Staying Connected: Key Elements for UK-EU27 Energy Co-operation after Brexit

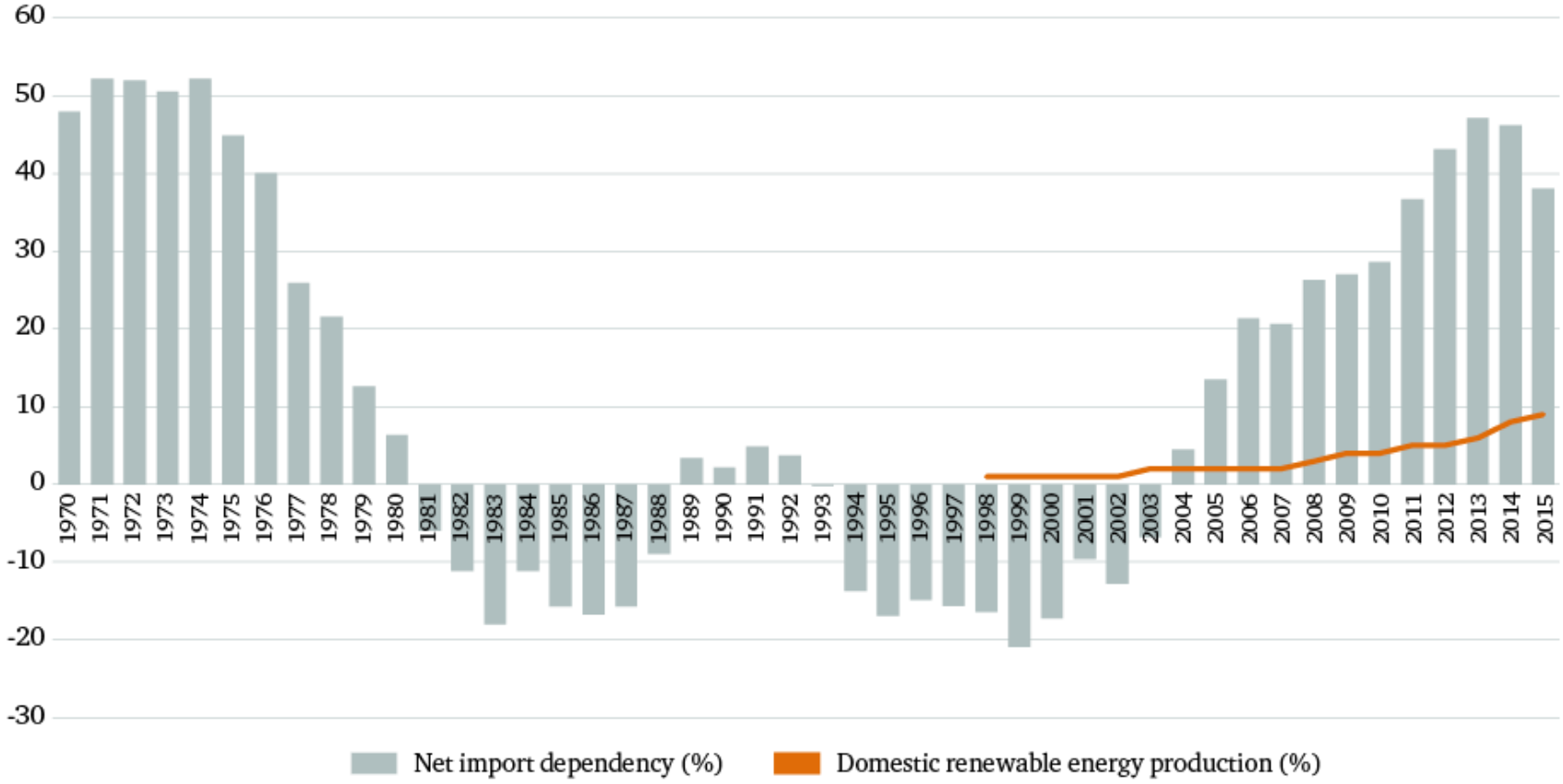
10th May 2017

Brexit negotiations

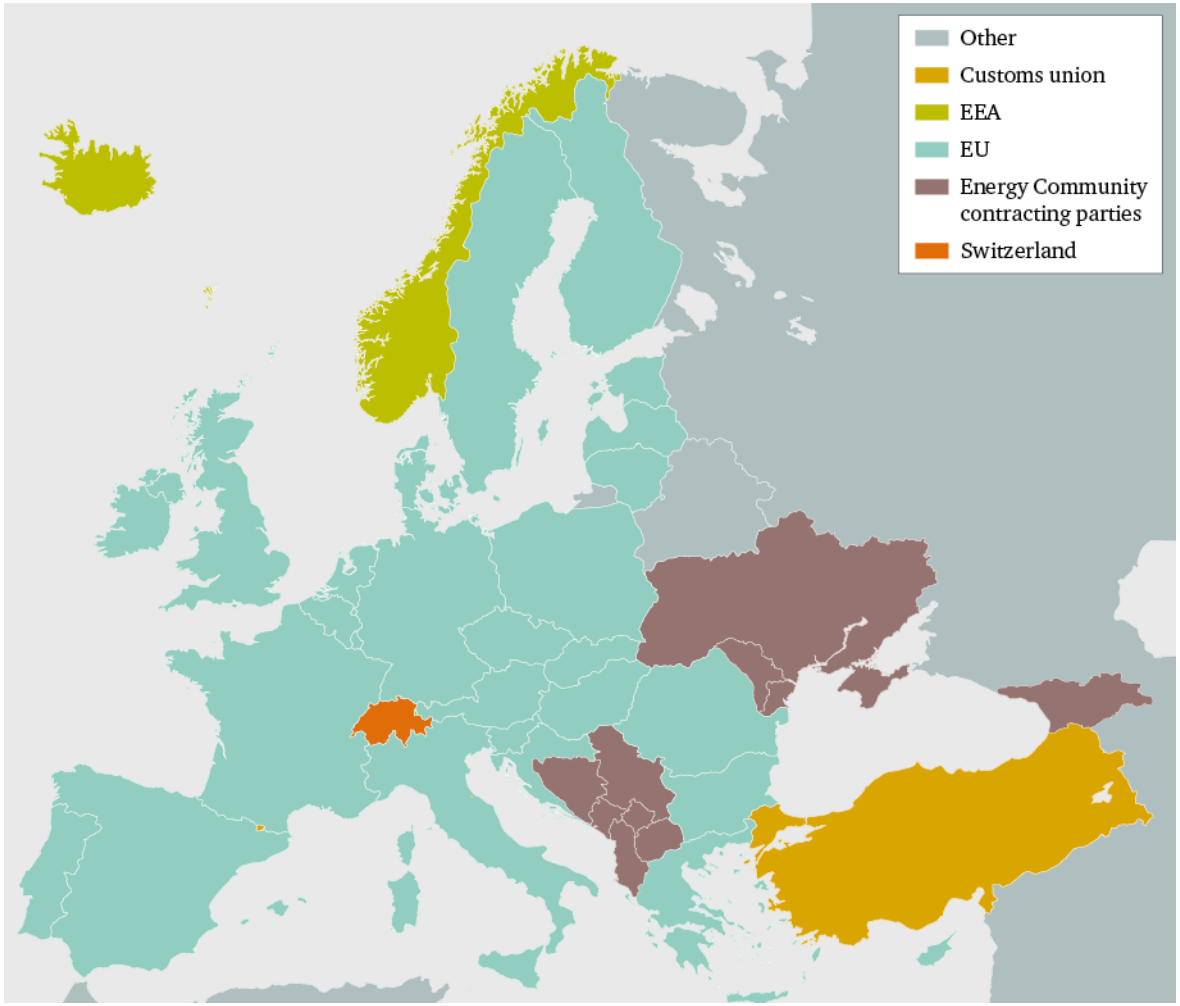
- Brexit will be complicated and unlikely to be completed within 2 years

- Energy, and electricity in particular, offers opportunity for co-operation and progress and is important as:
  - Maintaining reliable and affordable supplies is essential for society and economy
  - Electricity is difficult and expensive to store
  - Decarbonisation will change energy system
  - Supply dominated by wires and pipes
  - Electricity is not traded globally

UK's growing import dependency increases the need for energy co-operation



EU's external energy relationships



Non-energy specific Brexit issues may affect the energy sector

- Increasing costs of non-tariff barriers
- Divergent manufacturing standards
- Restricted access to skilled workers
- Potential for additional financial reporting requirements

Brexit negotiations and future agreement: key issues

- Key elements of future relationship
  - Electricity trade and market coupling
  - Interconnector investment
  - Influencing EU energy policy
  - Compliance and enforcement
  - All-Ireland Single Electricity Market
  - Access, or replacing, European funds
  - Emissions Trading Scheme
  - Euratom

- The global dimension
  - Impact on EU27
  - An enlarged European Energy Union

Electricity trade and market coupling

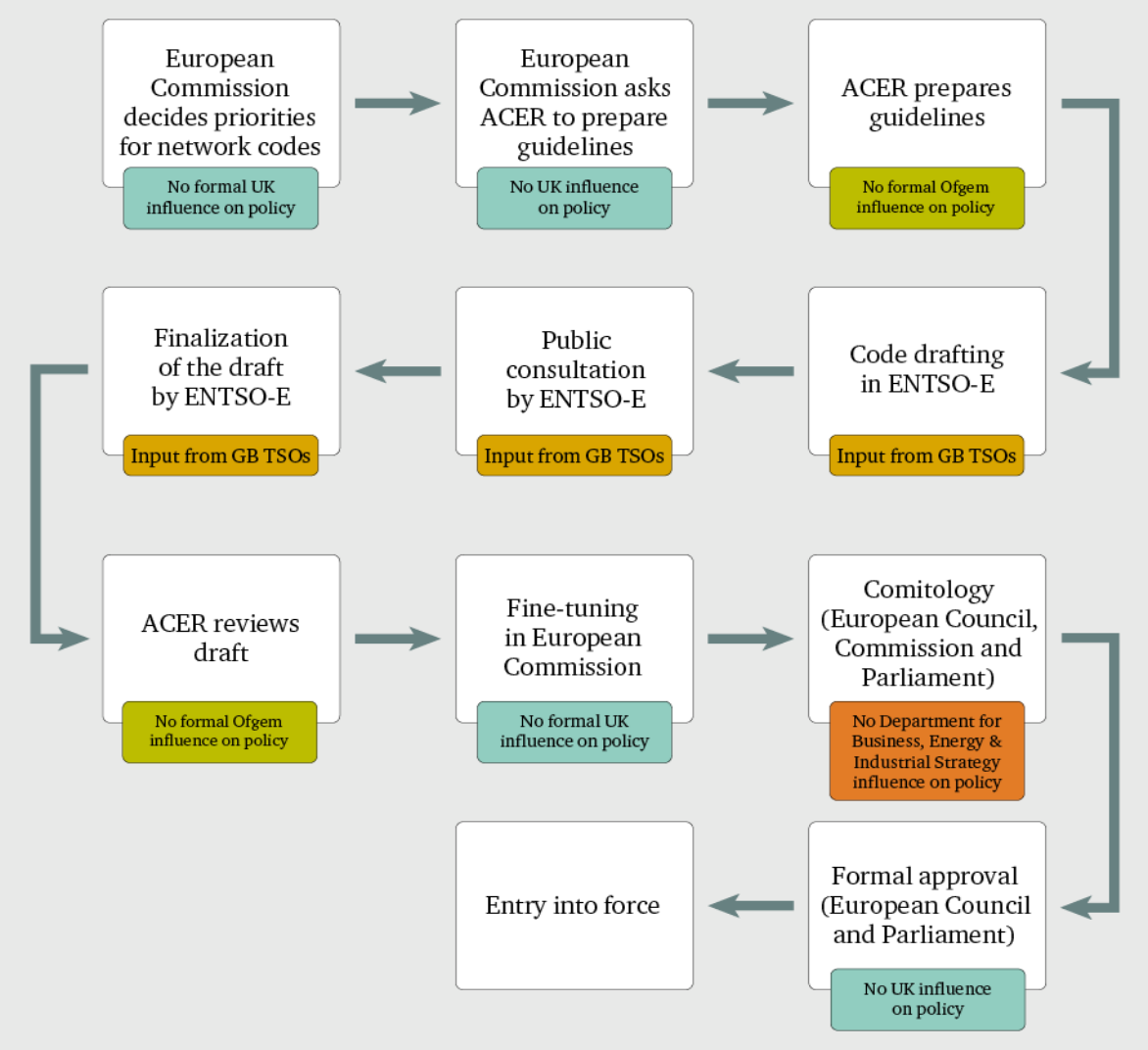
- Implicit market coupling: when interconnector capacity and energy are sold together in a single market process. It is more efficient than explicit market coupling.
- Different market coupling arrangements:
  - **Forward:** Explicit market coupling arrangements
  - **Day-ahead:** Implicit market coupling arrangement since completion of Day Ahead Multiple Regional Coupling in 2013
  - **Intraday:** Explicit market coupling arrangements, until completion of XBID
- Financial benefits of implicit market coupling:
  - Lower wholesale prices across the system due to larger pools of supply and demand being matched more efficiently
  - Lower intermarket and transaction costs, so trading becomes easier and cheaper.
  - More efficient use of interconnector capacity
- Estimates of benefits of the order of £100m/year. These will increase with more interconnector capacity and move to cross-border balancing.
- Still unclear whether GB post-Brexit will remain part of current and future market coupling arrangements. Requires the active collaboration of GB interconnection counterparts. Market coupling also developed through European legislation.

Interconnector investment

Name	Connects GB to	Capacity (MW)	Contracted or actual date of operation	Estimated cost[a]	Connecting Europe Facility development funding[b]
Operating					
IFA	France	2,000	Since 1986		
Moyle	Northern Ireland	450 MW to NI (of which 295 MW to GB)	Since 2002		
BritNed	Netherlands	1,200	Since 2011		
EWIC	Republic of Ireland	505	Since 2012		
Total		**4,155**			
Contracted					
ElecLink	France	1,000	Contracted 2016	£590 million	€1.7 million, €0.5 million
Nemo	Belgium	1,000	Contracted 2018	€690 million	
NSN	Norway	1,400	Contracted 2019	€2,000 million	€31.3 million
IFA-2	France	1,000	Contracted 2019	€690 million	€5.9 million
FABLink	France	1,400	Contracted 2020	€750 million	€7.23 million
Aquind	France	2,000	Contracted 2020	£1,100 million[c]	
Viking Link	Denmark	1,000	Contracted 2022	€2,000 million	€14.8 million
NorthConnect	Norway	1,400	Contracted 2021	€1,300 million	€10.7 million
Total		**10,200**			
Projects of Common Interest or party of ENTSO-E* Ten-Year Network Development Plan					
Belgium-GB-2	Belgium	1,000			
Icelink	Iceland	1,000			
Greenwire	Republic of Ireland	3,000			
Codling Park	Republic of Ireland	500–1,000			
Energy Bridge	Republic of Ireland	5,000			
Irish-Scottish Isles	Northern Ireland	1,200			
Second Interconnector	Belgium	1,000			
		12,700–13,200			

- Project by UK Department for Business, Energy & Industrial Strategy: UK's net electricity imports will rise from around 20 TWh in 2016 to 80 TWh in the mid-2020s.
- Brexit adds to uncertainty over economic viability over interconnectors, in part because of UK status in market coupling mechanism

Governance and Policy Influence: the example of European Network Codes (ENC)



Compliance and enforcement for energy

	EU members	Norway/EEA	Switzerland	Energy Community	WTO	Customs union
Market access						
Non-tariff barriers allowable?	Y	Y	Y	Y	Y	Y
Membership						
Compliance with current market *acquis*	Required	Required	Required	Required	Not required	Not required
Advanced market rules – market coupling	Required	Required	Not required	Not required	Not required	Not required
Governance						
European Commission	Y	N	N	N	N	N
ENTSO-E	Y	Y	Y	Y	Y	Observer
ACER	Y	Observer	N	N	N	N
Enforcement						
	ECJ	EFTA Surveillance Authority, EFTA Court	National law	Ministerial Council, no judicial action	GATT, GATS, WTO dispute-settlement processes	Bilateral agreement, WTO dispute

All-Ireland SEM

- A Single Electricity Market (SEM) operates across the whole of Ireland (the Republic and Northern Ireland). It is jointly operated by the two jurisdictions and regulated by the Irish Commission for Energy Regulation.
- Move toward greater interconnection: the new Integrated Single Electricity Marker (I-SEM) with EU & need for network code compliance
- Options going forward:
  - Northern Ireland and special zone – continuing to comply to EU regulation
  - Special status of SEM, with N. Ireland not subject to ECJ jurisdiction
  - Unwind SEM
- Recognition that EU and IEA require gas and oil storage minimum infrastructure which is currently shared with the UK
- UK and Ireland also engage in regional approaches on energy, such as North Seas Countries Offshore Grid Initiative, which may be threatened by Brexit

EU financial support and investment

- EIB: significant source of investment - €9.3 billion for energy in UK (2012-16)
- Structural Funds: €2.9 billion for low carbon and €2.6 billion for climate adaptation (2014-20)
- European Fund for Strategic Investment: €8 billion
- Connecting Europe Facility: around €190 million for UK projects
- Research and Development: UK expected to receive €2.5 billion over 7 years for energy, transport, climate and nuclear
- JET in Culham particularly vulnerable, as major centre of EU research: EU providing €60m annually
  - Budget extension decision expected in 2018

ETS

- ETS has 31 members: EU member states, plus Norway, Iceland, Liechtenstein which joined during 2nd phase
- Support for remaining in ETS is not overwhelming: reform is needed
- The ECJ has jurisdiction over the ETS which may rule out UK participation post-Brexit
- Linked systems - Switzerland: technical talks completed in January 2016, but delayed start due to issues around immigration (now resolved)
- UK Emissions Trading Scheme? Tax on carbon/energy – need to consider political and financial longevity

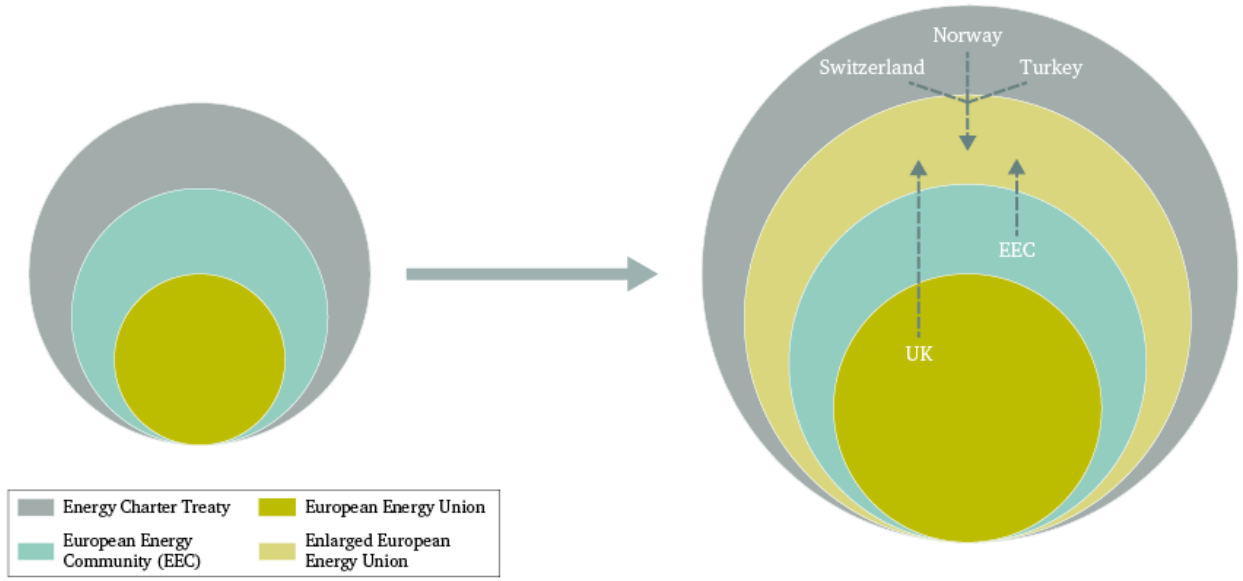
Some Brexatom Issues

- **Nuclear material safeguards**: Outside of Euratom, inspections would need to be carried out either by the UK's Office for Nuclear Regulation (ONR), a new agency, or via an agreement with the IAEA.
- **Research and Development**: UK fusion research fully linked with Euratom, in JET operation or in ITER.
- **The Euratom Supply Agency** oversees the supply of nuclear materials
- **Nuclear safety standards**: The EU, through Euratom, is responsible for:
  - Setting standards for operating reactors;
  - Designing nuclear waste-management strategies;
  - Regulating radiation, health protection (for workers and the public) and environment protection
- **International agreements:** UK post-Brexit will need to replace all Euratom international agreements for supply of nuclear material/equipment . Otherwise, it will become impossible for the UK's civil nuclear business to continue to operate or develop in the longer term. Unlike other aspects of trade, there is no WTO agreement to fall back on.

Brexit and energy: key issues for EU27

- UK currently important EU entry point for fossil fuel imports, particularly LNG
- UK important player in regional approaches to energy, such as the North Sea Grids initiative and offshore wind projects
- Climate Change
  - Changes to EU targets as a result of Brexit
  - Loss of key proponent of existing policy
  - UK action on global climate diplomacy

A Reformed and Enlarged Energy Union



- Create continental vision for Energy Union: competition, security & prosperity for all of Europe
- Enable 'unaligned' European countries to operate in binding multilateral framework
- Widen influence of European energy acquis
- Strengthen energy sectors in European Energy Community countries
- Reduce risks, via strengthening sectors in transit countries, for energy producers and consumers

Conclusions

- Negotiations on Brexit terms and future UK-EU27 agreement will be complex. Achieving a deal in 2 years is unlikely.
- A transitional arrangement or implementation phase is likely to be necessary.
- Strong UK-EU27 energy cooperation, particularly for electricity, would benefit the UK, EU27 and potentially wider Europe
- Such a permanent or transitional deal would need to address key areas, such as:
  - Maintaining the Single Electricity Market across Ireland
  - Maintaining the considerable benefits from interconnectors and market coupling
  - Ensuring against consequences of Brexatom to avoid safety and non-proliferation problems.
- Domestic action will be needed to
  - Ensuring that energy & climate investment and R&D funds are at least comparable to that currently allocated from EU funds
  - Deciding whether to remain within the ETS or replace it with a domestic trading scheme or carbon tax with similar political stability
- It will be essential to conveying benefits of strong UK-EU27/pan-European energy cooperation to consumers across Europe early on in negotiations.

Thank you

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