The Future of UK Energy Policy

Michael G. Pollitt

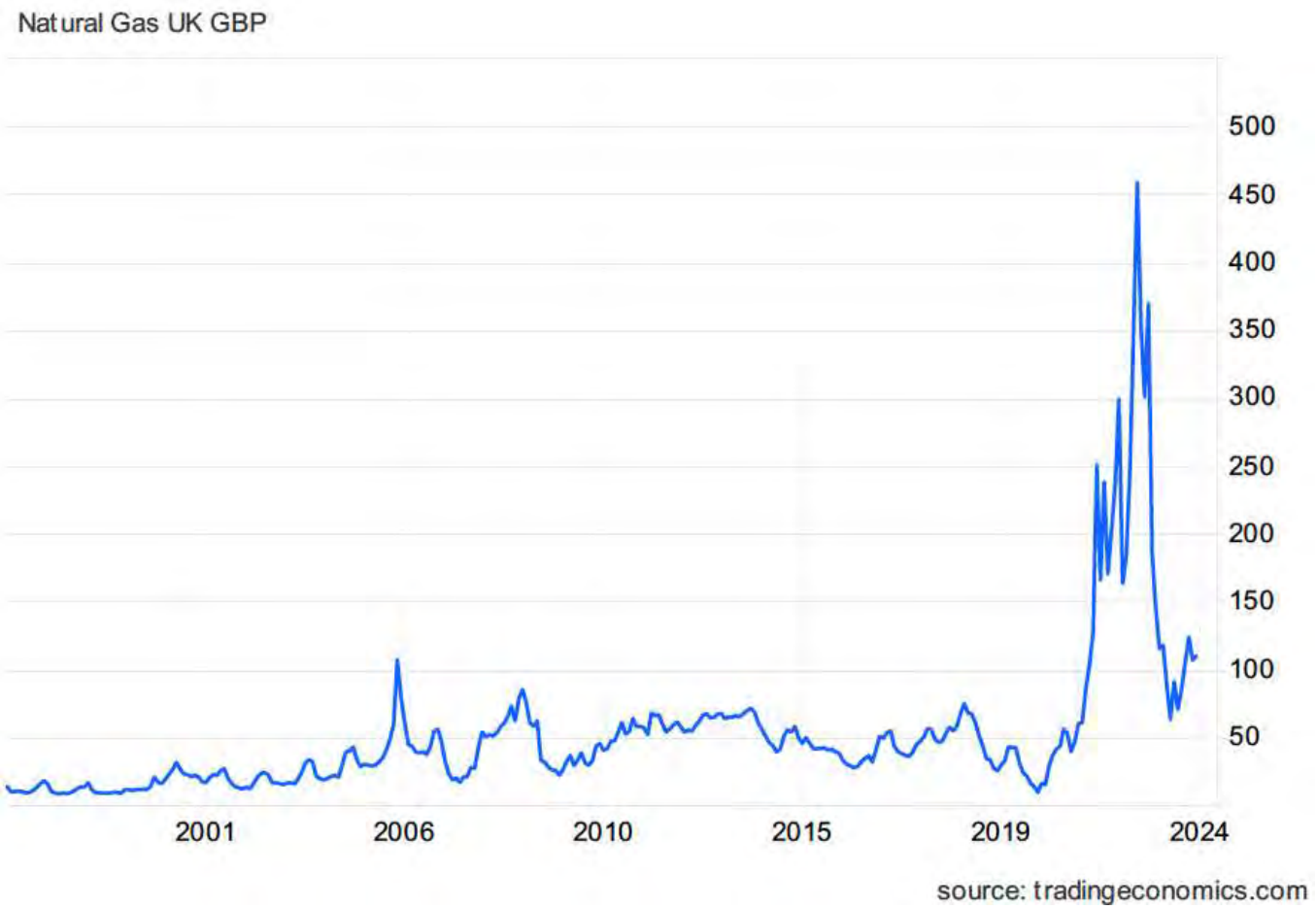
Cambridge Judge Business School
and
Centre on Regulation in Europe

8 December 2023
EPRG Winter Seminar

Ideas on UK energy policy

- Wholesale markets definitely work
- Retail markets can work most of time
- More locational pricing?
- Prices vs quantities?
- Getting the structures right
- Offshore wind
- Don’t be an energy island

A remarkable stress test: wholesale natural gas prices reached historically unprecedented levels



GBP pence per therm

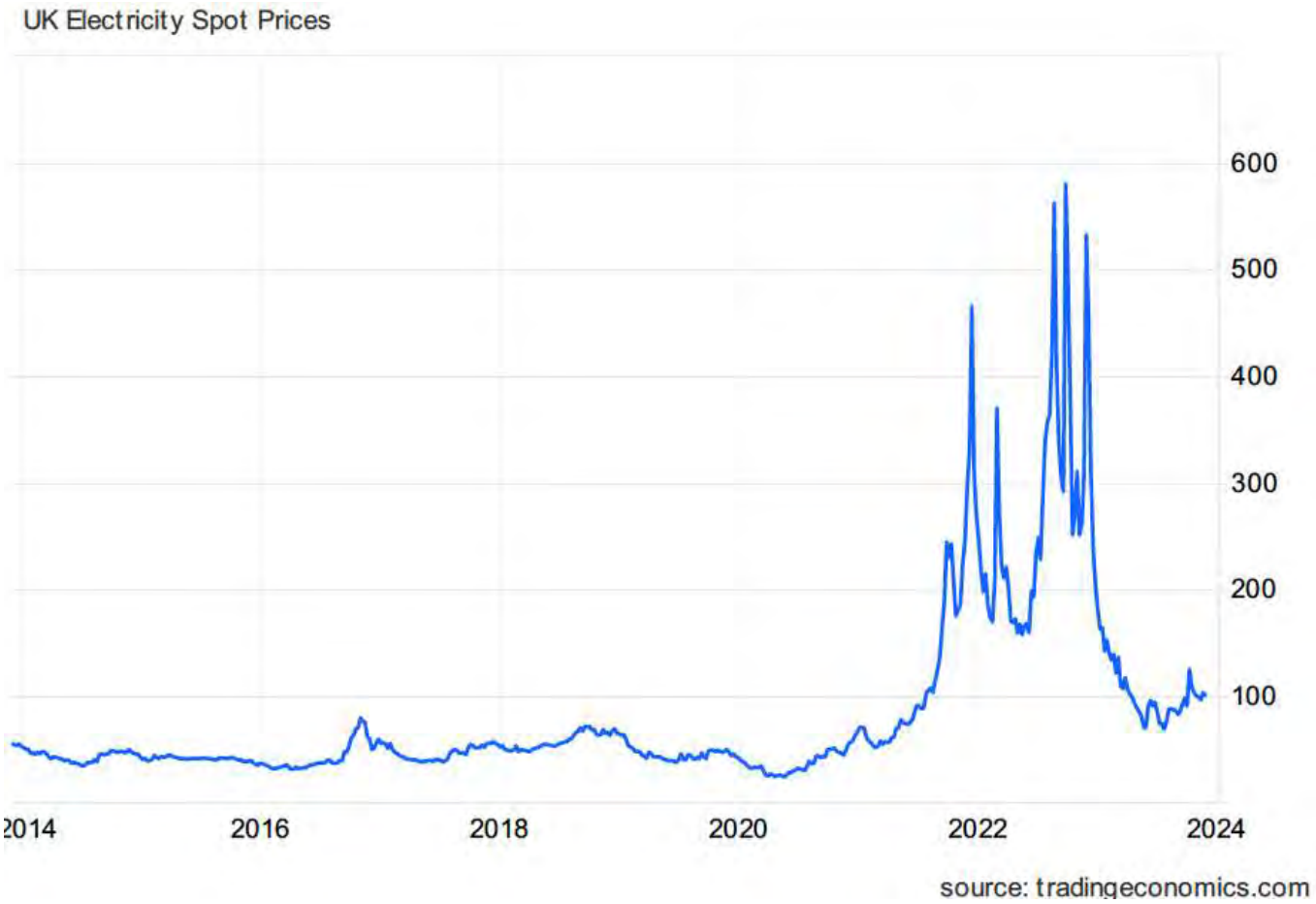
Price of 107p today (CPIH).

This is 86p in Jan 2018.

Jan 2018 it was 50p.

So, 70% higher
in real terms.

A remarkable stress test: wholesale electricity prices were at historically high levels



GBP £ per MWh

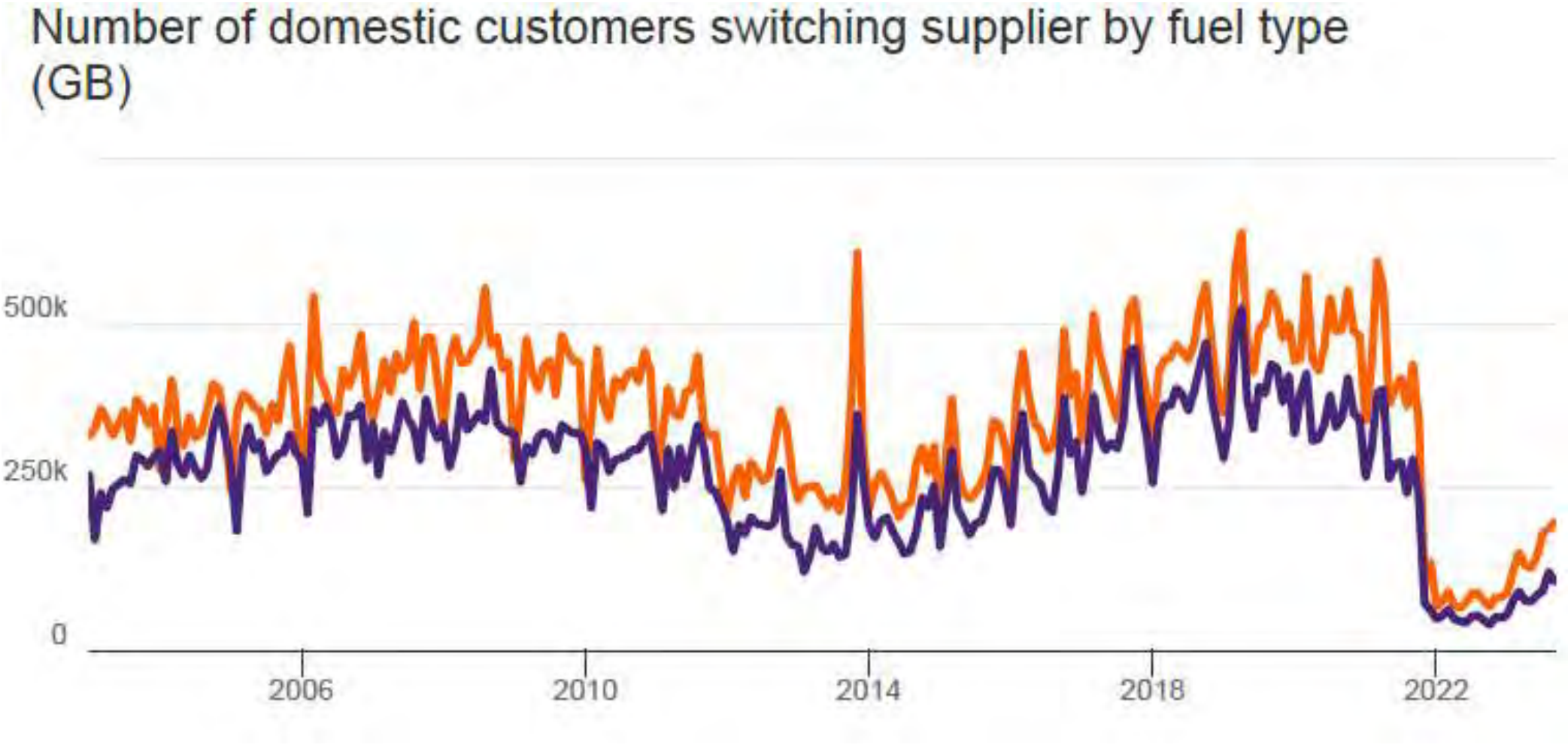
Price of £100 today

But £12 is higher carbon price;

£88 is price of £71 at Jan 2018 CPIH, when monthly price was c.£51.

So, price <u>is</u> elevated by 40% in real, post-carbon cost.

GB Retail switching has increased again…



Higher line = Electricity, Lower line = Gas
To August 2023 Source: Ofgem

LMPs for GB? FTI Report numbers revisited

Table 1: The CBA reworked

£bn *Scenario*	Reported overall Net Benefit (1)	Net benefit for dispatch only (2)	Reduction for Load Shielding (3)	Congestion Rent (4)	Reduction for inefficiency of FTR market (20%-33% loss) (5)	Reduction for rise in cost of capital (6)	Adjusted total net benefit (7)= (2)-(3)-(5) or (2)-(3)-(6)
Nodal							
LtW(NOA7)	24.0	13.7	Est. 0	27.1	5.4-9.0	7.45	+4.7 to +8.3
LtW(HND)	14.4	Est.8.2	Est. 0	25.6	5.1-8.5	Est.7.45	-0.3 to +3.1
SysTr(NOA7)	13.1	Est.7.5	1.7	16.4	3.3-5.4	Est.7.45	-1.6 to +2.5
Zonal							
LtW(NOA7)	15.3	Est.8.7	Est. 0	18.0	3.6-6.0	Est.0	+2.7 to +8.7
LtW(HND)	7.1	Est.4.0	Est. 0	15.4	3.1-5.1	Est.0	-1.1 to +4.0
SysTr(NOA7)	6.2	Est.3.5	Est. 0	12.0	2.4-4.0	Est.0	-0.5 to +3.5

See: Pollitt, M.G. (2023b), *Comments on the FTI Report on Assessment of locational wholesale electricity market design options in GB August 2023*, 12 October 2023 p.9.

FTI numbers are in Red. My numbers are in Black.

We do need better locational signals.

LMPs as practiced in the US are a pre-energy transition system focused on transmission with limited evidence on their social welfare effects in use, we need to better understand their efficiency, market power and risk trade-offs.

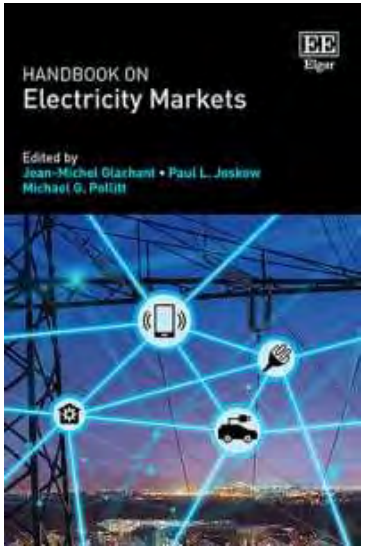
A hybrid market design? Its not just about prices…
(Pollitt, 2021)

- Of course, the likelihood is that some sort of new hybrid market design might develop.
- This would make use of some price-based elements, particularly towards non-energy ancillary services, and of non-price quantity based rationing.
- One could imagine the default contracts being rationing contracts and these would exist on the basis of public desire for zero carbon energy systems.
- Retailers or energy communities (such as exist in California or the EU) might provide power on this basis to their own customers, acting as intermediaries between price-based charging and quantity-based rationing.
- Equally, we might imagine that households would have two contracts – one for basic service and one for EV charging.

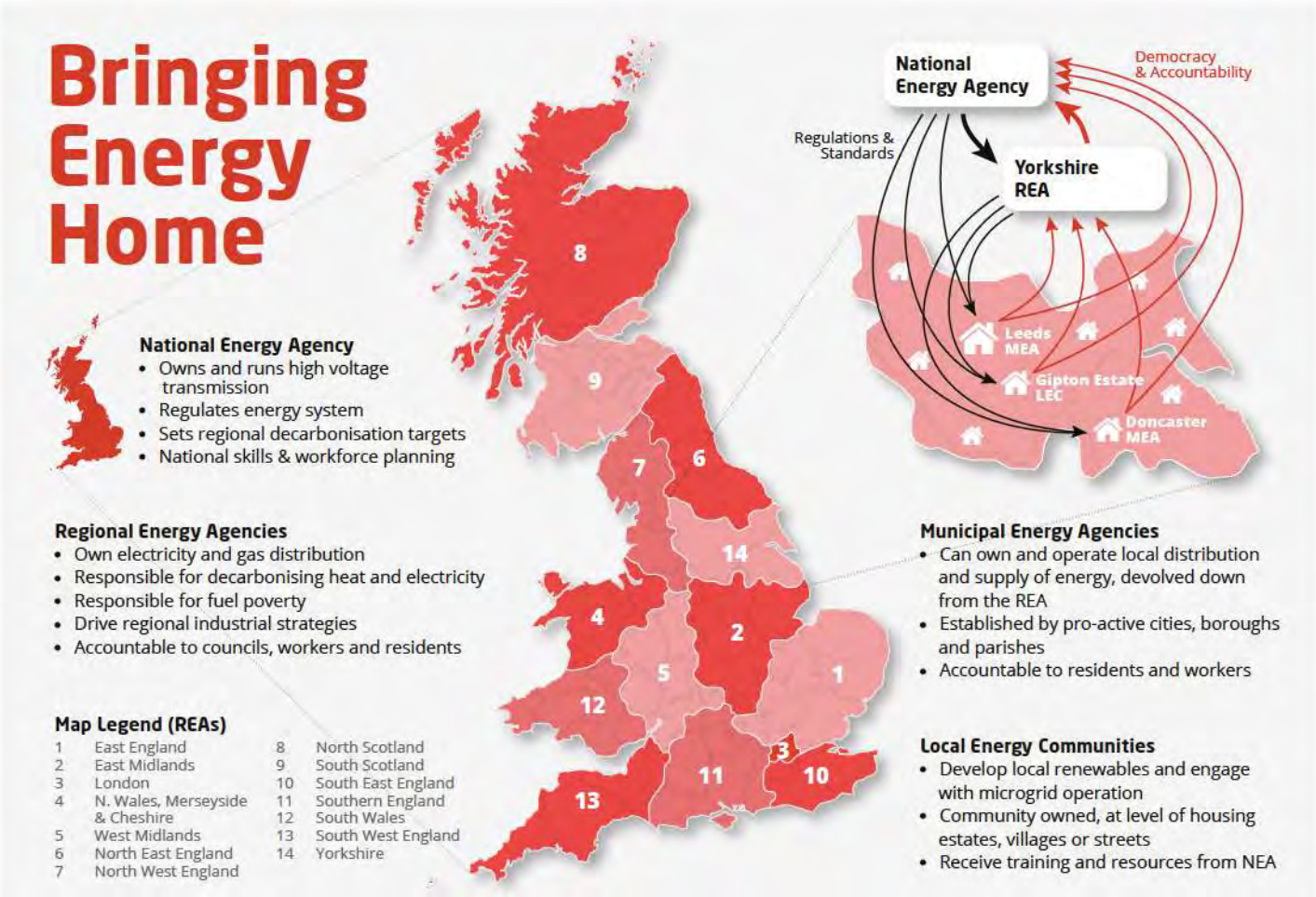
National Audit Office

The energy supplier market

The Department for Business, Energy & Industrial Strategy and Ofgem



Reorganising the industry for net zero?



- The FSO is a start.
- Gas and electricity networks in same area in same company?
- NGET and NGGT?

Source: Bringing Energy Home, 2019, p.9.

Offshore Wind is key to UK and EU decarbonization, so don't stuff up auction design

Table. Capacity gaps towards the 2030 installation targets of North Sea countries (MW).

Country	Installed capacity	Under construction	Pre-construction	2030 targets	Gap	Pipeline
UK	13,918	6,588	7,610	50,000	21,884	22,890
Germany	8,055	733	2,042	30,000	19,170	18,748
Netherlands	2,829	2,299	0	21,000	14,416	11,456
Denmark	2,308	344	0	12,900	9,248	10,200
Belgium	2,261	0	0	6,000	3,739	3,500
Sweden	192	0	0	-	-	5,900
Norway	6	0	0	-	-	2,000
France	482	1,444	1,592	4,400	882	0

UK Case

Status	Capacity - GW
Seabed allocated	89
In development	52.6
Gap to 2030	21.9
Consented	9.6
Need to consent	12.3
Consent to commission for previous CfD projects	7.17 years
The 12.3 GW need to be consented before	2025
Winning CfD to commission	4.86 years
The 21.9 GW need to win CfD before	2026

Source: Zhang and Pollitt, 2023, EPRG WP 2323.

UK energy and climate policy should align with EU

- The EU-UK Trade and cooperation agreement establishes a Specialised Committee on Energy (SCE) as part of implementation and functioning process.
- Title VIII (Part 2) to the Agreement (The Energy Title) is one of the more detailed parts of the whole Agreement. At a high level it states that no tariffs can be imposed on exportation of electricity and gas by either party. The agreement is generally supportive of continuation of competitive markets and of not supporting renewable electricity (RES-E) in a way that would undermine competition. There must be monitoring of competition and an independent energy regulator. The agreement preserves the Single Electricity Market in Ireland (I-SEM).

- This is up for re-negotiation in 2026.

- We should argue for:
  - Continuation of current arrangements as baseline.
  - Re-entry into EU ETS I and entry into EU ETS II (and hence exemption from UK firms' liability to CBAM).
  - Re-entry into EUPHEMIA market coupling algorithm.
  - Full membership of ACER, ENTSO-E, ENTSO-G.

Bibliography

FTI Consulting and ES Catapult (2023a), *Locational pricing assessment in GB: Final modelling results*, *Presentation to Stakeholders Workshop 3*, FTI Consulting, 6 June 2023, London and 13 June, Glasgow.

FTI Consulting and Energy Systems Catapult (2023b), *Assessment of locational wholesale electricity market design options in GB, October 2023.* London: FTI Consulting.

Pollitt, M.G. (2023a), *Locational Marginal Prices (LMPs) for Electricity in Europe? The Untold Story,* EPRG Working Paper No.2318.

Pollitt, M.G. (2023b), *Comments on the FTI Report on Assessment of locational wholesale electricity market design options in GB August 2023*, 12 October 2023.

Pollitt, M.G. (2023c), *Energy Markets Under Stress: Some Reflections on Lessons From the Energy Crisis in Europe*, EPRG Working Paper No.2317.

Pollitt, M.G. (2021), 'The Future Design of the Electricity Market' in Glachant, J-M., Joskow, P. and Pollitt, M.G. (eds.) *Handbook on Electricity Markets*, Cheltenham: Edward Elgar, pp.428-442.

Zhang, H. and Pollitt, M. (2023), *Comparison of policy instruments in the development process of offshore wind power in North Sea countries*, EPRG Working Paper No.2323.