

Grid Development - Enabling offshore wind

Julian Leslie, Electricity Customer Services Manager



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National Grid

UK and US



Electricity and Gas

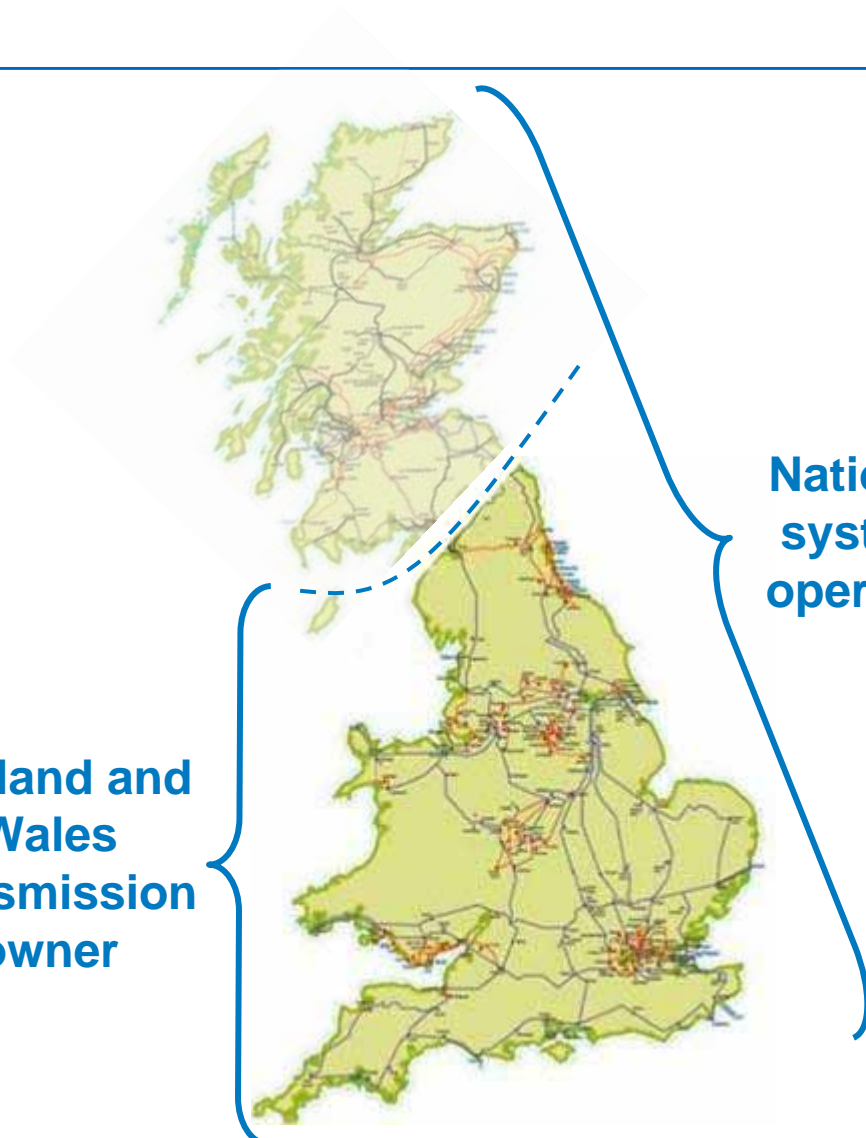


Transmission and Distribution



England and
Wales
transmission
owner

National
system
operator



Offshore wind

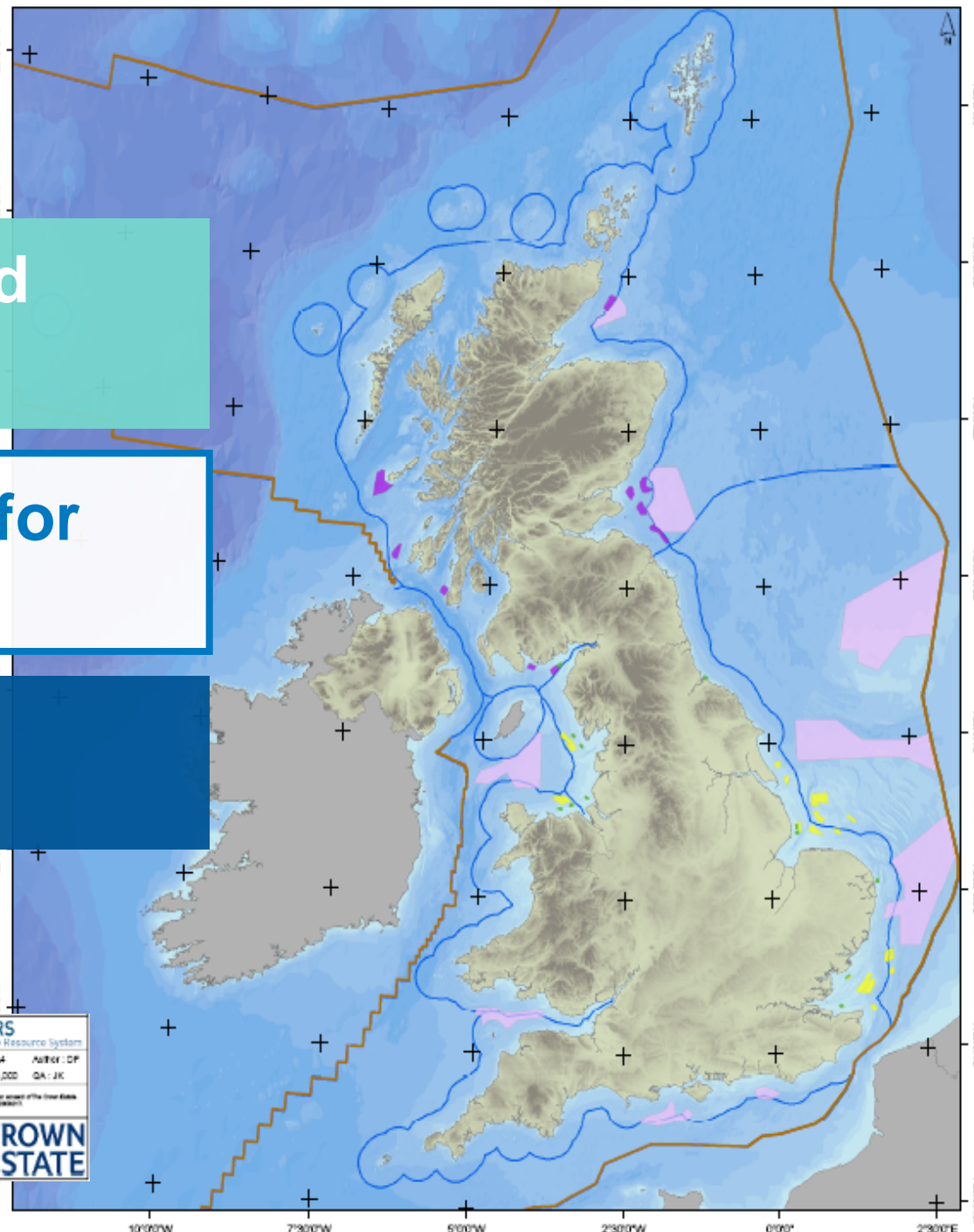
1.5 GW offshore wind connected

10.4 GW contracted for connection

More to do!

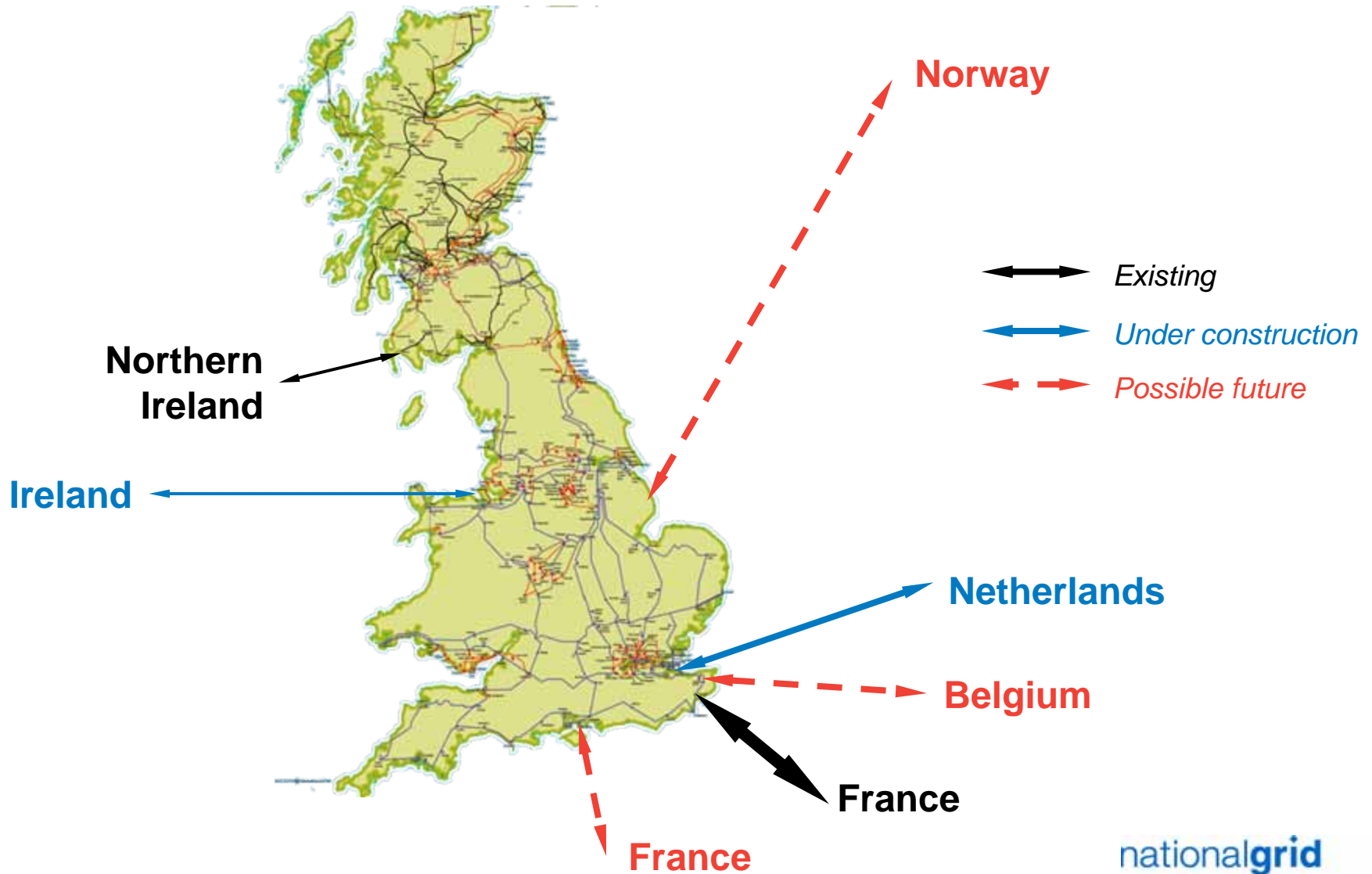


<ul style="list-style-type: none">■ Scottish Exclusivity Award■ Round 1 Wind Farm Lease■ Round 2 Wind Farm Lease■ Round 3 Wind Farm Zone— Territorial Waters Limit— UK Continental Shelf Limit■ Europe	<p>Bathymetry Shallow Deep</p>	<p>Current Offshore Wind Activity - Rounds 1-3 22 March 2010</p> <p>0 60 120 240 km</p> <p>10 New Burlington Place London W1S 3JK Tel: 020 7651 5080</p> <p>© Delta One Edinburgh EH4 6SU Tel: 0131 260 6070</p> <p>www.thecrownestate.co.uk</p>	<p>MaRS Marine Resource System</p> <p>Size: 1M Author: DP 1:6,760,000 QA: JK</p> <p>THE CROWN ESTATE</p>
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* Data as at March 2010

Existing / potential interconnectors



Enablers...

Anticipatory investment

Transmission access

Smarter Grids

Co-ordinated approach

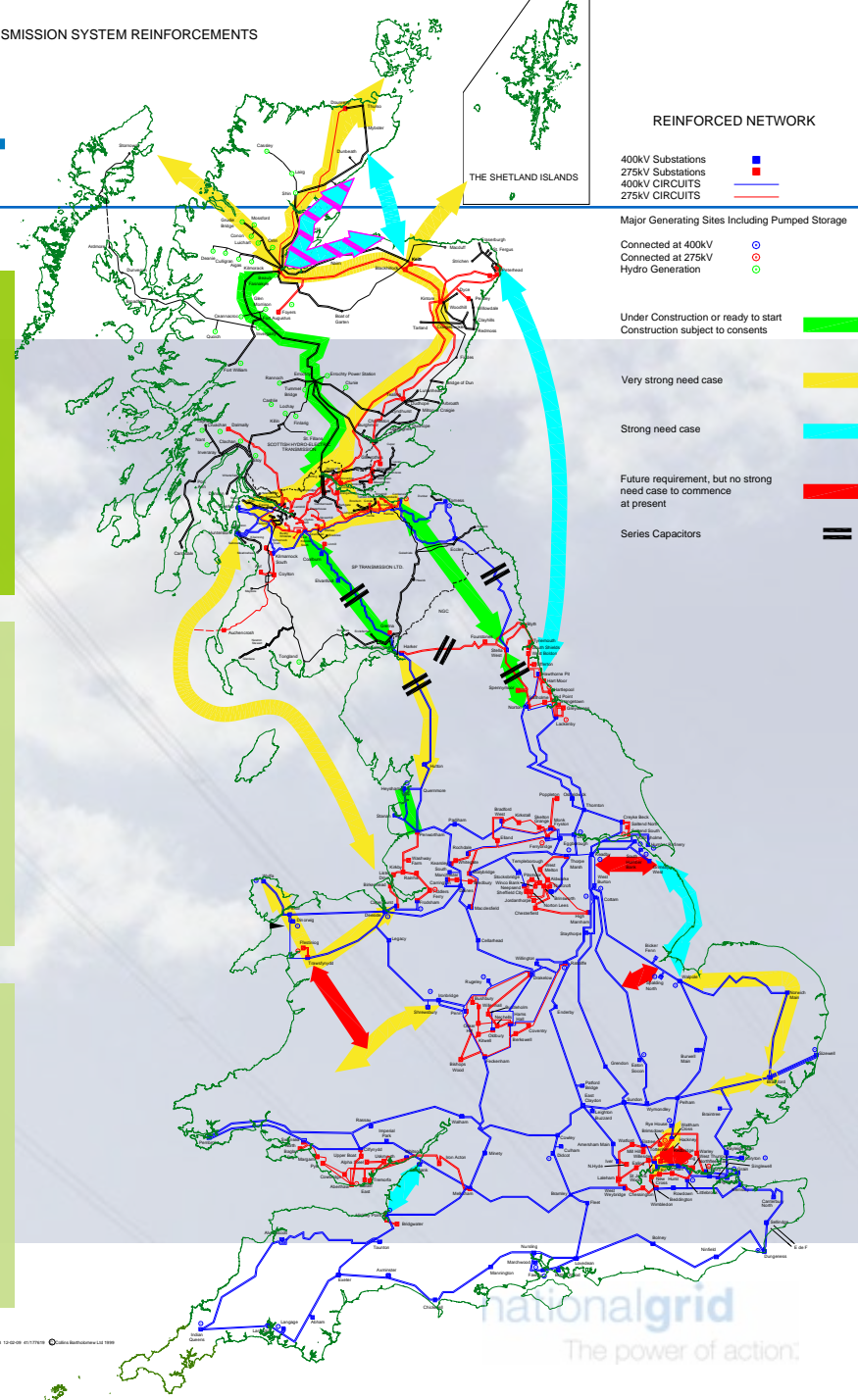


Anticipatory investment...

£4.7bn of proposed reinforcements

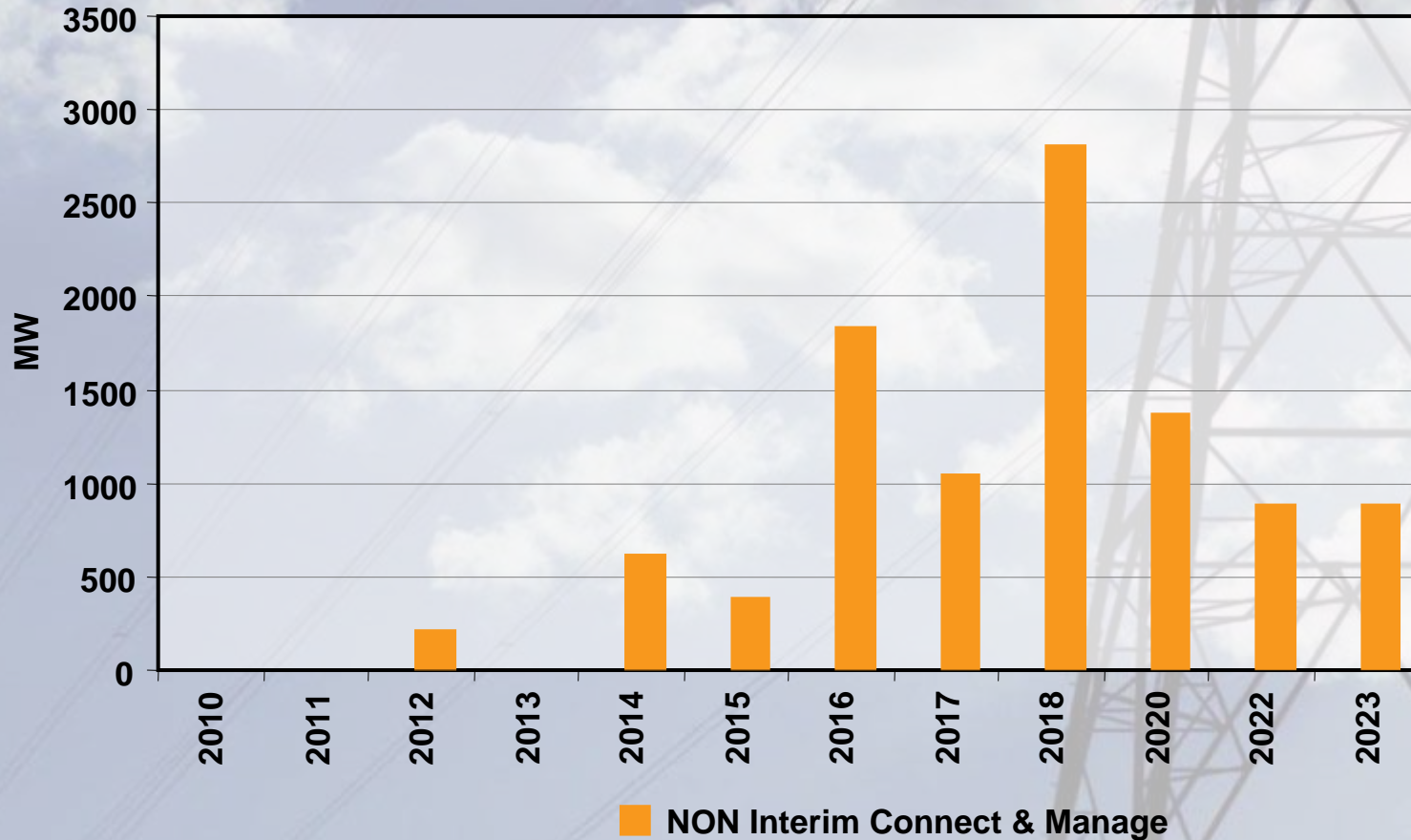
Programme of extra investment identified to March 2012

New Infrastructure Planning Commission process



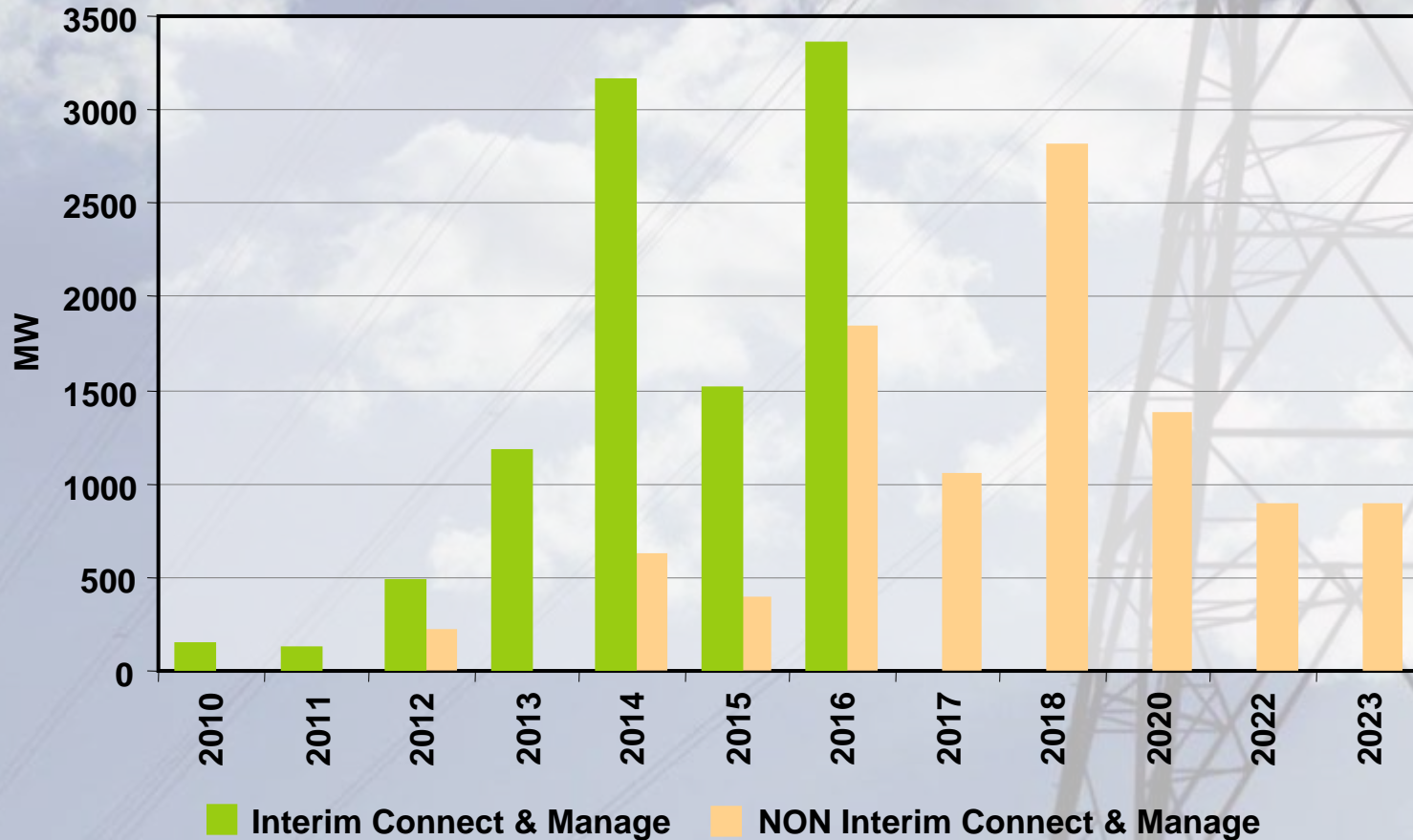
Transmission access...

Connection dates without Interim Connect & Manage



Transmission access...

Connection dates with and without Interim Connect & Manage

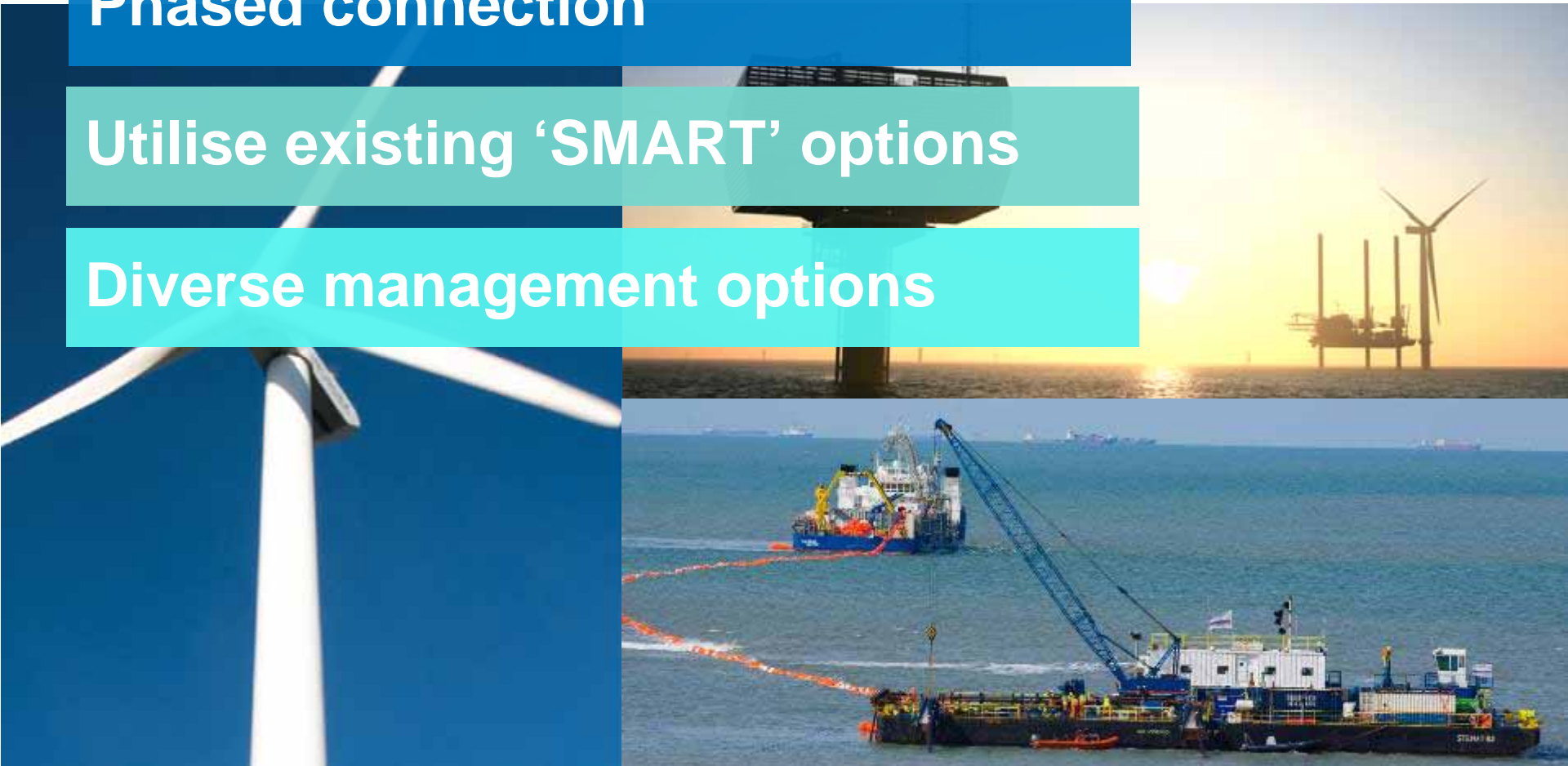


What does this look like today?

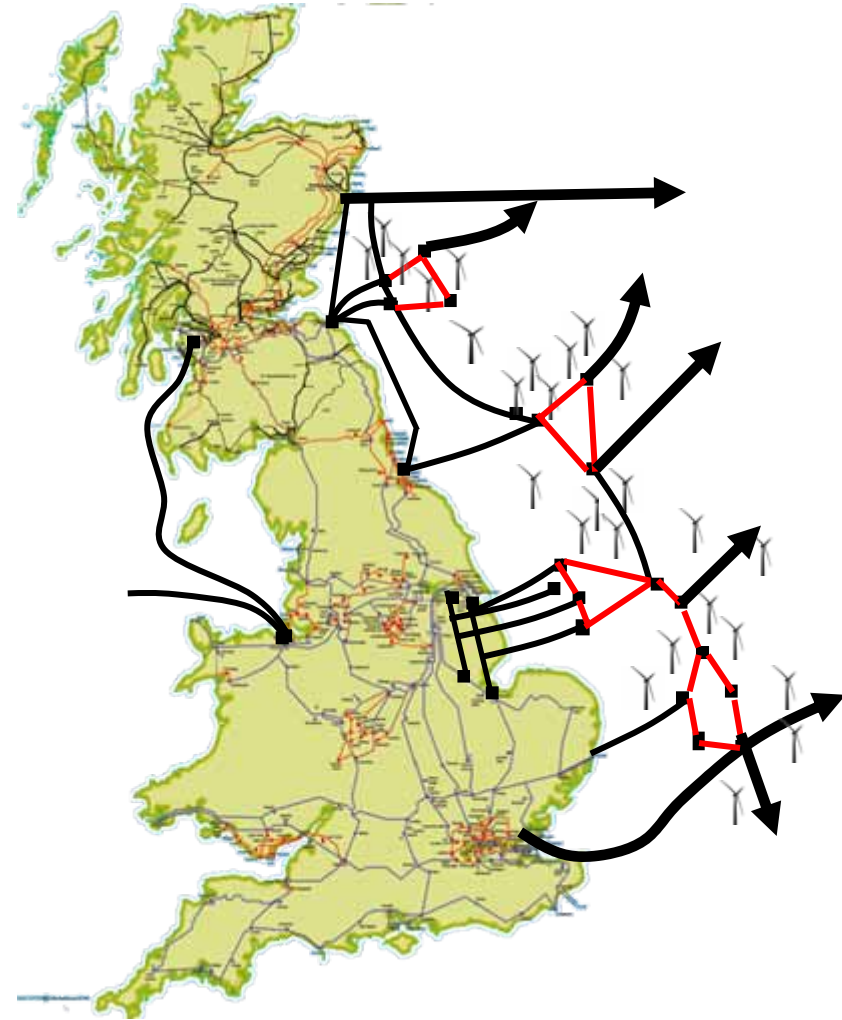
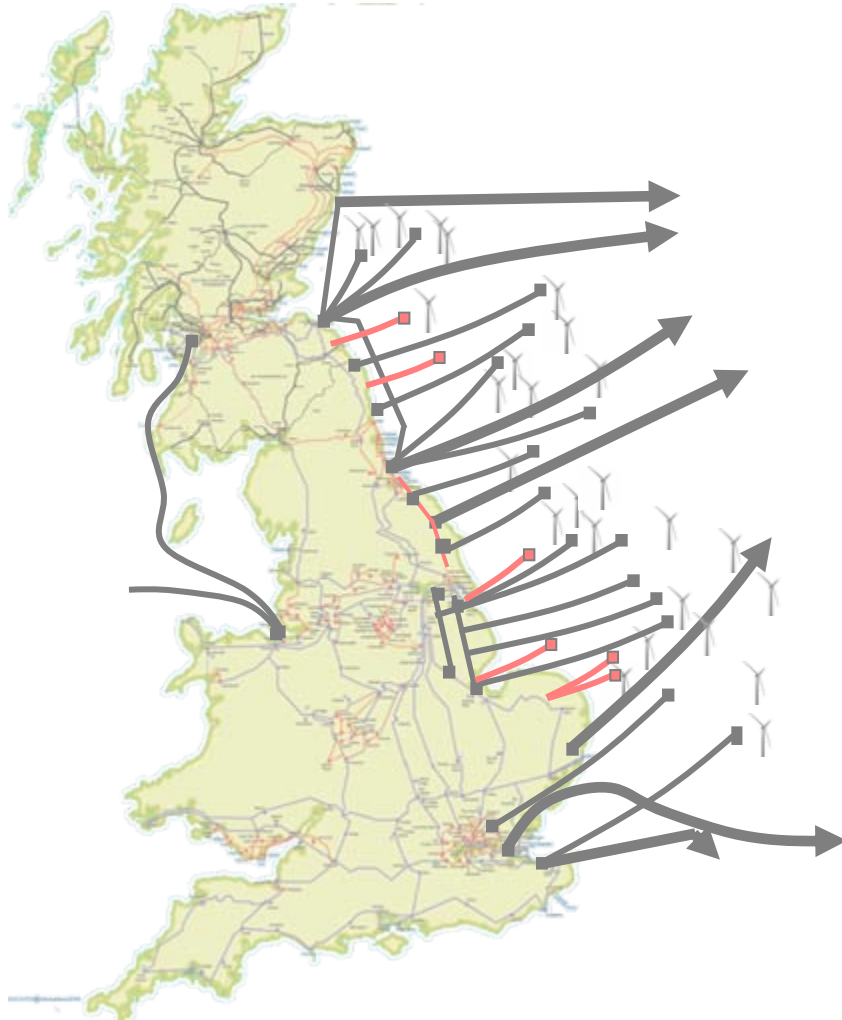
Phased connection

Utilise existing 'SMART' options

Diverse management options



Coordinated approach...



— HVDC CABLE
■ HVDC
— Converter
— HVAC

Can we build it?

Need consents in place

UK skills gap to manage...

Embed Connect and Manage

Work together...



Can we build it?

WWII Hurricane aircraft...



Can we build it?

1990's 'dash for gas'...



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