

# Green Investment Plan

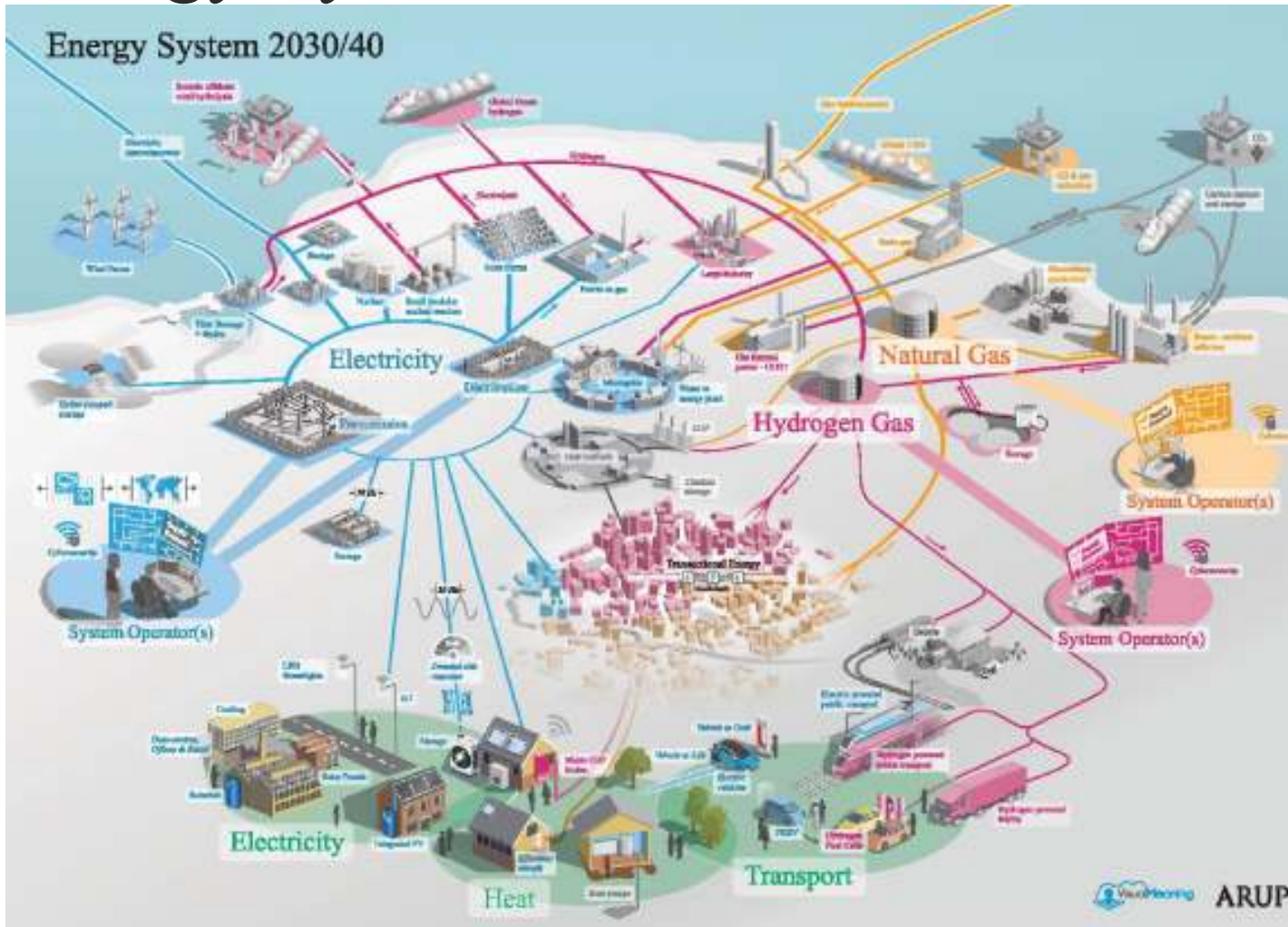
## Renewable Energy Investment Opportunities

**Michael Osborne**

July 2021

# Energy System 2030 - 2040

ARUP

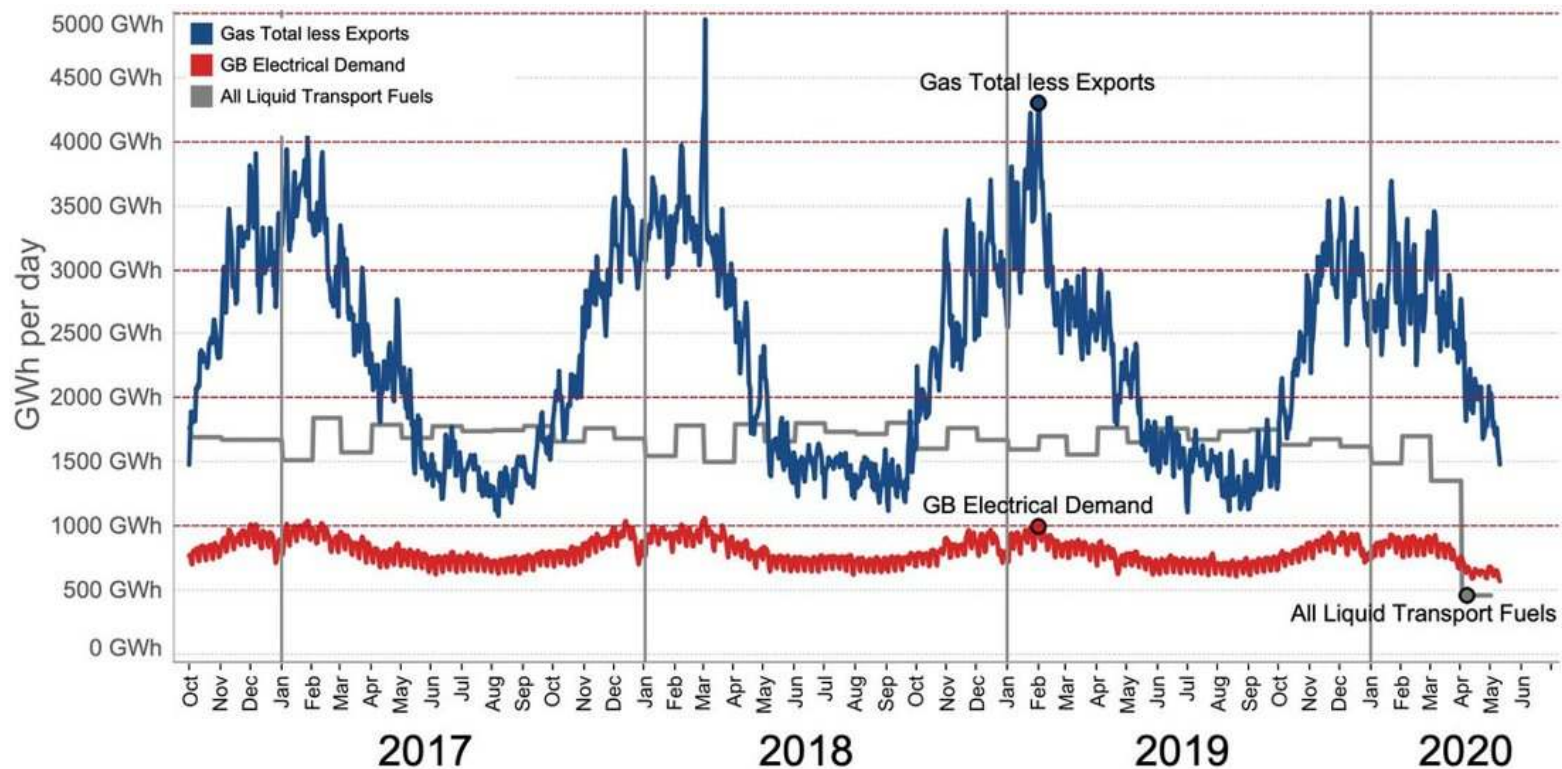


A view of how energy systems could look in 2035:

- Off shore renewables have continued to expand, onshore renewables are more accepted.
- Hydrogen (shown in red) has an increasing role to play including in a repurposed gas network.
- Energy efficiency measures and demand management have led to lowered energy consumption

Report available here:  
<https://www.arup.com/perspectives/publications/research/section/the-future-of-energy-2035>

# Understanding the problem



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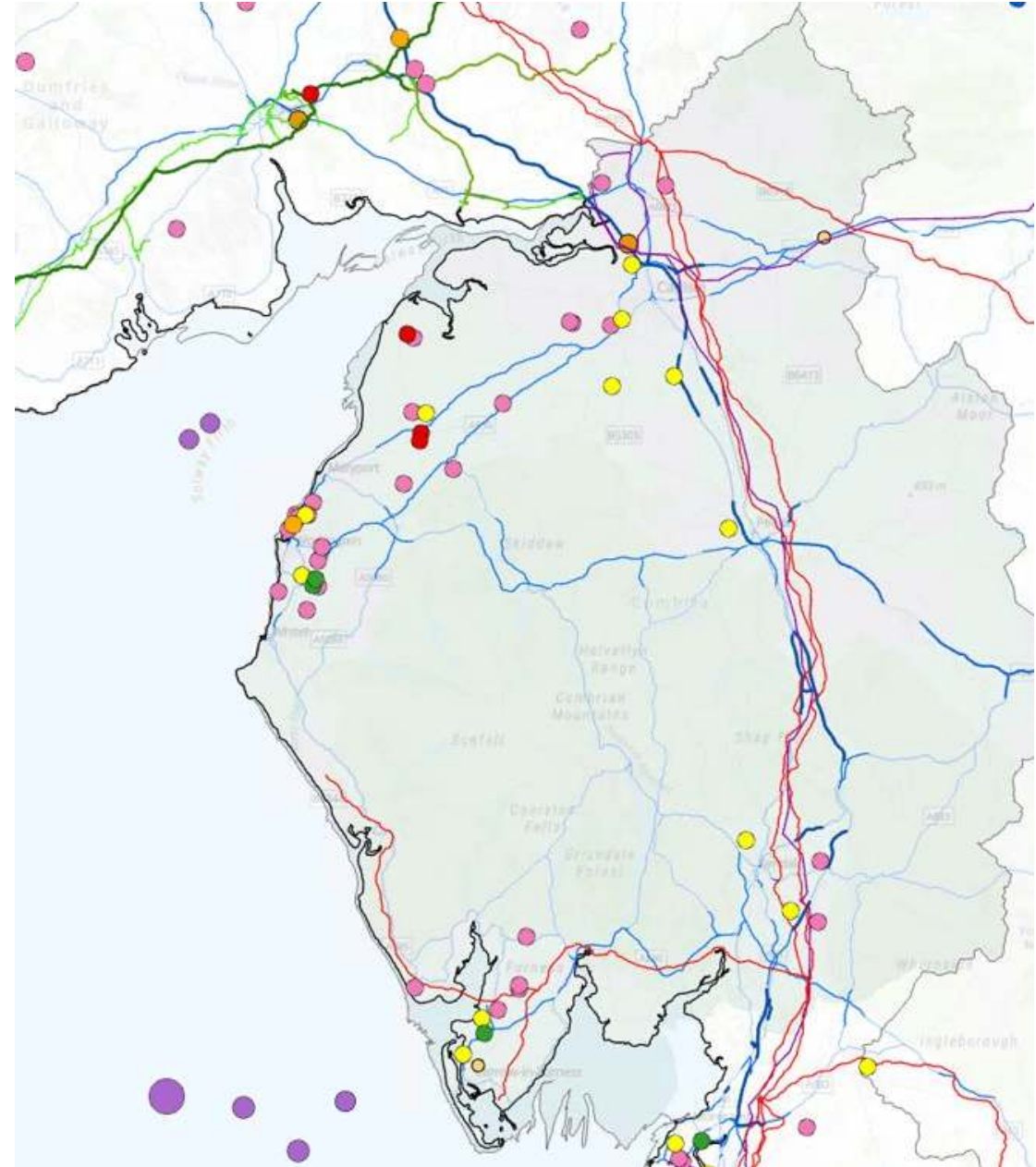


Underlying data are from National Grid, Elexon and BEIS  
Figure created by Dr. Grant Wilson: i.a.g.Wilson@bham.ac.uk

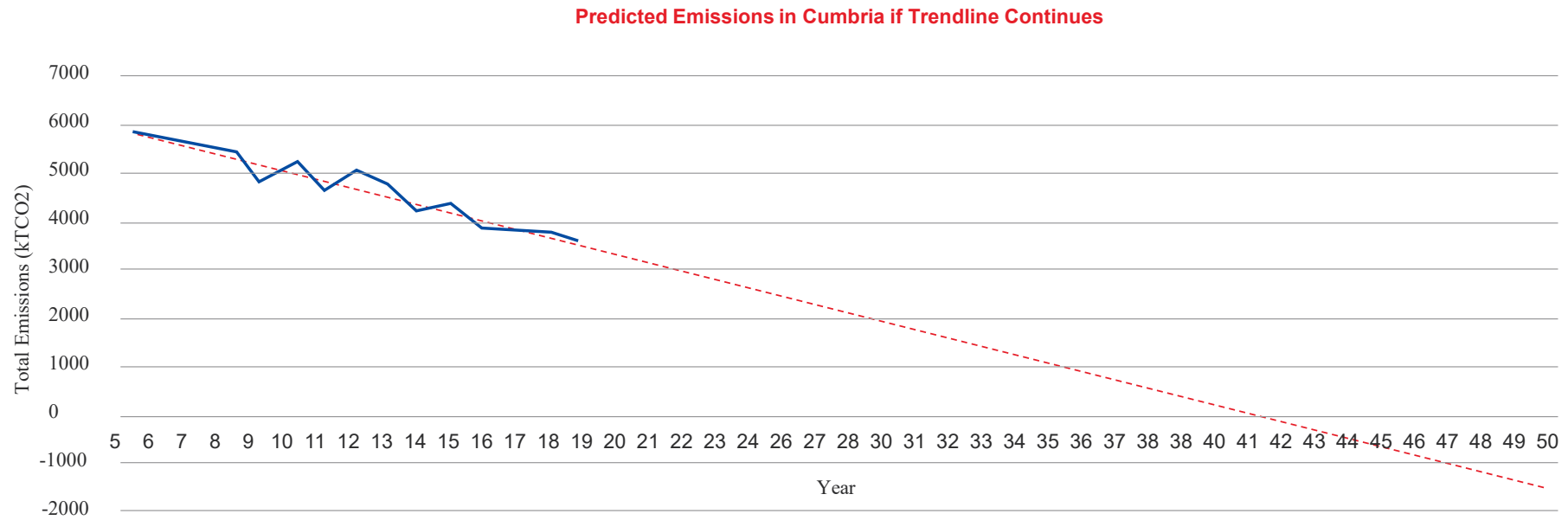
# Understanding assets

Mapping and exploring relationships

- Renewables
- Networks
- Infrastructure
- Emissions

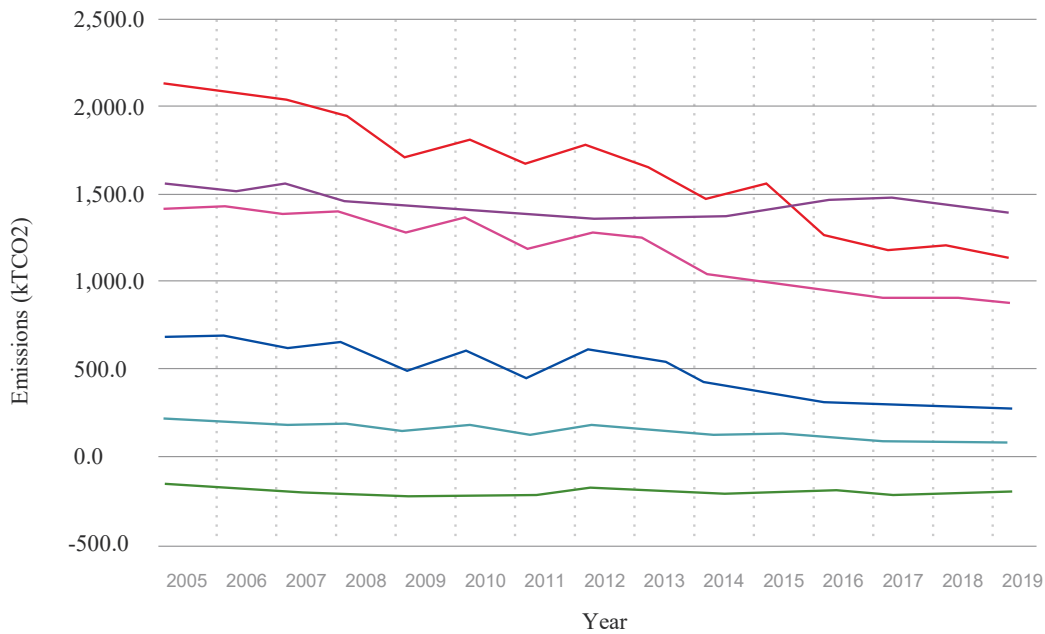


# Understanding the trend

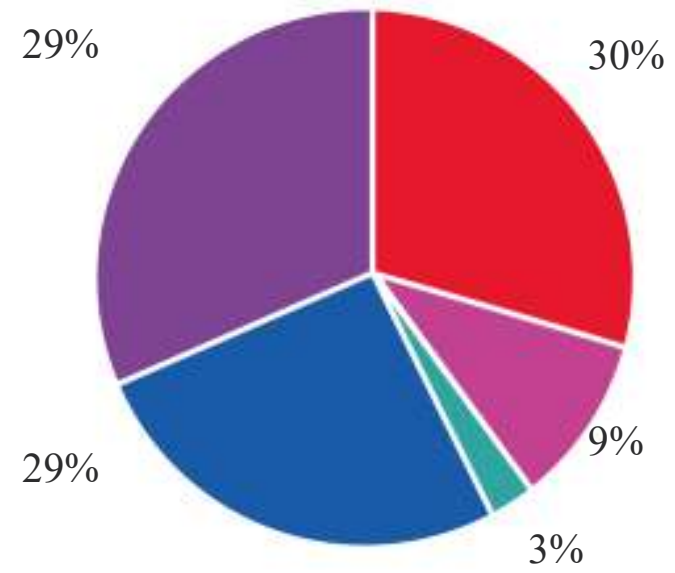




# Understanding where to focus



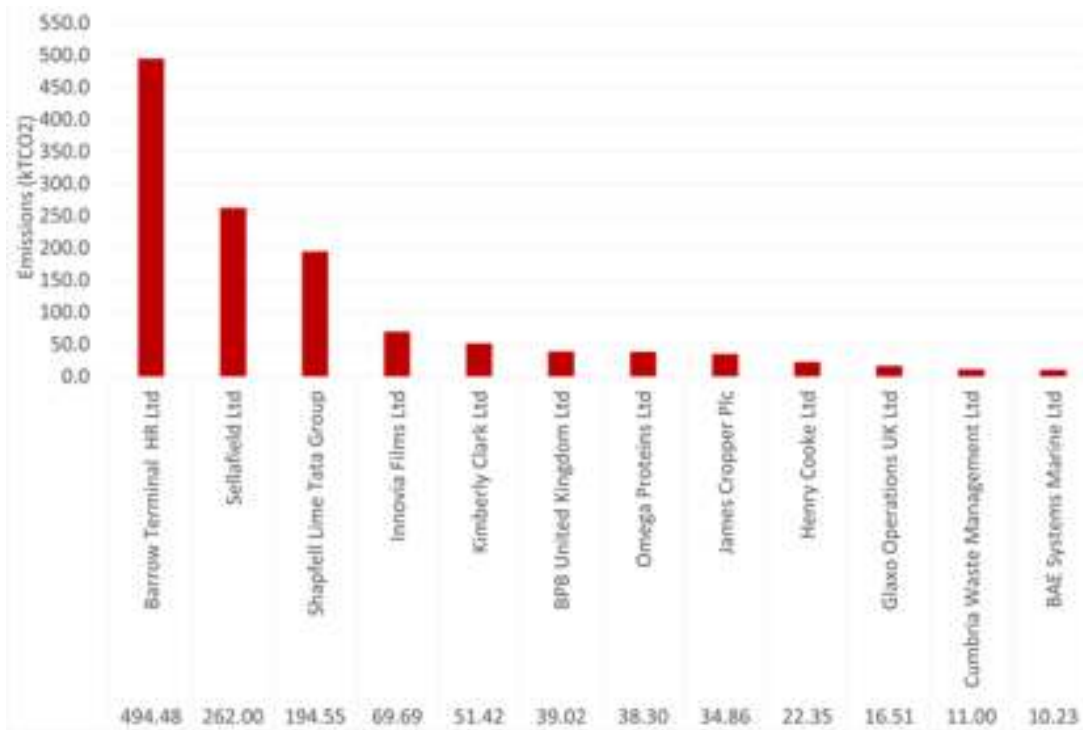
Cumbria's Emission by Sector (2019 BEIS data)



- Industry Total
- LULUCF Net Emissions
- Transport Total
- Domestic Total
- Public Sector Total
- Commercial Total

# Understanding the opportunities

Cumbria's highest point source emitters of Co2 in 2019 (BEIS data)



# Identifying green investment opportunities

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Projects where there is a coalition of the willing, where there is:

- need,
  - leadership, and
  - mechanisms for support
- Renewable energy
  - Grid networks
  - Hydrogen vector
  - Decarbonising industry
  - Decarbonising transport

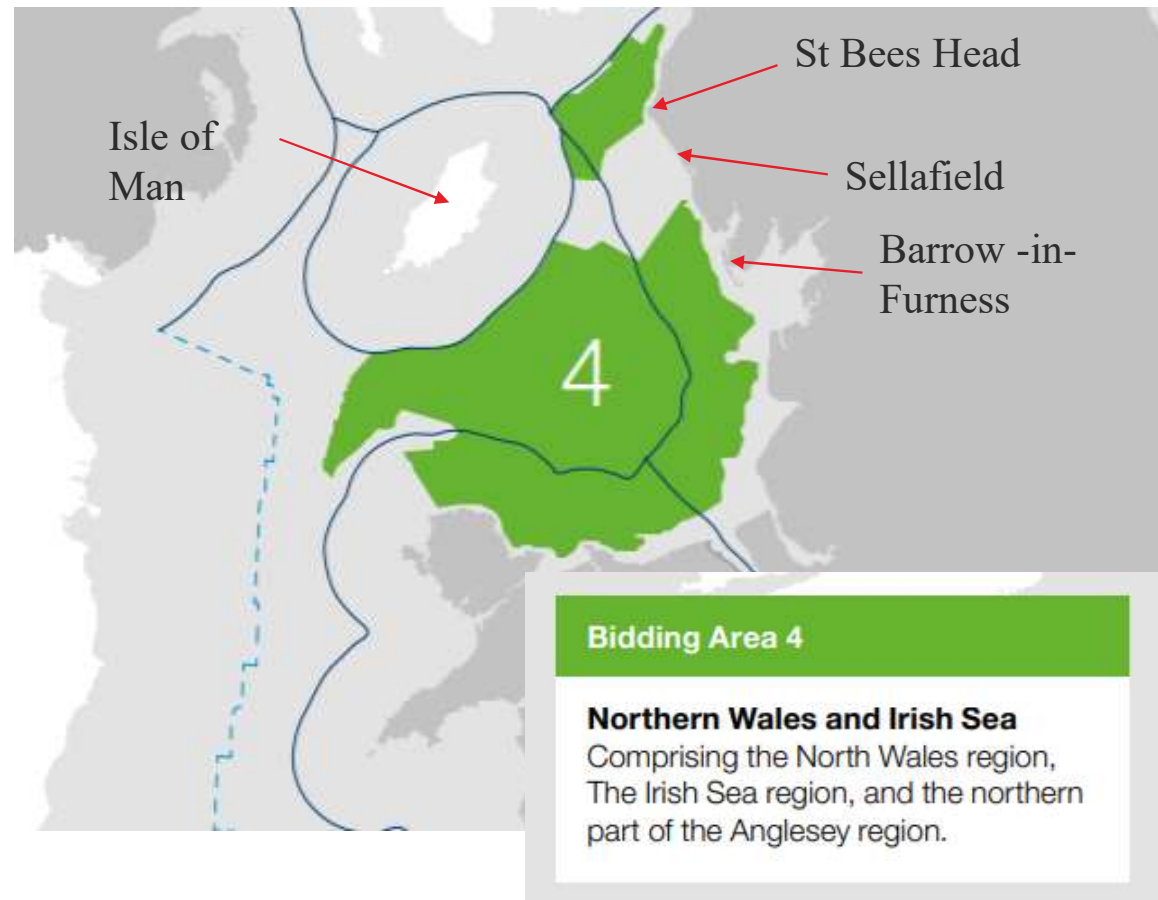


# Offshore wind opportunities

## Crown Estates Leasing Round 4

At least 7 GW, up to a maximum of 8.5GW of new seabed rights are being made available around the UK.

Tenfold increase in offshore wind capacity required for UK to meet net zero.



# Community owned offshore windfarm proposal **ARUP**

## Environmental constraints:

- Potential Special Protection areas (purple)
- Designated Special Protection Areas (yellow)
- Marine Conservation Zones (orange)
- 1.2GW peak output
- Community owned (never done before at scale)
- Visual impact (needs consideration)

How do we make this happen?



# Community influenced transmission system

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North West Coast Connections  
Enabling renewable energy investment

Offshore windfarm drives investment in transmission system which in turn enables other renewables to come forward (wind, solar, tidal)

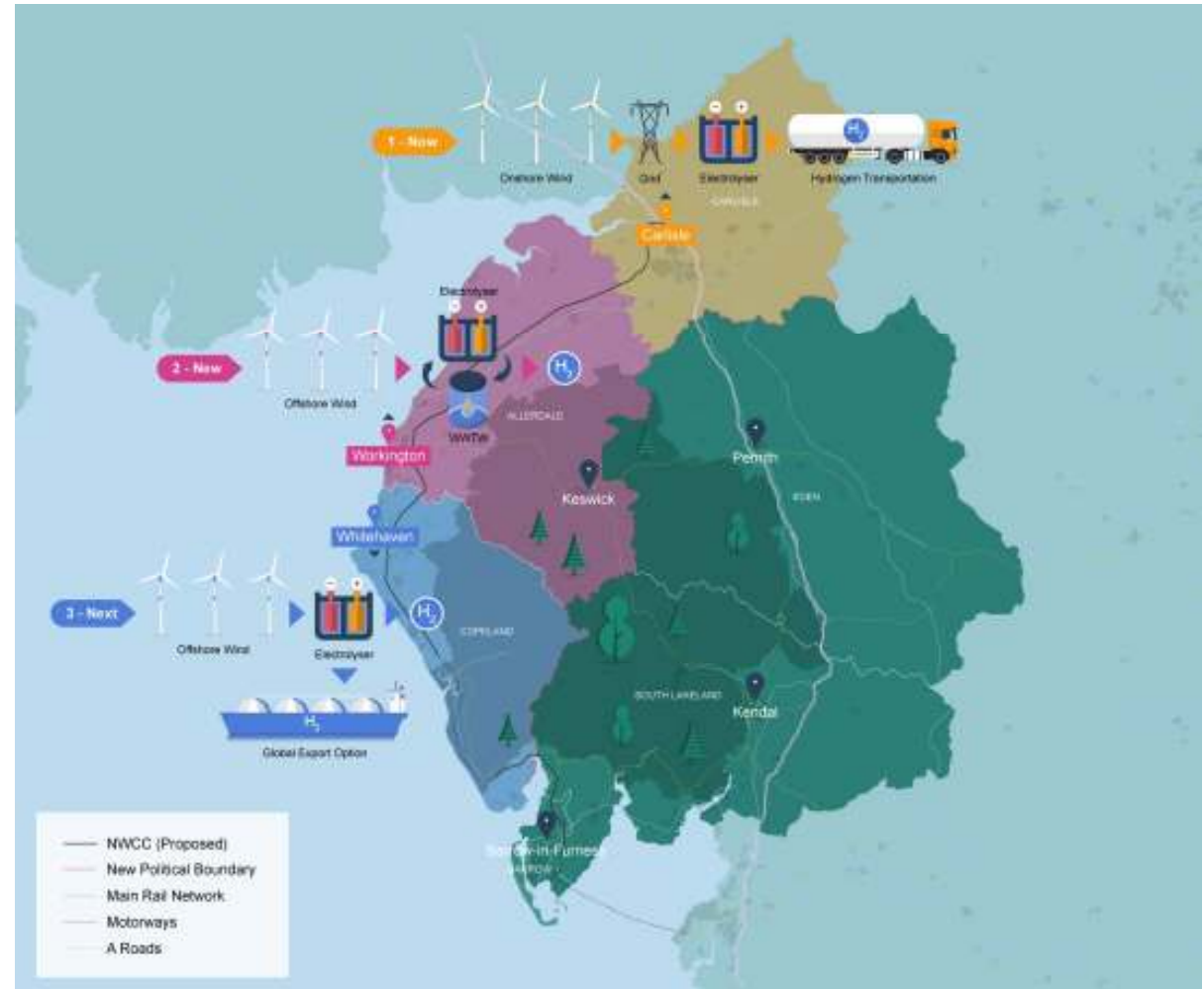


# Cumbria renewable energy system 2030 - 2040

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Renewable energy offshore wind  
Upgraded transmission  
Hydrogen vector storage  
Export opportunities

How does Britains Energy Coast become  
Britains Energy Coast?



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