

Issue

- All policy-making is a political process, where interest groups form coalitions to deploy ideas to try to influence outcomes, constrained or enabled by institutions (e.g. Sabatier and Weible 2014)
- Policy outcomes distribute resources and powers, and through path-dependence help create pathways of technological change and innovation
- A range of actors have diverse interests in industrial decarbonisation policy, including: foundation industries; new technology firms; fuel, technology and infrastructure providers (e.g. in areas such as CCUS, hydrogen, bioenergy); consumers, taxpayers and workers, both in general and in particular regions.
- In theory, government seeks to balance these interests in designing policy; in practice policy will also reflect the political importance of different interests and how organised and effective interest groups are in putting their views

Objectives

- To analyse how interests, ideas and institutions in the UK ID policy process have shaped goals, approaches and instruments, including the Cluster Mission, and compare the UK approach with European competitor countries with differing institutional contexts
- To recommend institutional reforms if and where needed

Outputs

- Research report
- Policy brief
- Launch event
- Two articles in peer-reviewed journals

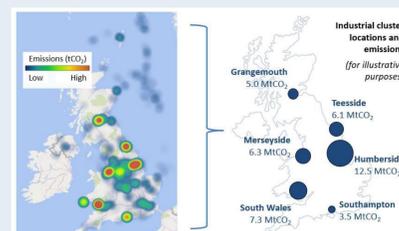
Two workstreams

The evolution of the industrial decarbonisation cluster approach

- Clusters play a key role in ID strategy over the 2020s
- This workstream examines the origins and evolution of the cluster approach, looking across two dimensions
- Linkages across policy issues
 - Linkage across issues (e.g. climate policy to industrial policy) by 'policy entrepreneurs' and politicians shapes the nature of policies
 - We have identified 5 relevant policy areas that have been linked to produce the industrial decarbonisation clusters approach: climate policy, energy policy, industrial policy, innovation policy and regional policy (Figure 1a)
 - This process built on several earlier linkages: energy and climate policy from the late 1990s; climate, industrial and innovation policy from 2016 (Clean Growth Strategy, Industrial Strategy), and regional, industrial and innovation policy from 2018 onwards
- Linking processes have also been affected by macro-political developments, including Brexit
- Clusters as a novel UK approach, but research from innovation and industrial symbiosis literature suggests certain potential challenges (Vernay et al 2018; Kosmol and Otto 2020)

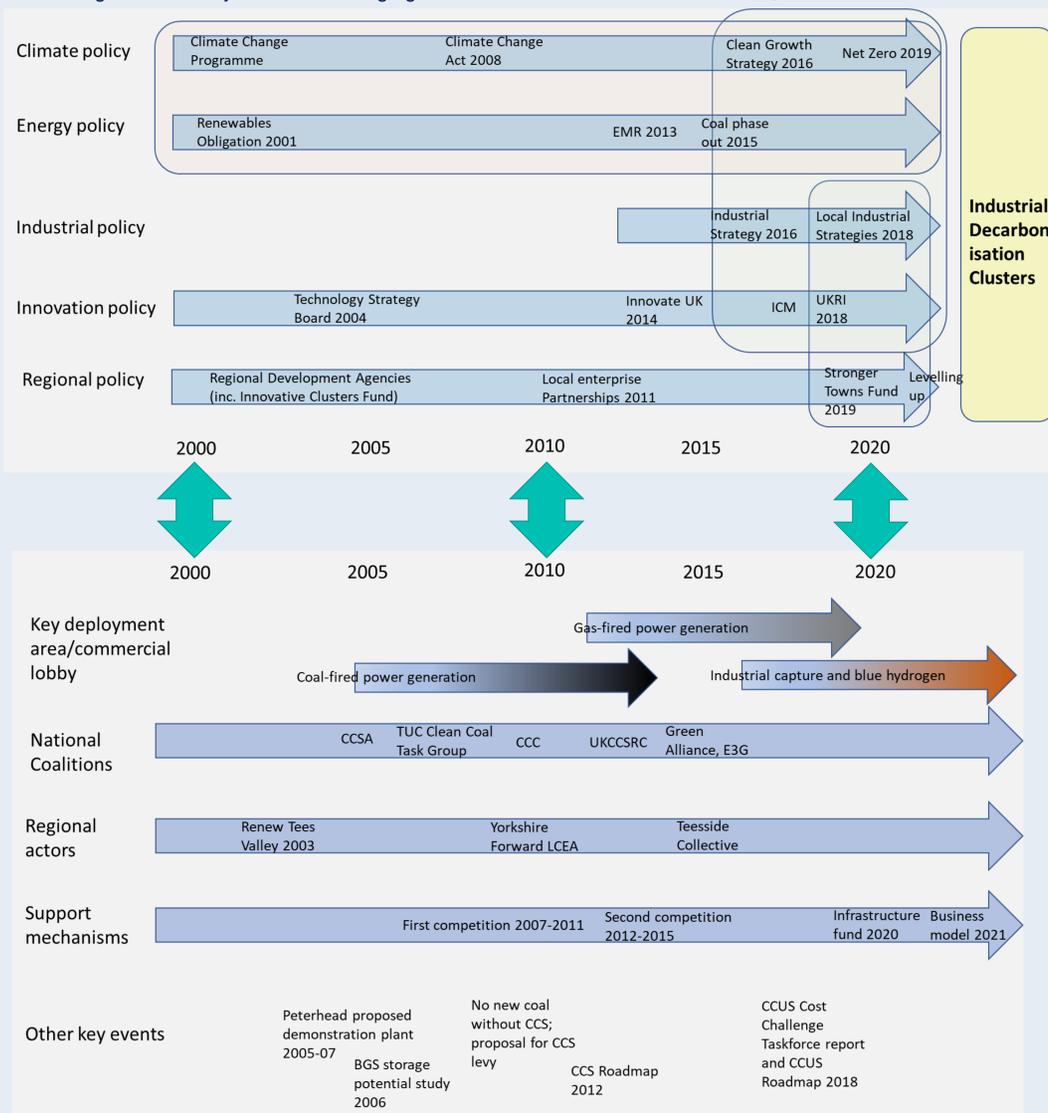
Politics of the industrial decarbonisation strategy

- Industrial decarbonisation is not a high salience issue for the public as a whole, and so is not 'political' in a conventional sense
- However, the Industrial Decarbonisation strategy makes choices for action over the 2020s that distribute resources and attention across a number of dimensions that may involve political risk
- We are examining actor interests, coalitions, deployment of ideas and the role of institutions in four dimensions



- #### 1. Across clusters
- The distribution of resources across clusters, involving regional and party politics
 - Risk of disengagement from clusters outside the sequencing process; party politicisation of industrial decarbonisation policy

Figure 1a: Policy areas and merging for industrial decarbonisation clusters, 2000 to 2020



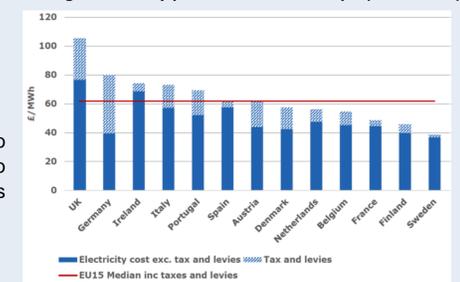
2. Clusters vs dispersed

- The distribution of resources across clusters and dispersed sites
- Strategy focuses resources in clusters over 2020s
- Risk of disengagement from companies and other actors in dispersed sites, industries mainly in dispersed sites, e.g. cement, ceramics, glass

3. Across fuel switching

- The distribution of resources and attention across alternative fuels, i.e. hydrogen (including blue and green); electrification and biomass
- Electrification sensitive to costs relative to competitors, highly salient for EILs, and to extent to which costs moved to households and taxpayers
- Implications for fuel pathways (and link to clusters vs dispersed) and possible mass politicisation

Average electricity prices for EILs in Europe (2016-2020)



4. Supply side vs demand side (resource efficiency)

- Distribution of resources across supply side decarbonisation vs demand side, including resource efficiency (recycling, modular design, re-use, products to services etc.)
- Both involve uncertainty, and market and coordination failures
- More organised interests on supply side
- Institutional split between BEIS and DEFRA (Resources and Waste Strategy)
- Risk of under-utilising demand side potential (Allwood et al 2011)?

References

- Allwood et al (2011) Material efficiency: A White Paper. *Resources, Conservation and Recycling* 55, 362-381
- Ercan and March (2016). Qualitative methods in political science, in H Keman and J J Woldenorp (eds) *Handbook of Research Methods and Applications in Political Science*. Edward Elgar, Cheltenham, pp. 309-322.
- Beach and Pedersen (2013) *Process-Tracing Methods: Foundations and Guidelines* U. Mich. Press
- Sabatier and Weible (2014) *Theories of the Policy Process* Routledge
- Vernay et al (2018). Can the government create a vibrant cluster? Understanding the impact of cluster policy on the development of a cluster. *Entrepreneurship and Regional Development* 30, 901-909.
- Kosmol and Otto (2020). *Implementation Barriers of Industrial Symbiosis: A Systematic Review*. Proceedings of the 53rd Hawaii International Conference on System Sciences.

Figure 1b: CCUS technology advocacy coalitions and policy, 2000 to 2020

- Unlike earlier clusters in 2000s regional policy, industrial decarbonisation clusters have a core component of shared infrastructure, i.e. CCUS and hydrogen, with blue hydrogen also requiring CCUS
- History of CCUS important for understanding the current approach (Figure 1b)
- Policy learning (from point-to-point to network; CfD auctions for revenue mechanism)
- Core technology advocacy coalition, with changing commercial deployment context and actors - coal-fired power generation to gas-fired power generation to industrial decarbonisation and blue hydrogen
- Methodology and data sources
 - Focus on complex relationships between actors in institutions deploying ideas and involving the use of power, so a qualitative case study is an appropriate methodological approach (Ercan and Marsh 2016)
 - 'Process tracing' methodology (Beach and Pedersen 2013) seeking to identify *entities* that undertake *activities* that lead to *outcomes* that in a counterfactual would not plausibly otherwise happen



Team

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