10th March 2021

Centre for Energy Policy Response to the CCUS Cluster Sequencing Consultation

The Centre for Energy Policy (CEP) was established in 2014. CEP, led by Professor Karen Turner as Centre Director, is multi-disciplinary hub that facilitates research, knowledge exchange and policy engagement on energy and climate policy issues from a wider public policy perspective. Uniquely, CEP offers a 'wider view' of energy and climate policy, going beyond technology-driven analyses to consider the wider economic, social and political context of low carbon transitions, and the decision making that supports and enables those transitions. In particular, CEP has expertise in modelling for wider economy scenario analyses to investigate how different actions and options are likely to impact across the wider economy, how and where value is generated and to which sectors and regions it accrues. CEP's research and stakeholder engagement work is enabled by a range of research council, industry and philanthropic funders, with the core body of our current activity supported by the Bellona Foundation with funding from the Children's Investment Fund Foundation.

We welcome the publication of the CCUS cluster sequencing consultation and thank BEIS for the opportunity to respond. Here we provide high level comments that **largely relate to question 11 in the consultation around assessing economic benefits of cluster developments.**

CEP economy-wide modelling of industrial decarbonisation with CCUS

- Funded by the Children's Investment Fund Foundation and delivered in partnership with the Bellona Foundation, the Centre for Energy Policy is undertaking a 2 year research programme (ending Nov. 21) to understand the wider economy impacts and opportunities of industrial decarbonisation with a focus on CCUS. We have engaged with a number of teams at BEIS around the project and explored how our economy wide computational general equilibrium (CGE) modelling and political economy analysis can be used to support the quickly evolving policy environment for CCUS.

- We believe that our analysis will be able to support policy development at BEIS related to cluster sequencing. For example, in the project we have already a stream of work to analyse the wider economy impacts of applying carbon capture from a regional sequencing perspective (and in a manner that aligns with initial oversizing/utilisation building/revenue gap issues set out in the latest iteration of the CCUS Business Models document). In practical terms, this is motivated by the challenge of just how much investment the wider economy model can take in any one scenario simulation or 'shock'. Here we are working with 'bottom up' (CAPEX and OPEX) data on costs for different models of CCUS deployment (where we are initially considering a 'build it and they will come' oversized industry). This involves developing scenarios to invest and bring on-line a new T&S industry one cluster at a time and consider the sectoral and wider economy impacts at UK level across time of each and build to a cumulative/aggregate picture. We are currently focussing on the challenge of closing the 'revenue gap' in different ways consistent with those proposed in the Dec. 20 iteration of the CCUS Business Models document. We are also considering the potential role of the export of T&S services from the new industry, both in helping close this gap and in terms of a potential export base in evolving the industry more generally. Going forward we are keen to engage with the teams at BEIS responsible for developing cluster sequencing policy to understand how our analysis can best support policy development.

Assessing and understanding the economic benefit of CCUS clusters

- We welcome the inclusion of economic benefits as an assessment criteria for cluster proposals. While this will importantly allow BEIS to consider the 'size of the prize; associated

with economic activity in each cluster, we reiterate the importance of understanding how impacts on indicators measuring the value of employments, supply chain development and the wider economy more generally will be driven and transmitted. Such analysis requires the use of wider economy modelling – such as the CGE modelling undertaken at CEP – to understand how individual cluster activity will truly impact on the economy at a national level. Here issues such as competitiveness loss, the opportunity around exports and the impact on the labour market and public budgets can be better understood. This is crucial considering that supporting industrial clusters to decarbonise is a public policy challenge. Again we look forward to further engaging with BEIS and discussing how CEPs modelling and analysis can support robust and holistic policy making. We are also currently engaging with BEIS officials regarding the identification and measurement of potentially useful metrics to assess the economic benefits criteria.