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## National Grid Interconnectors

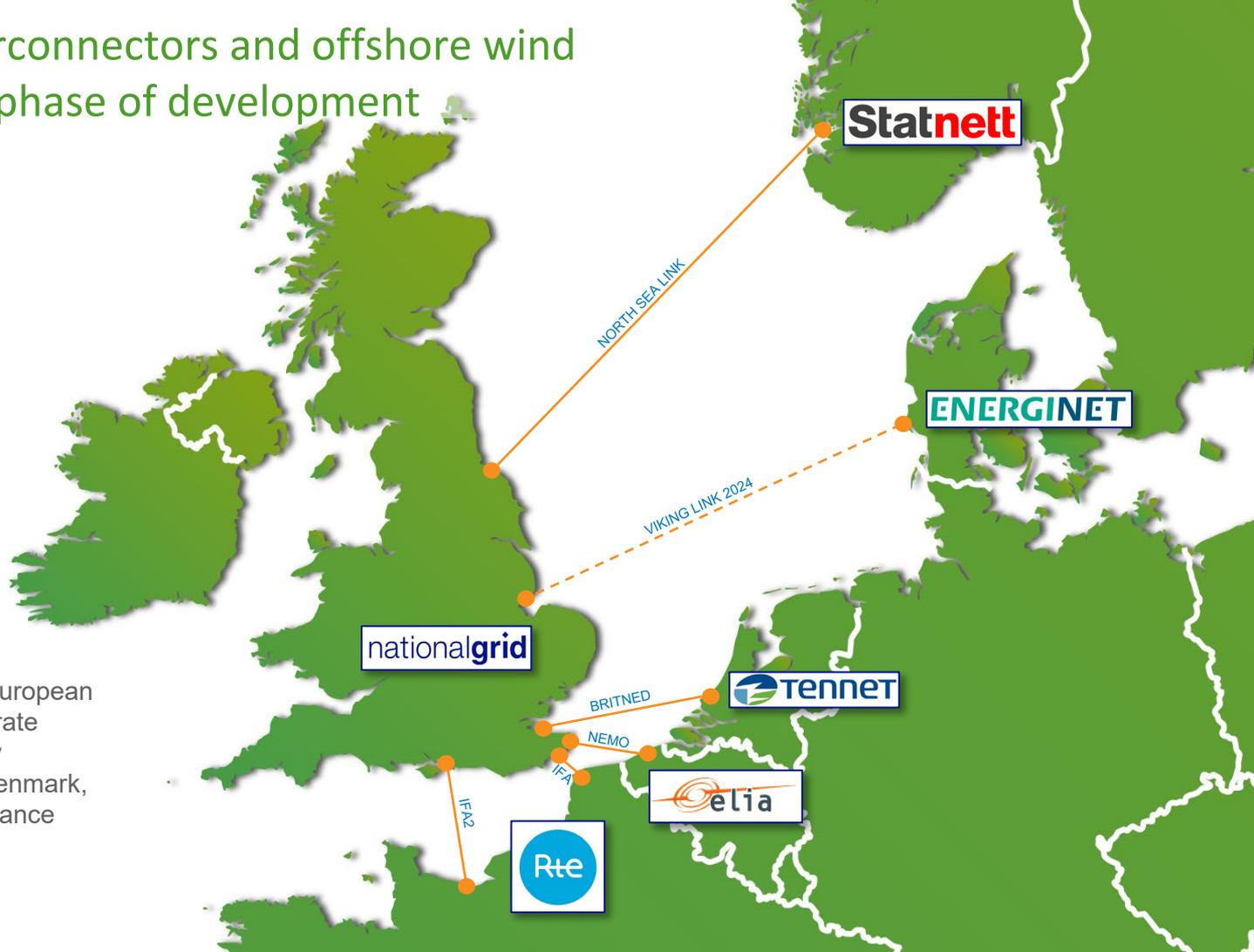
- **Chris Smith**
- Head of Interconnector Asset Strategy & Innovation
- National Grid Ventures

Point-to-point interconnectors and offshore wind represent the first phase of development

# 8GW

By 2024 National Grid and our European partners will jointly own and operate ~8GW of interconnector capacity connecting the UK to Norway, Denmark, the Netherlands, Belgium and France

National Grid



# 1 Viking Link

<b>UK to Denmark</b>	Viking Link will connect Bicker Fen in England and Revsing in Denmark. Go live in January 2024
<b>762 km</b>	Subsea cable will be 635km in length
<b>NGIH &amp; Energinet</b>	Developed in cooperation between National Grid Interconnector Holdings (NGIH) and Energinet, the Danish Transmission System Operator (TSO)
<b>1.4 GW</b>	Viking will have a capacity of 1.4 GW operating at +/- 525kV
<b>EPC</b>	Prysmian and NKT: cable manufacture of Mass Impregnated cable Siemens: VSC Bi-pole Converter





# ARCHAEOLOGY



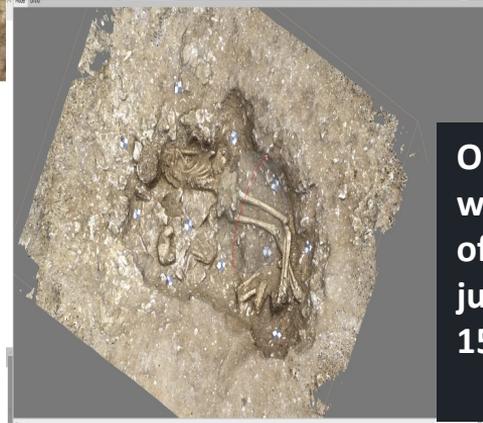
Grave from Roman period



Bracelet



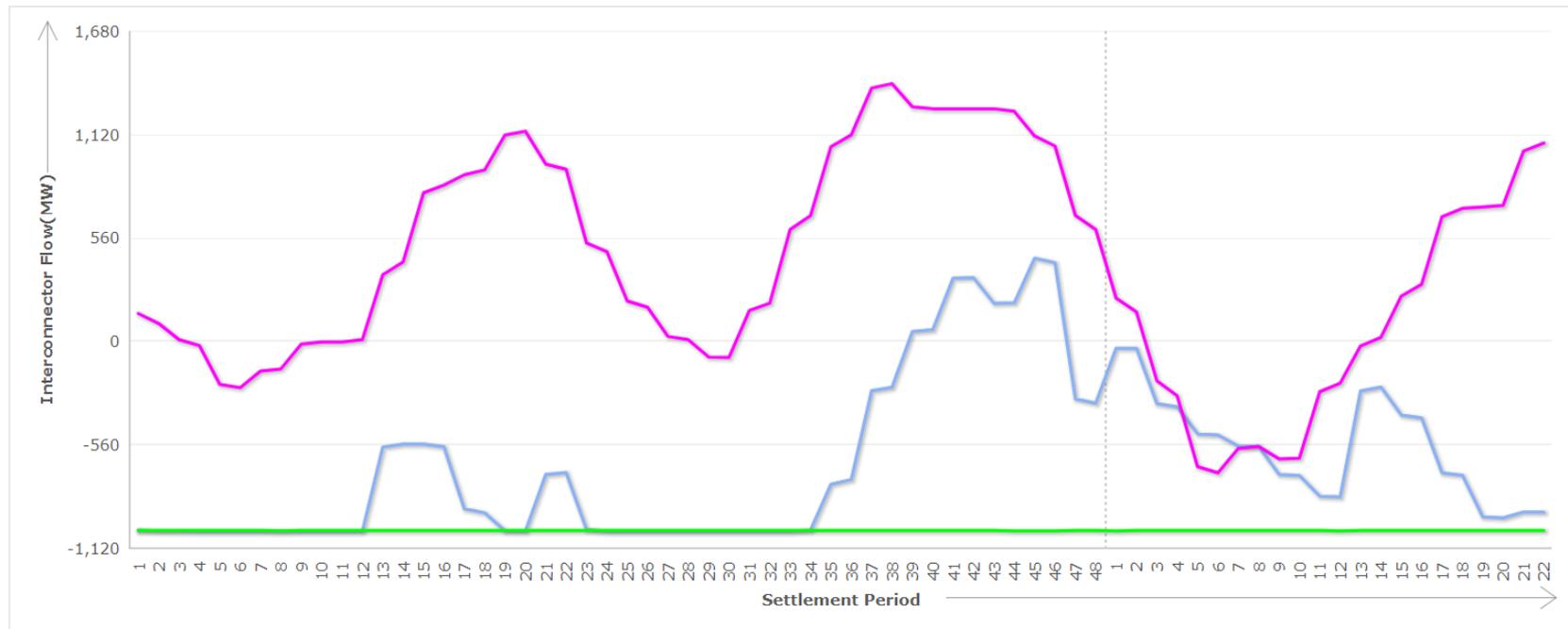
Pagan Roman Burial Ground



One of ten graves with the remains of a female and a juvenile (circa 1500 to 200BC)

2 MPI's

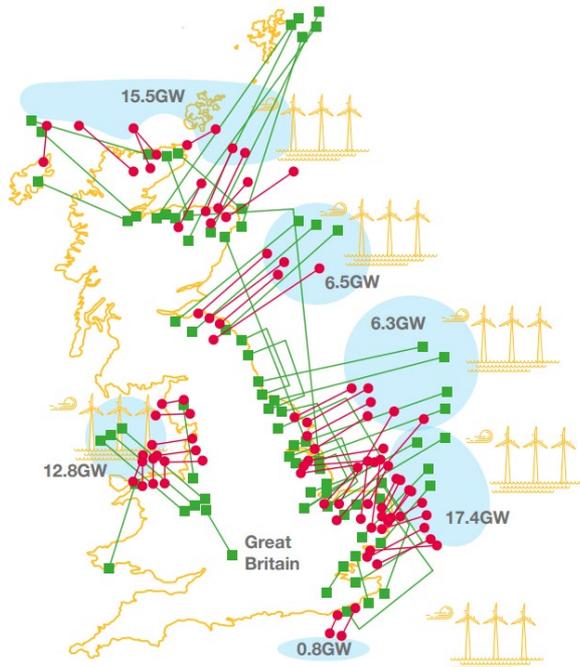
Data referring to : 2022-06-20, 2022-06-21 (Positive Implies Flow to GB)



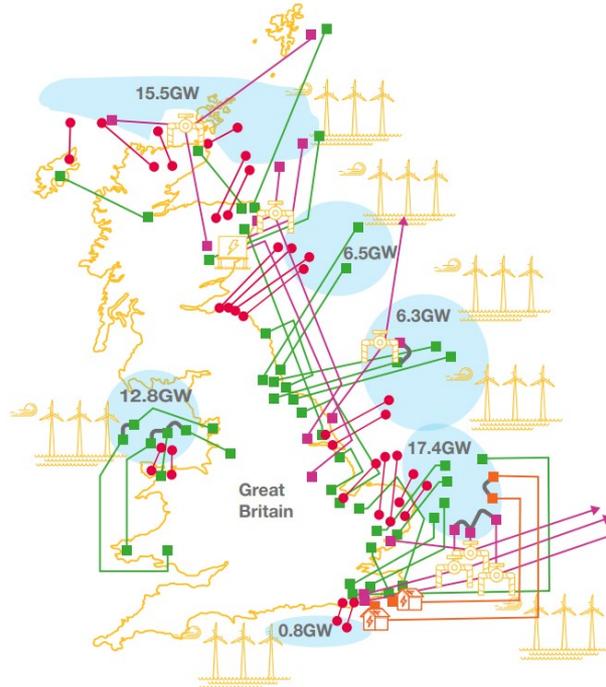
- INTFR
- INTIRL
- INTNED
- INTEW
- INTNEM
- INTELEC
- INTIFA2
- INTNSL

# Coordination including MPIs offers a **cost-effective and environmentally friendly approach to achieve North Sea offshore wind targets**

## CURRENT APPROACH



## INTEGRATED APPROACH



## BENEFITS\*

**Landing points**

105 to 30

**Onshore & offshore cable**

11,585km  
to 6735km

**HVDC substations**

57 to 20

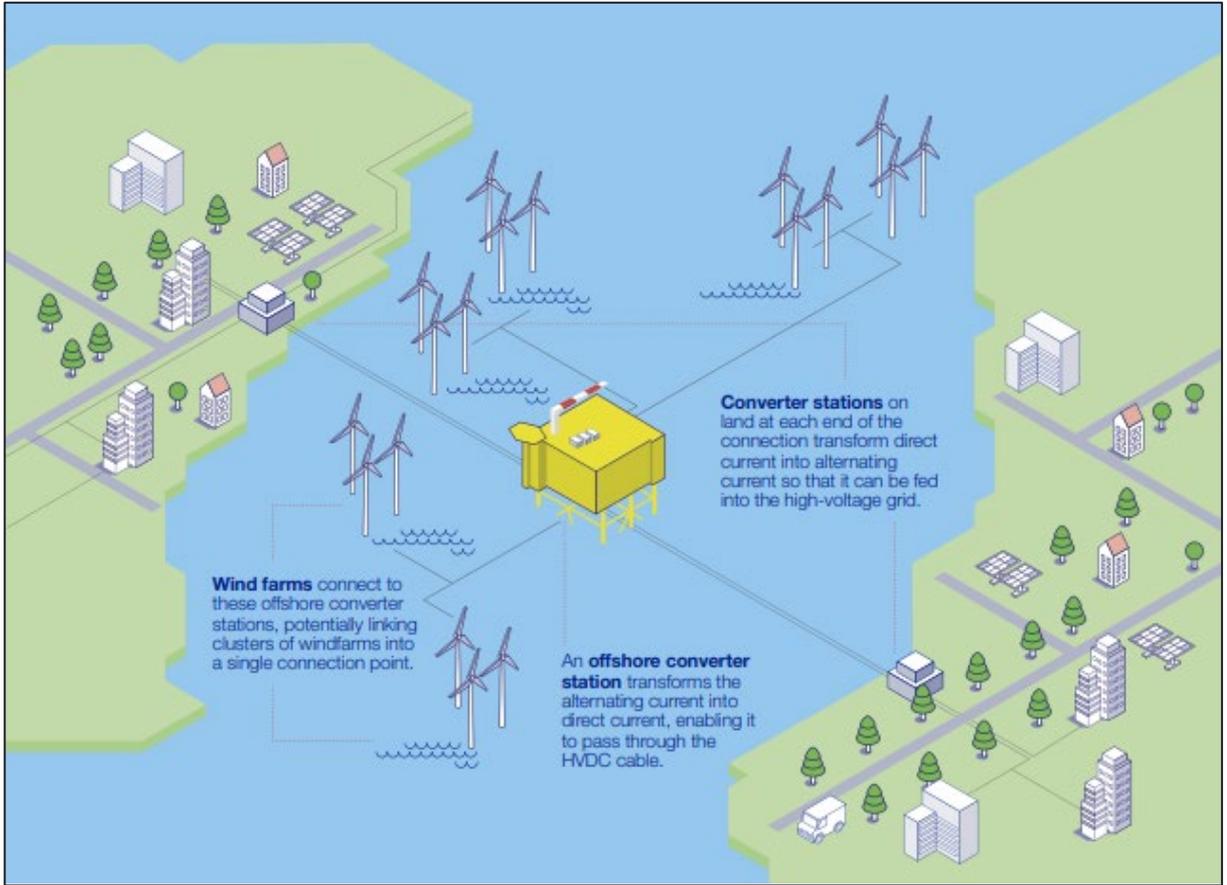
# We are working with our European partners to deliver MPI's pre 2030



We have grid connection agreements for 6.4GW to access target markets pre 2030

We are exploring MPI's to multiple Countries including Belgium and the Netherlands

In September 2020 we announced a partnership with TenneT to connect up to 4GW of offshore wind with interconnectors to GB and NL



## MPIs could deliver significant consumer value vs point-to-point connections for GB & EU consumers

Using NGV's 6.4GW of grid connection agreements as MPIs enables the connection of up to 12.8GW of offshore wind in the North Sea and could deliver significant benefits to consumers:

**21mt**

additional carbon  
emissions savings

Equivalent to 4.6 m  
cars driven for 1 year

**£3.1bn**

net socio-economic  
welfare benefit

From coordination  
between offshore wind  
& interconnectors

**>50%**

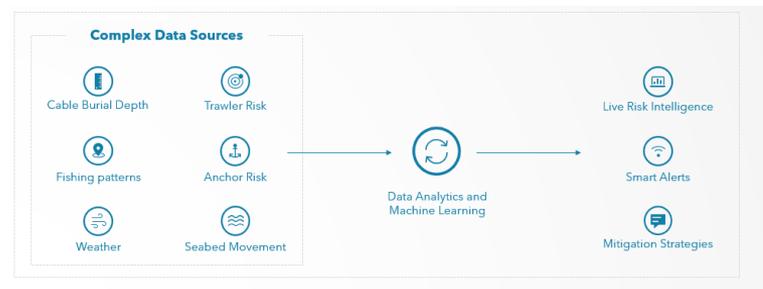
reduction in landfalls &  
DC converters

From 18 GB & EU  
landfalls down to 8

# 3 Innovation

## Areas of Innovation

- Data Acquisition
  - Robotic inspections
  - Drones Onshore Cable route inspections
- Data Analytics
  - Use of AI to identify offshore cable risk
  - Advanced data analytics for Asset Health
- External threats
  - Cyber
  - Drone disabling technology
- New Projects
  - Construction optimisation
  - Carbon Intensity reduction



# 4 Health Hub

## Why

- Men in the UK 3 times more likely to commit suicide than women
- In the construction industry men more than 3 times more likely to commit suicide than the national average for men
- 2 people in UK construction die by suicide every day

# What

- Health hub open 24/7
- Gym – including onsite fitness instructor
- Canteen facilities – including free daily healthy food offering
- Quiet/wellbeing room – including access to IT facilities
- Lounge area – including TV, books & games
- Multi-faith room
- Outside green space – including gardening area
- Information & support on mental health & wellbeing issues – Lighthouse Club company supporter
- Monthly team challenges, campaigns & promotional events

Managing Director of Interconnectors for National Grid, Nicola Medalova, said: “This is an issue that all of us in the construction sector have a responsibility to address. The research shows that something has to change. That’s why we’re looking for representatives from across the sector including small to medium-sized enterprise, large businesses, contractors, and clients, who are passionate about mental health, to be part of the solution. We understand that collaboration and coordination across key stakeholders in the industry will be critical to tackling the mental health crisis in construction. So, whether you are getting started, in development, or leading the way on mental health issues within the sector, we call for your support and ask for you to join us in being an agent for change.”



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