SE England is a problem.

(Source: Electricity Ten Year Statement 2021)

Look at NG's most recent maps: power from our region travels SOUTH, not WEST.



An integrated offshore grid continues to remain the best solution. Power generated offshore – keep it offshore.

