

Implications of Brexit on Climate Policy

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Important issues for climate policy post-Brexit

- Re-calculating EU **carbon targets** without the UK
- Linking options of **carbon markets** for the UK and the EU ETS
- UK and EU relations for **trade** in climate goods and services
- Collaborations between UK and EU in **climate innovation**

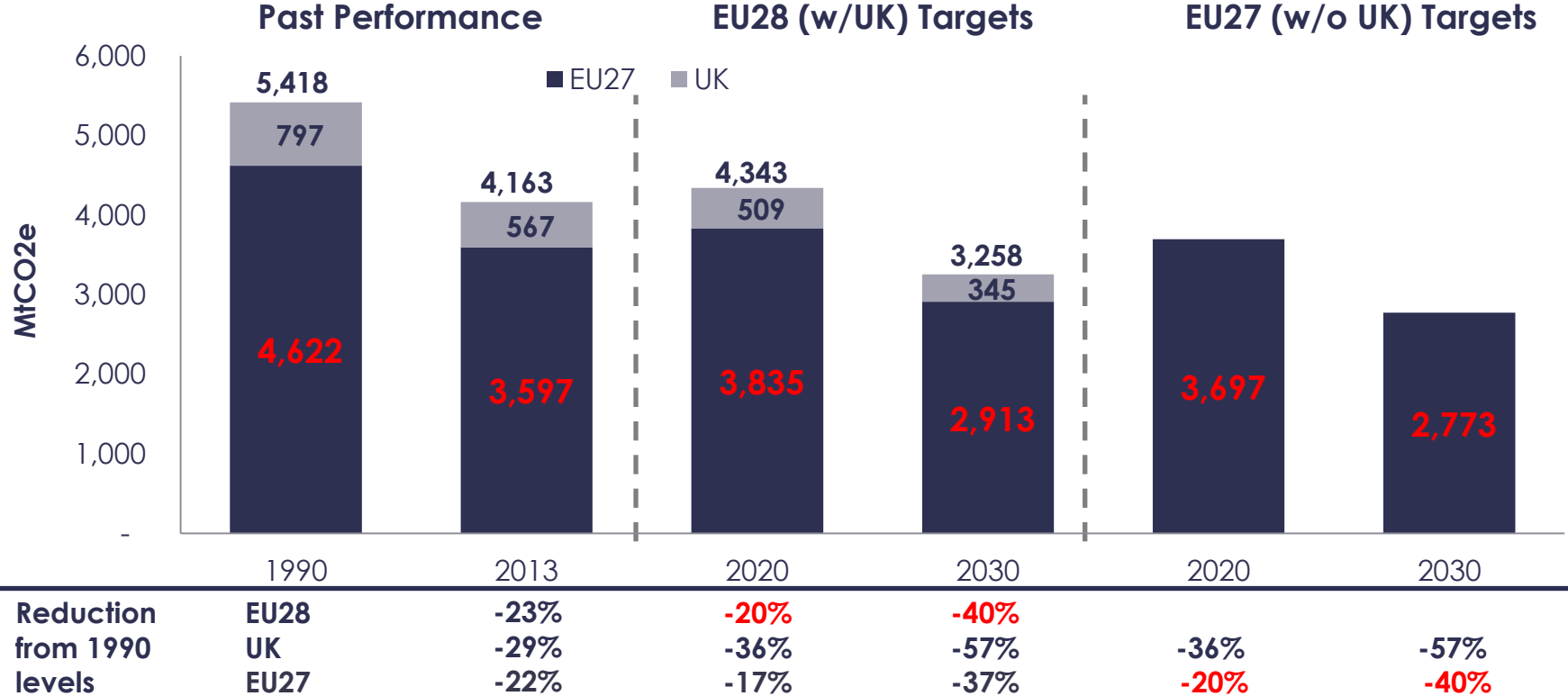
Climate targets for EU & UK

Under the Paris Climate Agreement the EU commits to reduce its greenhouse gas emissions by 40% from 1990 levels by 2030.

The UK Climate Change Act set its own reduction targets of 57% from 1990 levels by 2030.

How much more will the EU need to achieve to meet targets without the UK?

Meeting climate targets with & without the UK



Source: Presenters' calculations from EEA (2016); UK CCC (2016)

Linking of carbon markets

EU Emissions Trading Scheme covers emissions from the power sector, and certain carbon-intensive industrial sectors (over 11,000 installations in the EU28 that account for 45% of total EU28 emissions).

About 40% of UK emissions (from ~1,000 installations) are covered by the EU ETS. Currently the UK is a net seller of permits into the EU ETS.

What options does the UK & EU have if the UK leaves the EU ETS?

Carbon dating and the consequences of a divorce in the EU ETS

Theory	Implications for the UK	Implications for the EU
Links to bigger markets is preferred	Other big markets besides the EU ETS are China (soon to start) and California. UK should seek a link.	EU ETS is already big, so both California and China will prefer EU ETS link to the small UK market
Links with markets less correlated with own economy are preferred	UK and EU economies are strongly positively correlated. Correlation with China and California is less strong.	EU economy , with or without the UK, is positively correlated with China and California.
Setting up a market, or linking to other markets is costly	EU ETS is in place and admin costs are sunk. Divorce will impose new costs. Linking with another partner implies additional, potentially large, costs.	As the largest and established carbon market, EU ETS can likely impose its rules on partners, but admin costs may still be substantial.

Source: Doda & Taschini (2016)

Trade in climate goods & services

Over 50% of UK exports & imports of goods come from the EU.

(Source: Calculated from BACI database)

46% of UK services are exported to the EU.

(Source: Llewellyn Consulting 2016)

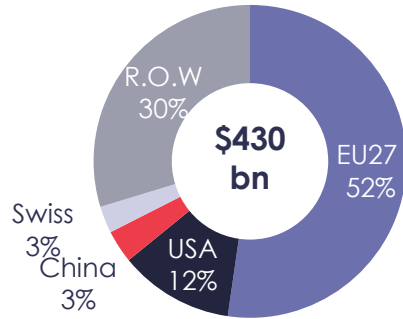
**How important are the trade links
for climate goods & services?**

UK's main trade partners (goods only)

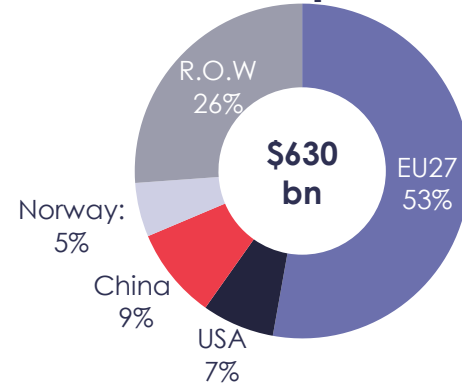
All Goods

Net exports=
-\$200bn

UK Exports



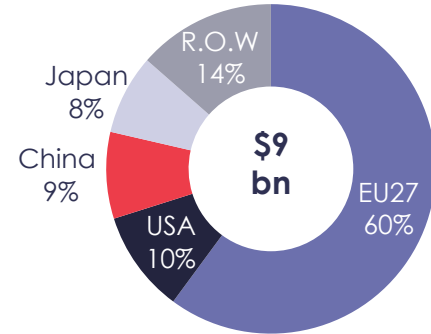
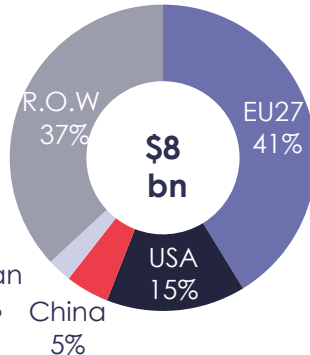
UK Imports



Climate Goods

Net exports=
-\$1bn

(renewable energy,
electric vehicles, energy
storage,
energy efficiency)



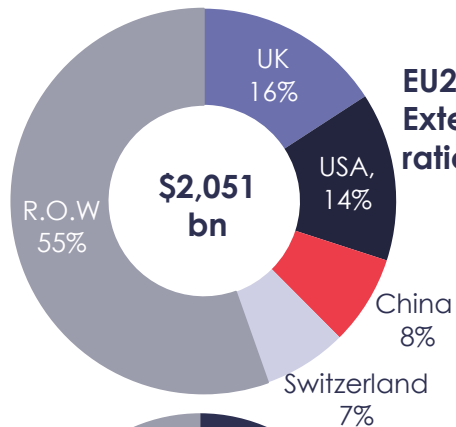
Source: Calculated from BACI database
(average values from 2008-2014)

EU's main trade partners (goods only)

All Goods

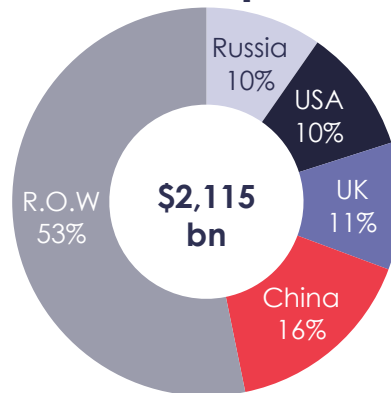
Net exports=
-\$64bn

EU27 Exports



EU27 Internal to External trade ratio: 57%: 43%

EU27 Imports

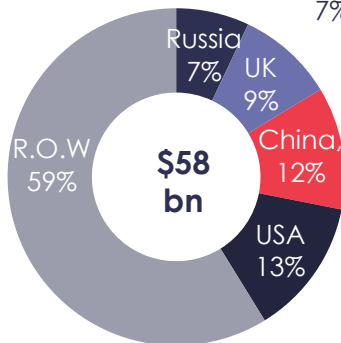


EU27 Internal to External trade ratio: 57%: 43%

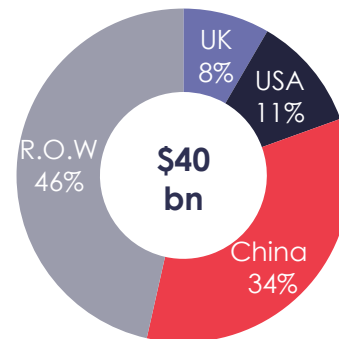
Climate Goods

Net exports=
\$18bn

(renewable energy, electric vehicles, energy storage, energy efficiency)



EU27 Internal to External trade ratio: 49%: 51%



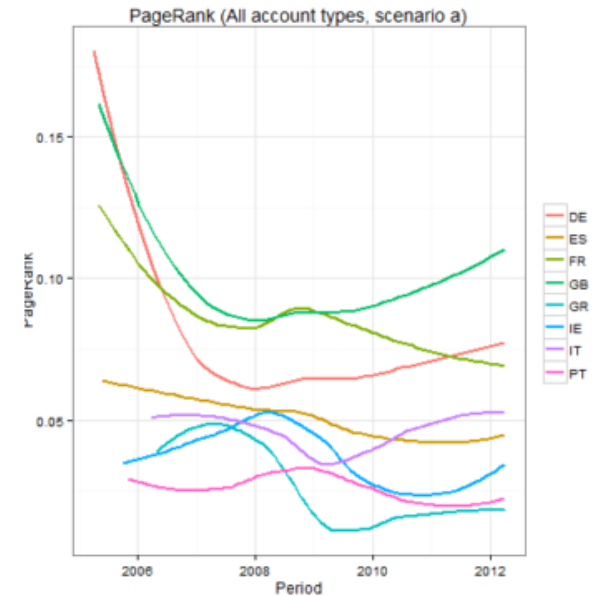
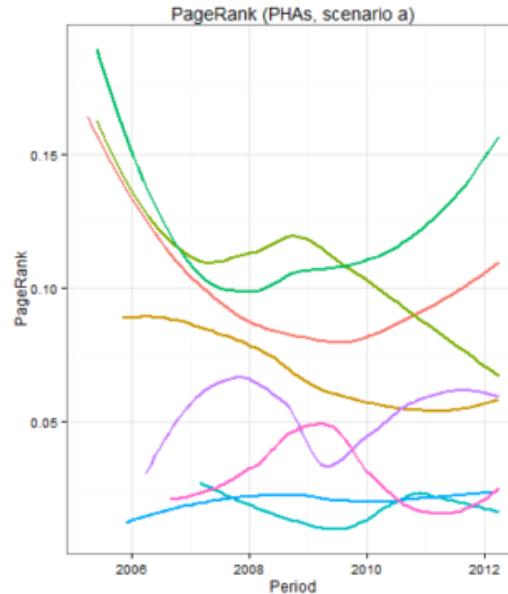
EU27 Internal to External trade ratio: 58%: 42%

Source: Calculated from BACI database (average values from 2008-2014)

UK as a trading capital for the EU ETS

- UK financial intermediaries are the most active traders in the EU ETS across all transaction types, incl. issuance, transfer, surrender (left-hand chart)
- This makes UK traders (intermediaries and compliance buyers/sellers) the most central actors in trading EU ETS permits (right-hand chart)

Importance of different players in countries for EU ETS transactions



Source: Borghesi & Flori (2016)

Climate research collaborations

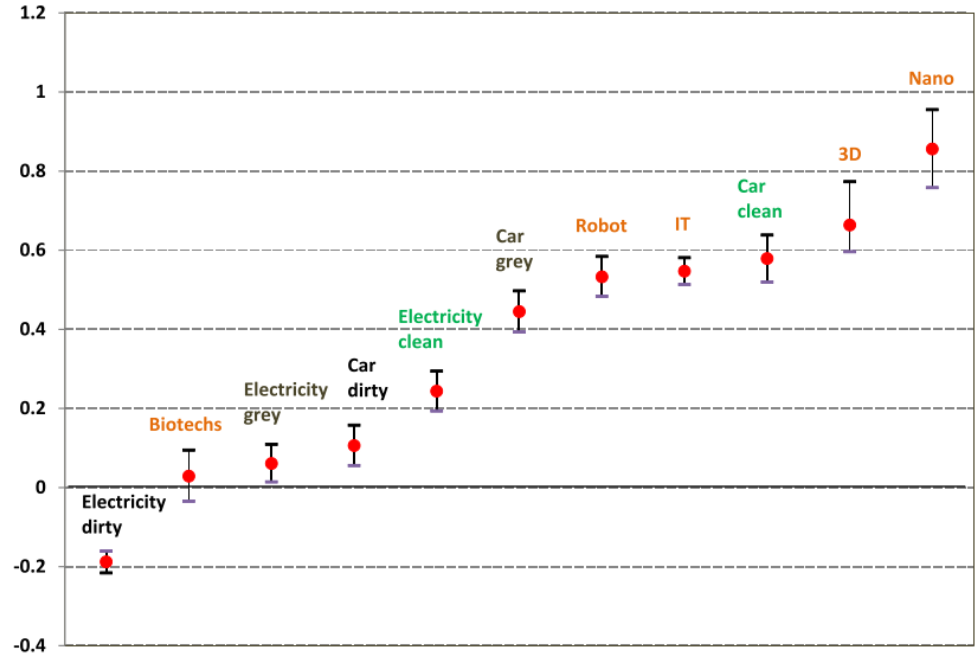
EU Horizon 2020 funding for 2017: €400 million dedicated to research and innovation in Climate Action, Environment, Resource Efficiency and Raw Materials

How central is the UK to EU research collaborations in climate technologies?

Low-carbon innovation has high potential for economic growth

- Low-carbon innovation provides higher spillovers than its high-carbon counterparts
- Low-carbon innovation has spillover potentials that are similar to other high yield sectors

Clean, grey, dirty, and radically new technologies vs. all other technologies (by PageRank index)

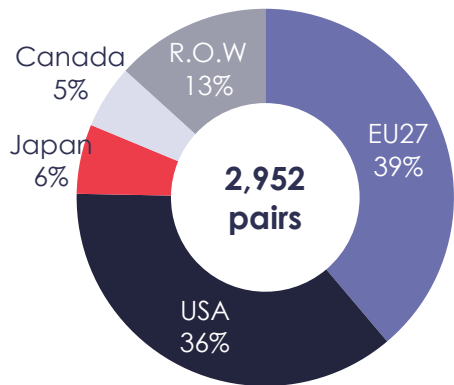


Source: Dechezleprêtre, Martin, & Mohnen (2016)

Who are the most important partners for UK climate research?

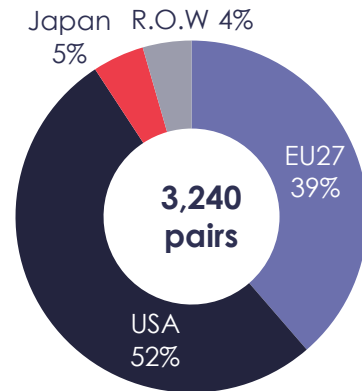
Solar

National to International Partner Ratios:
80% : 20%



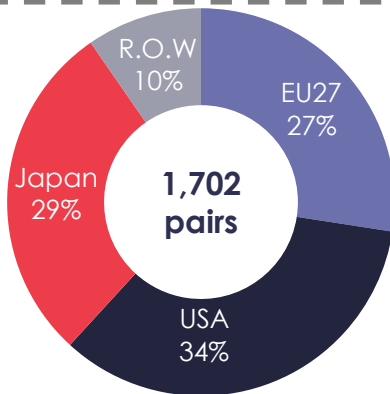
Vehicles

National to International Partner Ratios:
79% : 21%



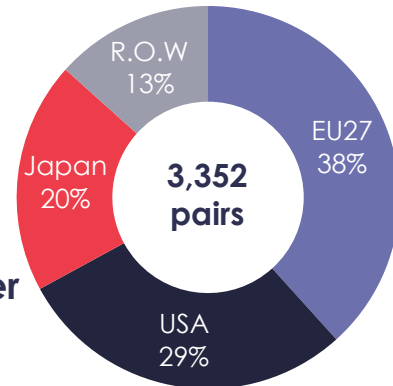
Energy Storage

National to International Partner Ratios:
80% : 20%



Energy Smart Technologies

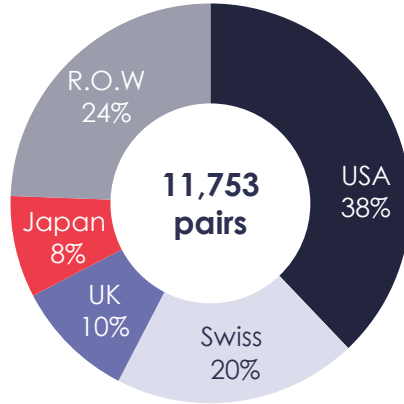
National to International Partner Ratios:
85% : 15%



Who are the most important partners for EU27 climate research?

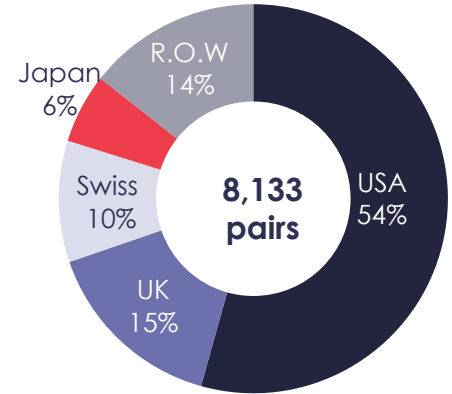
Solar

National to International Partner Ratios:
93% : 7%



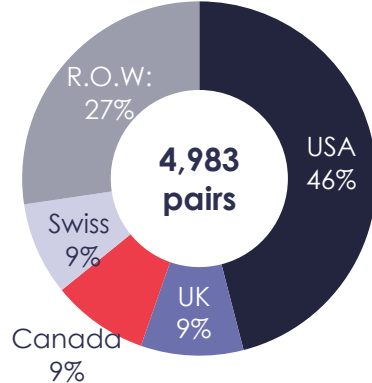
Vehicles

National to International Partner Ratios:
96% : 4%



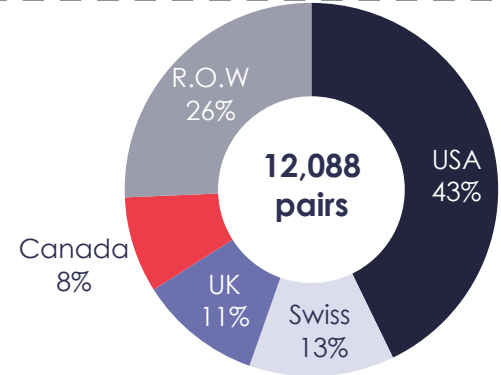
Energy Storage

National to International Partner Ratios:
95% : 5%



Energy Smart Technologies

National to International Partner Ratios:
94% : 6%



Source: Calculations from EPO

Future research questions

- What are the **carbon pricing** options for the UK post-Brexit?
 - Setting up on ETS or just a carbon tax?
- How embedded is the UK in European **clean tech innovation**?
- What is the role of the UK and the City in **climate finance**?
- What are the **competitiveness** effects of climate policy with & without Brexit?
- Should the UK adopt EU **efficiency standards** (eg on appliances, cars) or set its own rules?
- What are the implications of Brexit for **adaptation** to climate risks (e.g. in agriculture policy)?

Thank you

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