ASIA CLEAN ENERGY FORUM 2025

Empowering the Future: Clean Energy Innovations, Regional Cooperation and Integration, and Financing Solutions

2–6 June | ADB Headquarters, Manila

ADB

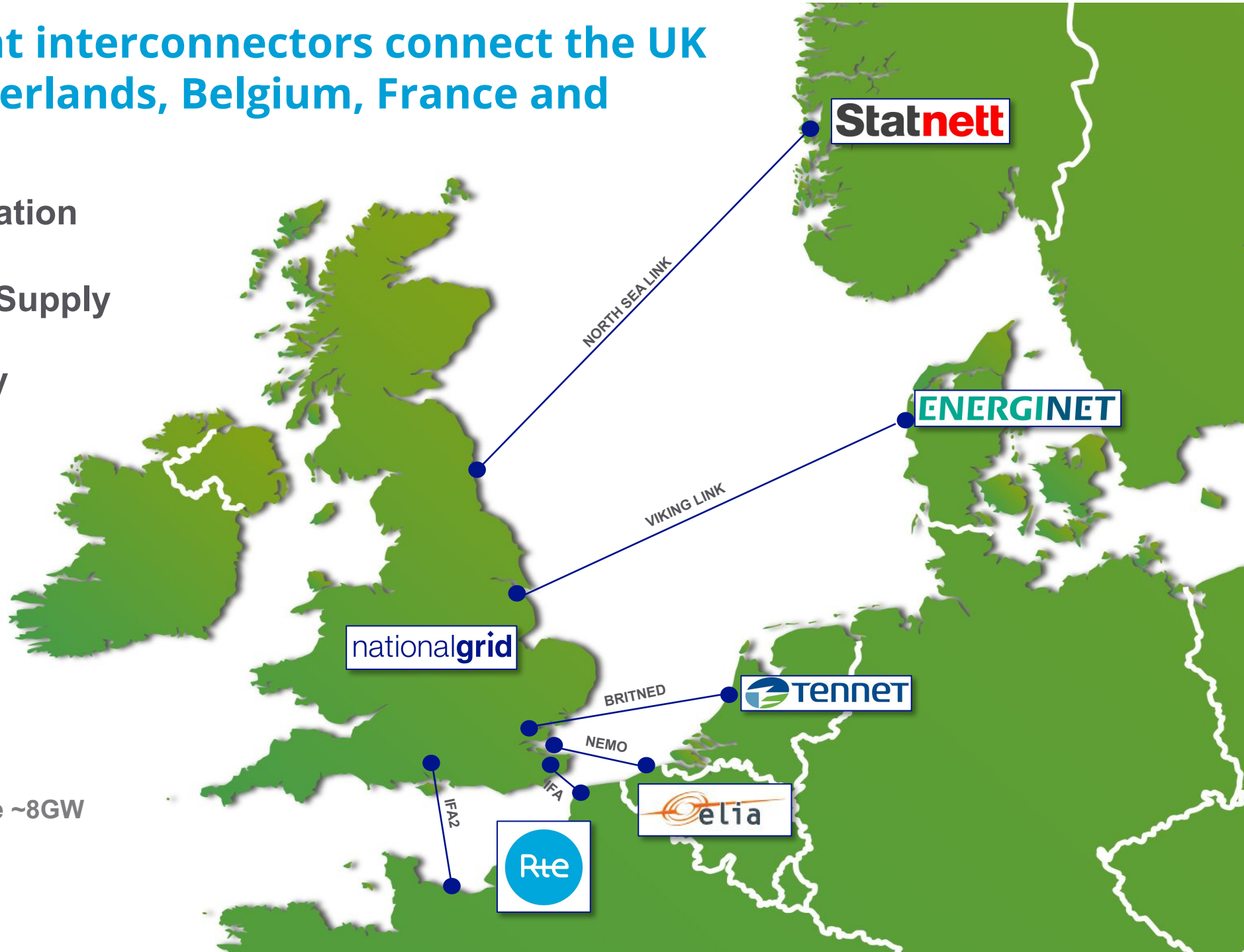
Rob Rome

Commercial, Customer & Regulation Director
National Grid (UK)

Unlocking the potential of regional connectivity through technological solutions such as subsea cable and HVDC

Our six point-to-point interconnectors connect the UK to Norway, the Netherlands, Belgium, France and Denmark

- Decarbonisation
- Security of Supply
- Affordability



8GW

National Grid and our European partners jointly own and operate ~8GW of interconnector capacity

Interconnectors strengthen security of supply by providing flexible and reliable access to large volumes of electricity

Rob Rome • You
Director of Commercial, Customer & Regulation
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Interconnectors' response to yesterday's Capacity Market notice reflects their importance as the single largest source of flexibility on the network. Our fleet shifted the direction of their flows, contributing 5.2GW of power at a critical time for the network. Taking a closer look at what happened:

💰 Strong prices in north-west Europe at the day-ahead stage saw a mix of imports and exports on GB's interconnectors

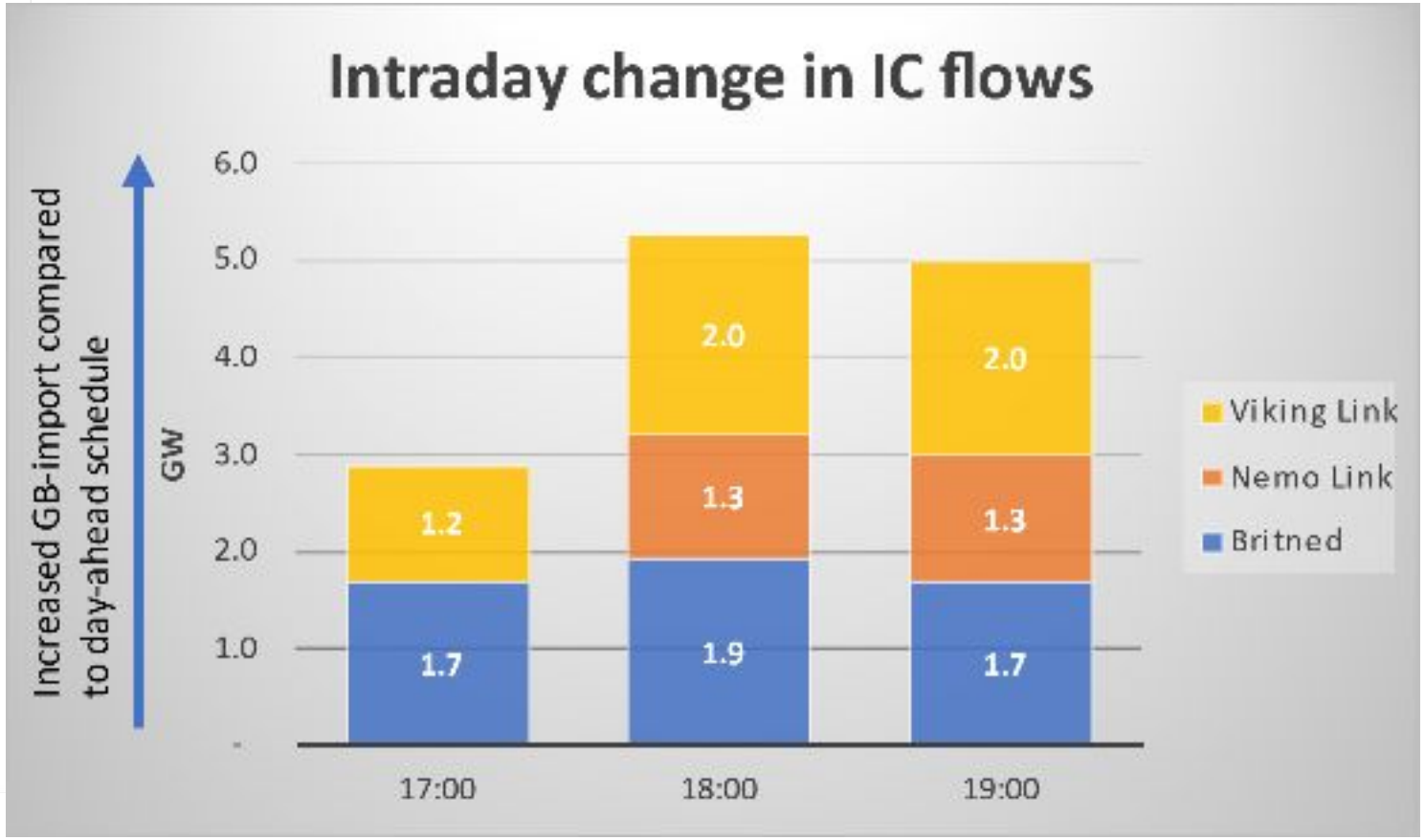
⚡ Whilst IFA was already scheduled by our customers to import, some exports were originally scheduled on our BritNed, Nemo Link and Viking Link interconnectors

🔄 As circumstances changed on the system, these links responded with a swing – flowing towards GB. This provided up to 5.2GW at a critical period.

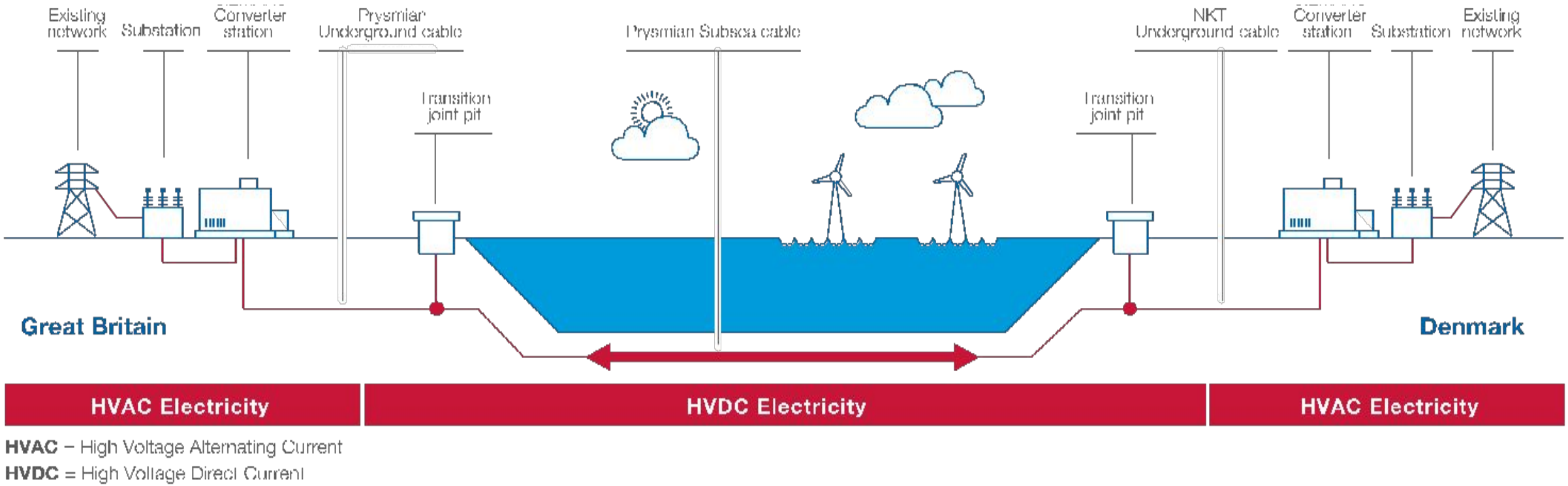
👍 This was achieved through a combination of NESO-initiated trades and our customers responding to within-day markets. The intraday flexibility offered by our interconnectors was key to making sure that the GB market was balanced most cost-effectively.

This reinforces how vital interconnectors and the flexibility they provide are, allowing the system to adapt to changing market conditions, providing secure supplies at least cost to the consumer.

"Close cooperation between European system operators through reciprocal support has played an important role in helping maintain secure supplies for customers in Great Britain and Europe."
UK Electricity System Operator, 2023.



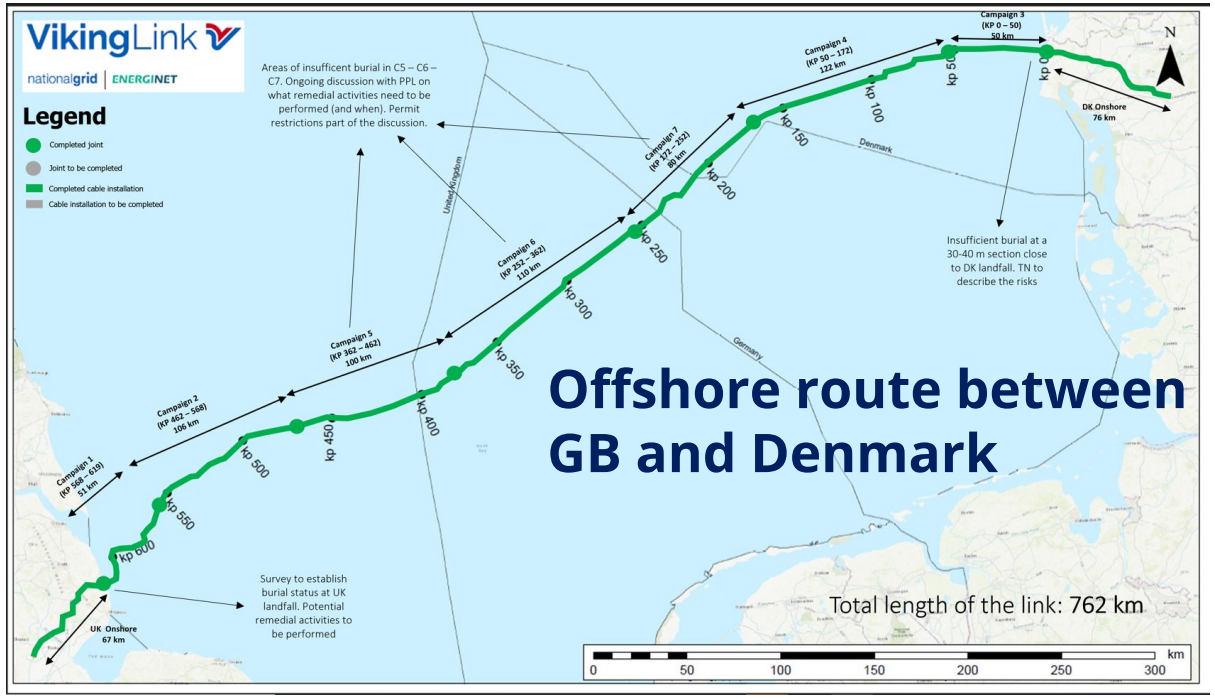
Viking Link Interconnector – technical setup



HVAC – High Voltage Alternating Current
HVDC = High Voltage Direct Current

The link uses **Direct Current (DC) to transmit power**, then converts it back to Alternating Current (AC) before it goes into the onshore network

Viking Interconnector - longest land and subsea cable in the world



Offshore route between GB and Denmark

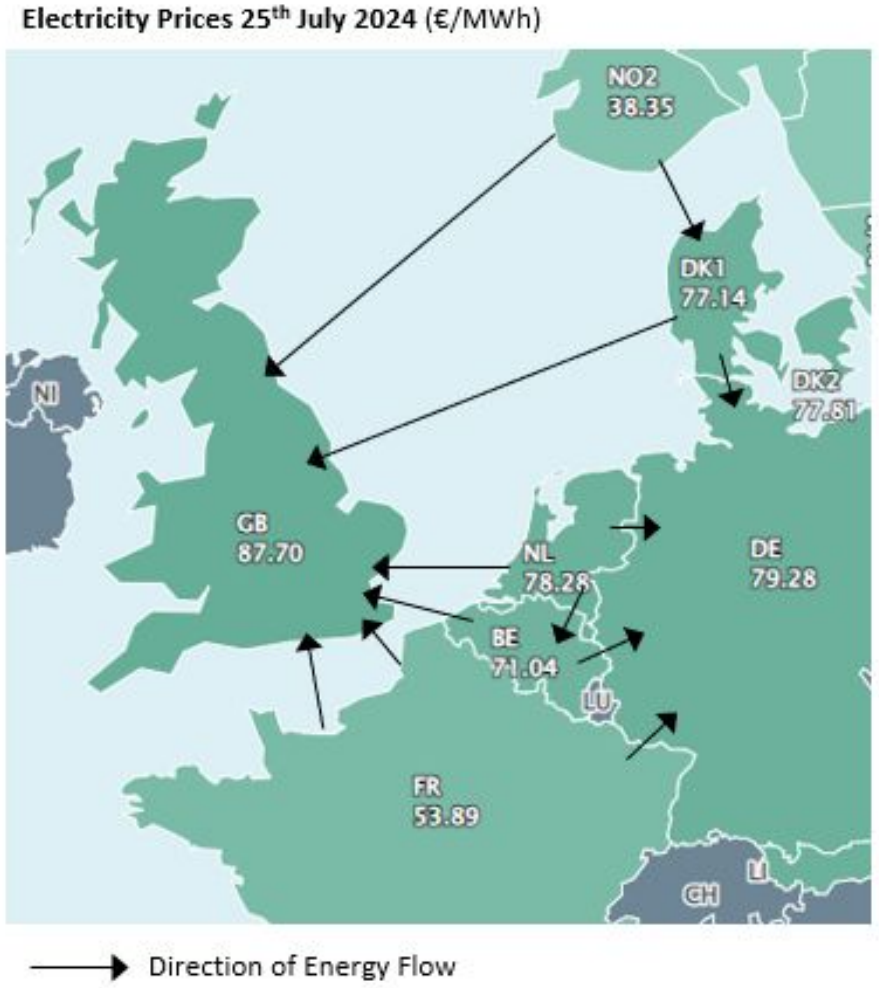
Onshore route within GB

HVDC Cabling

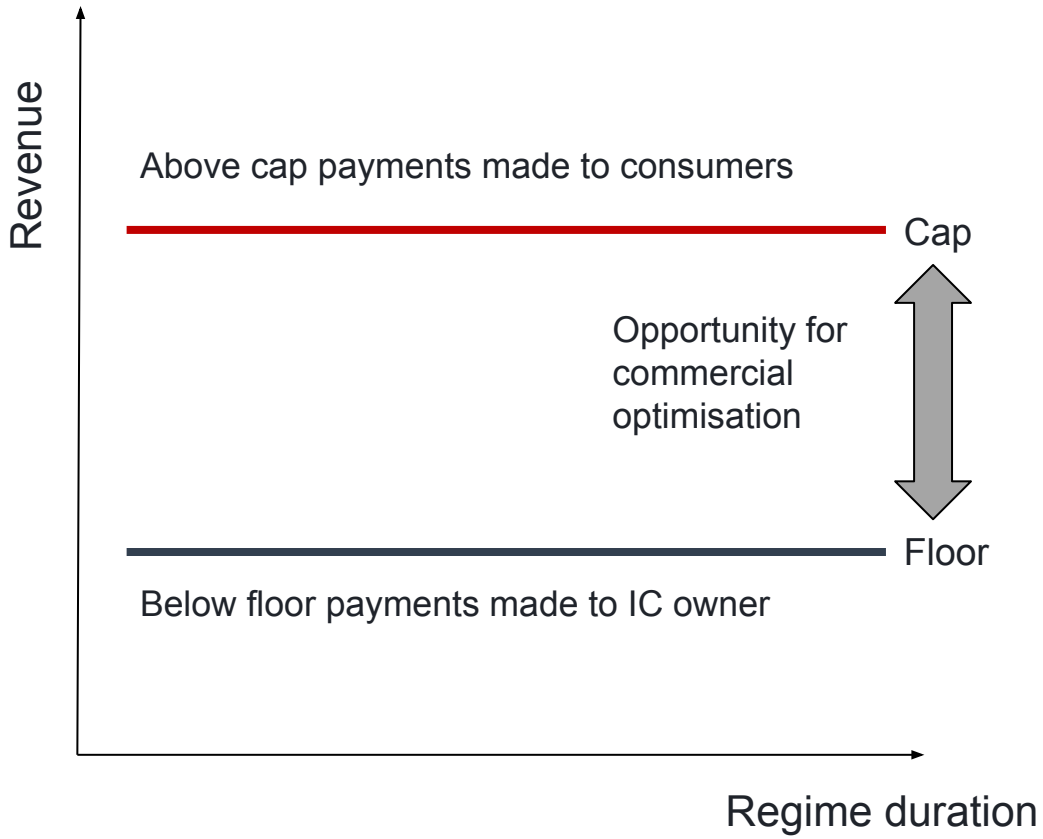
ACDC Convertor Station in GB

How to monetise Interconnectors – capacity auctions

- The **right to flow** power over the interconnector is sold to customers in advance through products called **capacity rights**
- Capacity rights are **sold in different timescales**, from years in advance to the day of delivery
- Capacity rights are bought by many different companies who look for **opportunities to benefit from the price difference** between the markets we connect
- The **price of capacity rights is established via auctions** to ensure it is sold in an open and transparent way



How to regulate Interconnectors - Cap and Floor regime



- Viking Link is regulated under **Ofgem's 'cap and floor' regime**
- Societal benefits of electricity interconnection are clear, so the GB regulator introduced the regime as **the regulated route for project delivery**
- If total revenue exceeds the 'cap', the excess revenue is paid to consumers.
- If revenues are below the 'floor', consumers pay the deficit
- This provides security for developers and **encourages private investment into interconnectors, while preventing excessive returns**

Our future Offshore Hybrid Asset (OHA) interconnectors will enable offshore wind

IFA IFA2 Interconnexion France-Angleterre

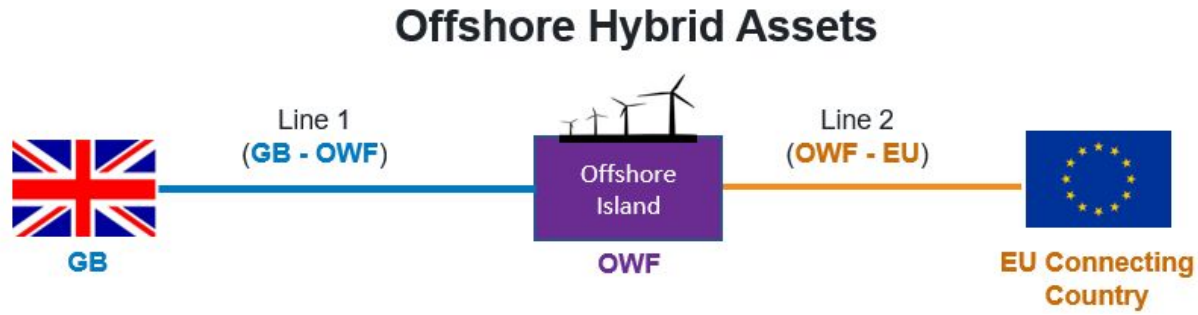
Nemo Link

BritNed

VikingLink nationalgrid | ENERGINET

NorthSeaLink Statnett nationalgrid

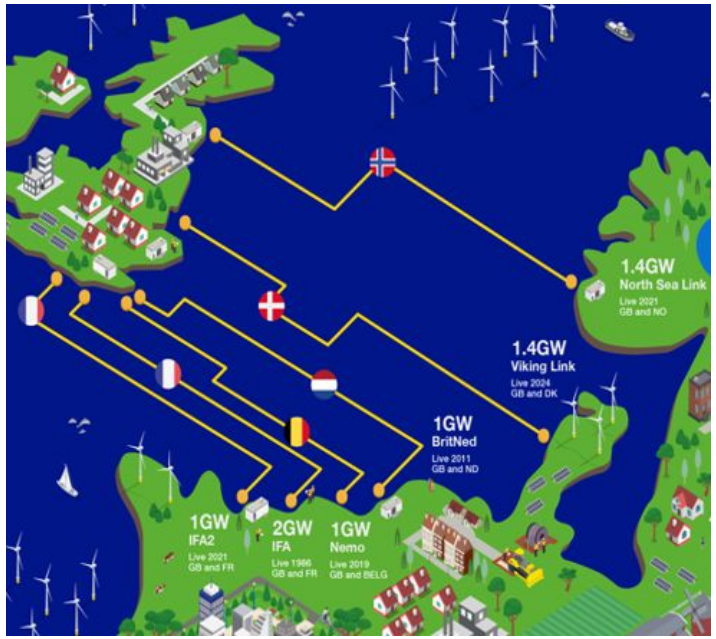
Offshore Hybrid Assets (OHA) are a new asset class of interconnectors - allowing clusters of offshore wind farms and interconnectors to connect out at Sea.



A Connected North Sea through Offshore Wind

Regulating OHAs well will enable the North Sea's potential

From radial P2P and offshore wind today



To meshed offshore grids by 2050

Summary

- **Interconnectors** contribute to all three aspects of the energy trilemma.

- They strengthen **security of supply** of electricity
- They allow consumers to have access to **cheaper electricity** and prevent excessive profits through the Cap & Floor mechanism
- They complement **renewable energy**, enabling it to be imported and exported between countries

- **Offshore Hybrid Assets (OHAs)** will contribute further to net zero goals by combining interconnectors and offshore wind farms.
- **UK-EU co-operation** on energy post-Brexit is essential to facilitate the development of complex offshore infrastructure like OHAs.

- National Grid Ventures has three OHA projects in development – **LionLink, Nautilus and Continental.**