



Introduction

Government departments responsible for energy and climate policy around the world, partly informed by low carbon energy system projections, have demonstrated support for development of carbon capture, use and storage (CCUS). However, as evidenced by the 2015 withdrawal of financial support for the UK CCS Commercialisation Competition, it has proven challenging to convince national treasuries of the merits of public support. For those budget holders, CCS may essentially be seen as a complex, expensive pollution control system that requires extensive up-front investment and adds to production costs.

Our work at the Strathclyde Centre for Energy Policy (CEP) aims to move consideration of and narrative development around CCUS into the public policy domain that encompasses not only energy and climate, but also economic and social policies. An initial stage of our work culminated in 2018 through a series of policy briefing and research activities that had important impacts at Scottish, UK and European. This was through our evidence to the [UK CCUS Cost Challenge Taskforce](#) (see p.24 and recommendation #9 focussing on the need to assess value of CCUS to the wider UK economy) and our contribution to the [2019 Zero Emissions Platform report on 'The Role of CCUS in a Below Two Degrees Scenario'](#). The former fed through to consideration of CCUS infrastructure in an industrial cluster context in the [UK Government's 2018 CCUS 'Action Plan'](#).

An urgently needed focus on how CCS can deliver value in a political economy context

Our focus is to build on our previous 'economic multiplier' analyses (how many jobs/how much GDP across the wider economy is ultimately supported by the direct activity of any one industry?) for [Scotland](#) and the [UK](#), and builds on work we have conducted to develop a [political economy narrative](#) around CCUS. This new UKCCSRC project involves developing methods for more in-depth consideration of the interactions and interdependences between different industries in high value clusters, and considering how this value may be impacted by the need to pay for industrial carbon capture. Taking Scotland, and the Grangemouth cluster therein, as an initial

applied example, we develop new methods of accounting for and reporting the nature of high value chains activity that support jobs and GDP via up- and down-stream supply chains within and beyond the geographical boundaries of the cluster. We develop methods to consider how the introduction of CCUS in any one industry may impact the strength of domestic jobs and GDP multipliers supported both by that industry and by others.

Research questions

The project involves the following two core applied research questions:

1. What level and nature of economic value via high value-added jobs is currently generated for the Scottish and UK economies as a result of

specific industrial activities present in the Grangemouth cluster, and what is the extent of interdependency of this value generation across different activities within this and the wider Scottish industrial cluster?

2. How and to what extent may the sustainability and further growth of this activity and the value it delivers be impacted by the deployment of CCUS project(s) at the site?

Expected impact

A crucial element of this project is our continued focus on developing rigorous and transparent methods of wider economy analysis that are trusted by key decision makers such as HM Treasury and devolved governments within the UK. The work constitutes an early stage in a fuller planned

programme of public policy-engaging research involving economic modelling and simulation methods to consider the political economy role of CCUS infrastructure in enabling the transition to a sustainable zero carbon economy. Building on significant impact foundations from previous work, our proposed research aims to develop a solid and scientifically rigorous base for effective policy design and evaluation processes around CCUS and support development of political economy narratives for CCUS at home and abroad. As well as adding to (and driving) the momentum building around understanding CCUS in this way, the proposed research will have specific impact on policy developments at Scottish, UK and European levels. Specifically, we intend that it will impact the planned development of CCUS Delivery and Investment Frameworks in 2019, as set out in the CCUS Action Plan.

Throughout this project, an active programme of engagement and communication is planned, and all outputs will be available through the CEP and UKCCSRC websites. But we do welcome stakeholders to get directly in touch with the team, by emailing us at cep@strath.ac.uk



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