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The Energy Solutions Show
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Options for energy users: managing market & political risk in uncertain times

Changes in UK power generation

UK climate policy

Gas markets

Political risks

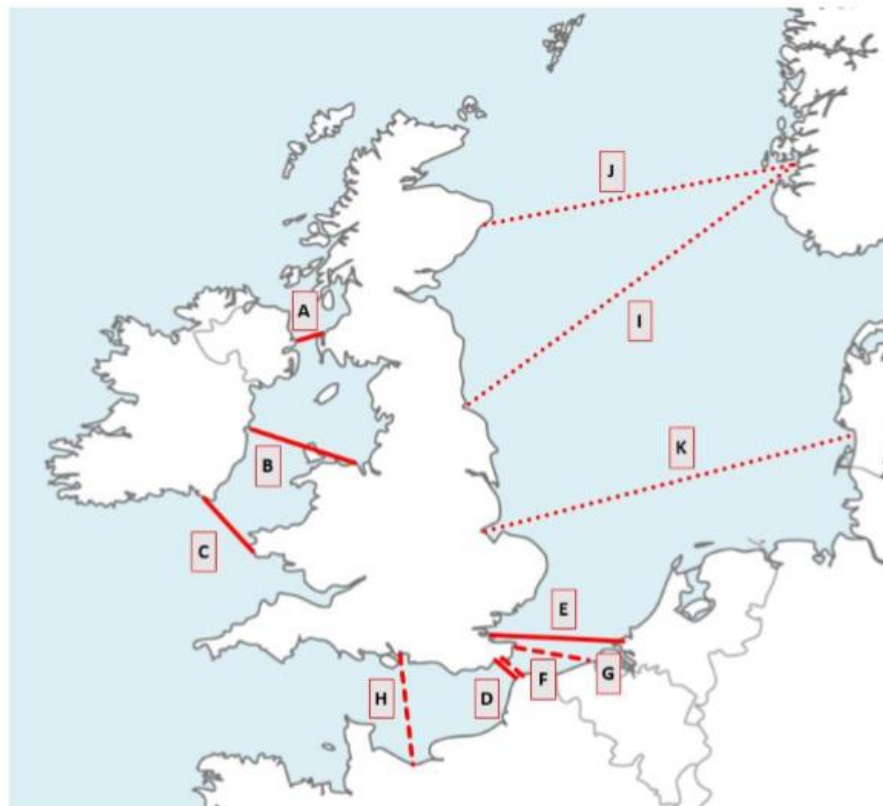
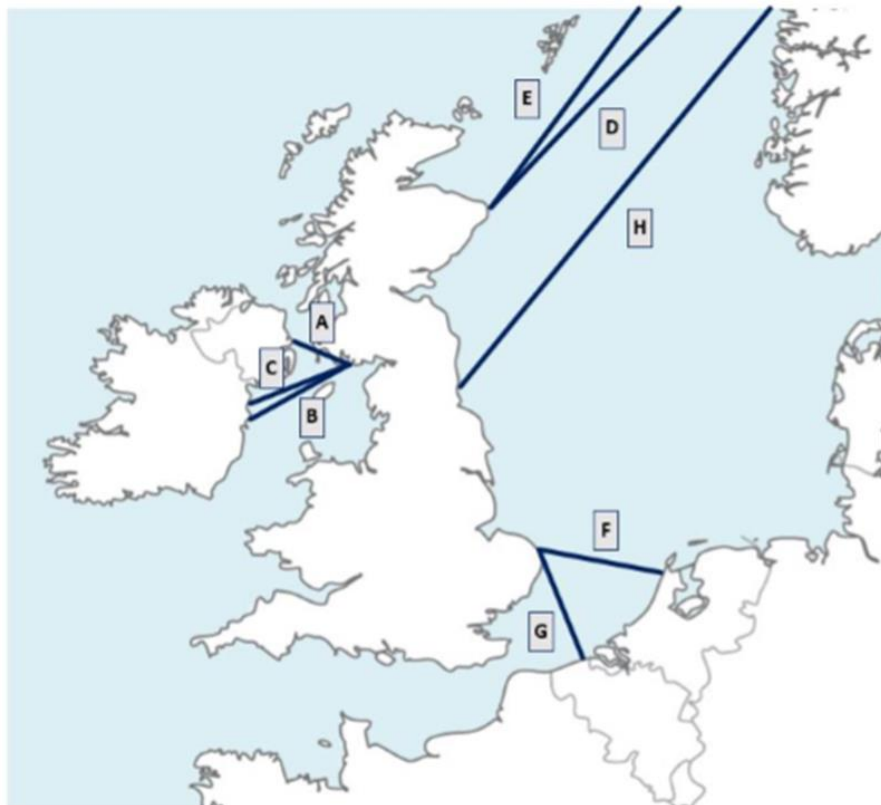
How should business users respond?

Changes in UK Power Generation



- Coal phaseout – already well-advanced, complete by 2025
- New nuclear has stalled – unclear what will follow Hinkley C
- Massive growth in offshore wind – UK a world leader
- Significant increase in interconnector capacity
- Solar still growing – uncertainty over future policy support
- Impressive reduction in emissions – occasionally <100g/kWh
- BUT – UK has highest industrial electricity prices in Europe
- High intermittency increases price volatility – I/Cs may help
- Capacity market hiatus/uncertainty for new gas generation

UK-EU Interconnectors: Gas & Electricity



Link	Name	Country	Status	Capacity *
A	SNIP	Northern Ireland	Operational 1996	export only
B	EC1	Ireland	Operational 1993	6 bcm/y - export only
C	EC2	Ireland	Operational 2002	2 bcm/y - export only
D	Vesterled	UKCS / Norway	Operational 1977	13.1 bcm/y - import only
E	FLAGS	UKCS / Norway	Operational 1982	15.0 bcm/y - import only
F	IUK	Belgium	Operational 1998	25.5 bcm/y - import 20.0 bcm/y - export
G	BBL	Netherlands	Operational 2006	19.2 bcm/y - import 19.2 bcm/y - export
H	Langaed	Norway	Operational 2006	26.3 bcm/y - import only

Link	Name	Country	Status	Capacity
A	Moyle	Northern Ireland	Operational since 2002	0.5 GW
B	East-West	Ireland	Operational since 2012	0.5 GW
C	Greenlink	Ireland	Proposed – potentially 2022	0.5 GW
C	IFA	France	Operational since 1986	2 GW
D	BritNed	Netherlands	Operational since 2011	1 GW
E	Nemo	Belgium	Planned – operational in 2019	1 GW
F	ElecLink	France	Planned – operational in 2020	1 GW
G	IFA2	France	Planned – operational in 2020	1 GW
H	NSL	Norway	Proposed – potentially 2020	1.4 GW
I	NorthConnect	Norway	Proposed – potentially 2022	1.4 GW
J	Viking Link	Denmark	Proposed – potentially 2022	1-1.4 GW

- 20% reduction in carbon emissions by 2020 (relative to 1990)
- 20% energy consumption met from renewables by 2020 UK: 15%
- 20% improvement in energy efficiency by 2020

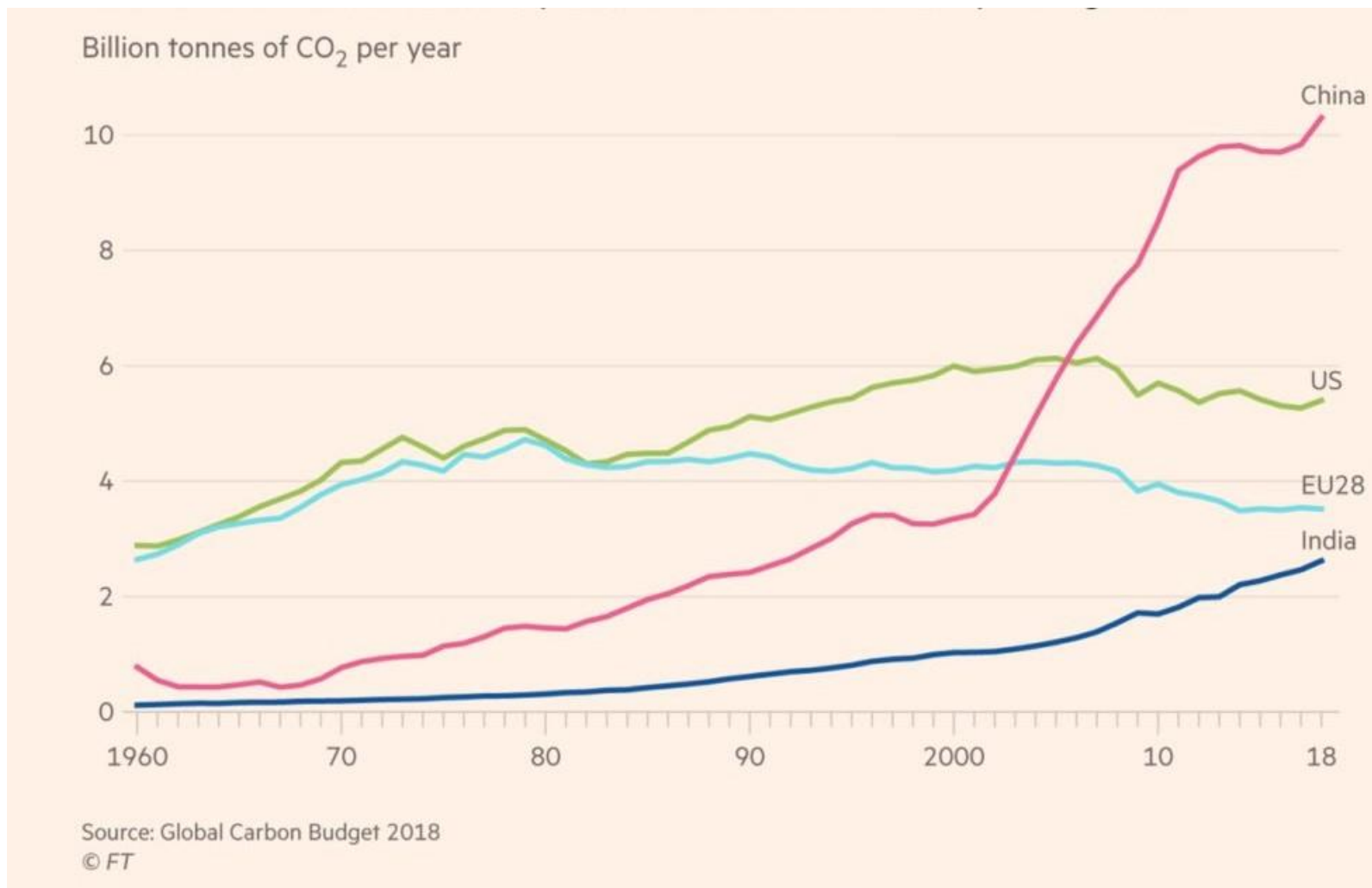
- At least 40% reduction in carbon emissions by 2030
- At least 34% energy consumption met from renewables by 2030
- 32.5% improvement in energy efficiency by 2030

- CCC recommend net zero-carbon emissions for UK by 2050
- Government expected to accept 2050 target BUT ...
- Will allow banking of budget surpluses – against CCC advice
- Heat decarbonisation is expensive – need range of technologies

Climate action – who will follow our lead?



Global Carbon Emissions - 1990-2018



- Abundant supplies of LNG available to world market
- US LNG reduces risk of dependence on Russian/Mideast gas – ‘freedom gas’ (!)
- Uncertainty over Nord Stream 2 pipeline
- Significantly reduced production in Netherlands – Norway/UKCS in long-term decline
- UK shale gas trials have stalled – current (highly conservative) environmental controls appear to render exploration unviable
- UK has highly competitive industrial gas prices *within Europe* – but still well above industrial supply prices in USA
- UK gas demand already falling – likely to fall further with heat electrification, though is also a source of hydrogen (with CCS)

Political risks



- Brexit – indirect impact of EU law will continue – ditto carbon pricing, in or out of ETS – trading will adapt, even if ‘no deal’
- Changes in regulation (or nationalisation) of energy networks – high risk of wider intervention under a Labour-led government
- Impact of political uncertainty on energy investment/security of supply – likely to raise cost of capital – bad news for users?

Options for business users



- Energy procurement strategy
- Energy efficiency – possible policy support
- Demand management – value of flexibility likely to increase
- Onsite generation – solar/storage opportunities
- Long-term Power Purchasing Agreements – viability depends on credit rating, appetite for risk – not suitable for all users

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