

## Centre for Energy Policy response to the Just Transition Commission Call for Evidence

30<sup>th</sup> June 2020

### Introduction to the Centre for Energy Policy

The Centre for Energy Policy (CEP) was established in 2014 and is a multi-disciplinary hub that facilitates research, knowledge exchange and policy engagement on energy and climate issues from a wider public policy perspective. The Centre is led by Director Professor Karen Turner, who we should note is also a serving Just Transition Commissioner. However, this submission is made by the wider team at the Centre.

Uniquely, CEPs developing research foundation offers a ‘wider view’ of energy and climate policy, going beyond technology-driven analyses to consider the wider economic, social, political and, crucially, public policy context of decision making. In particular, CEP has expertise in multi-sector economy-wide modelling for political economy and public policy scenario analyses to investigate in a holistic manner how different actions and options are likely to impact across the wider economy, how and where value is generated and to which actors, sectors and regions it accrues.

This evidenced based approach is crucial in understanding the implications of certain policy actions, especially in the context of the ‘Just Transition’. We note that research related to industrial decarbonisation that underpins parts of this submission, is funded by the Children’s Investment Fund Foundation through the Bellona Foundation.

**In this submission, we explore three key opportunities that CEP has been resourced to conduct research on, and discuss the challenges and implications for a Just Transition in delivering each (but with lessons and insights emerging that will be applicable, and should be further explored/researched, in a wider set of contexts):**

1. Enabling and realising energy efficiency gains in Scotland could deliver positive economy wide impacts and help to deliver a Just Transition.
2. Risks and long-term opportunities exist for Scotland’s highly skilled and experienced oil and gas workforce and supply chains.
3. A key challenge remains in how to support the decarbonisation of Scotland’s energy intensive industries whilst retaining their activity, jobs and economic contribution.

### What do we mean by a ‘Just Transition’?

Giving attention to (a) questions of who ultimately pays for actions (be it direct or indirect), and (b) impacts on jobs, the quality of jobs, and the level and distribution of real income, earning and spending power impacts in different types of households in different parts of the UK is crucial in considering a ‘just transition’.

However, the ‘just’ transition is not just about considering the distribution of impacts of different decarbonisation actions. Rather, it must create and reflect the societal permission from the people of the UK for the chosen approach(es) to delivering net zero ambitions. That is, people may care about and rank addressing climate change as a priority, but securing their own real incomes, earning and purchasing power, and ability to care for their families will inevitably take priority.

For this reason, addressing the need for and building genuine and far-reaching consensus around a ‘just’ transition requires careful consideration and consultation. Issues around ‘who pays’ for decarbonisation actions and sustaining (and growing) high quality jobs will be crucial determinants in this regard, and this is what motivates the economy-wide focus that drives our research and this submission.

## Key high-level points for delivering a Just Transition

Based on our research foundation and expertise, the Centre for Energy Policy has developed a number of key messages which relate to the delivery of a Just Energy Transition:

1. **Understanding who really pays, how and when** and what gains can be used to balance this is fundamental
2. We need to find pathways that allow us to sustain and **grow our prosperity in an equitable way**
3. Finding options and pathways that can deliver **near term economic returns** is crucial – especially, but not exclusively, in a post Covid-19 pandemic economic environment
4. **‘Off-shoring’ is not the answer** if it only shifts emissions, jobs and GDP overseas
5. Getting to Net Zero is a **societal and public policy challenge** more than it is a technological one

## Response to Call for Evidence Questions

### Question 1. Full name or organisation’s name

Centre for Energy Policy, Department of Government and Public Policy, University of Strathclyde.

### Question 2. Does your response relate to a specific sector?

This response focusses on the economy wide impacts of a number of net zero actions. Specifically we discuss the opportunities and challenges of delivering

1. Domestic energy efficiency improvements
2. A transition in the oil and gas sector
3. Industrial decarbonisation

In our response to question 7 we also explore how the roll out of electric vehicles could enable a shift in how we deliver our transportation needs that has the potential to deliver net economy wide benefits. We set our analysis in the context of required investment in electricity network upgrades, with a key issue emerging in terms of how a combination of rising demand and investment cost recovery may impact electricity prices faced by low income households in particular.

### Question 3. What do you see as the main economic opportunities and challenges associated with meeting Scotland’s climate change targets?

1. When considering the economic opportunities of actions to meet climate targets, the key insight of our research concerns the need to broaden attention from technology and cost considerations. Instead, there is a need to focus on the potential for low carbon initiatives to unlock, sustain and increase value in different parts of the economy as we transition to a low carbon future, but with value propositions requiring full consideration of how and on whom costs may ultimately (direct and/or indirectly) land, and in what timeframes.

**Enabling and realising Energy efficiency gains in Scotland could deliver positive economy wide impacts and help to deliver a Just Transition.**

2. The Centre for Energy Policy has completed a wide programme of research that considers the wider economic impacts of both enabling and realising energy efficiency gains at a Scottish and UK level. In 2018, we published a policy brief investigating the [‘Potential wider economic impacts of the Energy Efficient Scotland \(EES\) programme’](#).<sup>1</sup> There **we found that**

EES could ultimately deliver a cumulative GDP gain of up to £7.8bn (2015 prices) associated with around 5,000-6,000 full-time equivalent jobs created and sustained into the long term. The source of sustained wider economy gains is real household income and spending gains enabled by retrofitting actions conducted under EES.

3. Importantly in a Just Transition context, the economy wide gains noted in our analysis of the EES programme transpire in the context of two important assumptions. First, that 20% of the total £8billion spend is directed to low income households through Scottish Government Grants. Second, that the spending allows low income households to realise efficiency gains that reduce the energy required to heat the homes by 13.2%. Our simulation results suggest that the 20% of households with lowest incomes will ultimately benefit from a 3.9% reduction in spending on energy coupled with a 0.8% boost in real incomes. Thus under these assumptions, the Energy Efficient Scotland programme can be expected to contribute to reducing fuel poverty and delivering a Just Transition. **A key challenge therefore is to ensure that the spending commitments to low income households modelled are delivered, and that the consumer buy in and trust in the Energy Efficient Scotland programme is created to ensure that the energy efficiency gains modelled are truly realised. Another key challenge lies in developing retrofitting supply chains that secure wider economy benefits emerging over time, not only in the Scottish economy, but particular regions therein.**

4. Our recent paper – prepared through a UKERC project - also highlights ‘[The Potential Impacts of Brexit on Energy Efficient Scotland Funding](#).’<sup>ii</sup> Here, the uncertainty of securing private loan finance in particular is explored as a key risk in realising the economy wide benefits of the programme with the crucial action being to ensure that originally planned levels of funding can be maintained.

#### **Risks and long-term opportunities exist for Scotland’s highly skilled and experienced oil and gas workforce and supply chains.**

5. Key questions remain around the future of the oil and gas sector in Scotland. Opportunities for evolution rather than decline of this industry exist both in the context of a maturing geological basin, and the potential for the sector (and its workforce) to transition to operate in a net zero economy by 2045. During previous contractions in the oil and gas industry, the north-east region of Scotland (in and around Aberdeen) has been particularly hard hit. This raises questions of how a Just Transition can be delivered for this region in particular but, with supply chains extending throughout Scotland and the wider UK, the challenge is not a region-specific one. Our research has explored the importance of supporting the transition of the UK oil and gas industry, which is a crucial focus to take given the need to understand how the transition could potentially impact the Scottish economy and workforce. In our work ‘[Reframing the value case for CCS](#)’<sup>iii</sup> funded by the Crown Estate Scotland, we focussed on the need to sustain and transition the approximately 44,000 direct and indirect Scottish jobs currently linked to oil and gas and other related industrial sectors, with the largest share of these (around 26,000) located in the on-shore support industry.

6. In subsequent work sponsored by Scottish Enterprise, we analysed the how the challenge of transitioning the oil and gas industry and supply chain transition could be viewed as the [economic and societal opportunity of developing a large-scale CO<sub>2</sub> management industry in Scotland](#).<sup>iv</sup> In short, establishing a large-scale CO<sub>2</sub> management industry – or perhaps a broader Marine Energy industry - could **involve alternative and new uses for the capacity, infrastructure and workforce traditionally associated with Scotland’s oil and gas industry. Our initial estimates suggest that by 2030 anywhere between 7,000 and 45,000 UK jobs** (depending on levels of demand for CCS services) could ultimately be associated with Scotland **securing 40% of the carbon storage element of a European CO<sub>2</sub> management**

**market.** By 2050 this could rise to **between 22,000 and 105,000 jobs**, and more as the industry extends to low carbon fuel supply. **Therefore, a key challenge for delivering a Just Transition is to ensure that the opportunities described above materialise over the appropriate time scales.**

**A key challenge remains in how to support the decarbonisation of Scotland's energy intensive industries whilst retaining their activity, jobs and economic contribution**

7. The UK's regional industry clusters, generally centred around high value manufacturing, are key hubs of local economic activity and an important part of the economy that support wider supply chain activity, including thousands of jobs, that ripple out between and across regions. However, a key question remains around how these sectors can decarbonise in line with net zero targets whilst continuing to deliver a significant high value economic contribution. At the very least, this involves sustaining competitiveness, but with the risk therein arising from additional capital *and* operating costs involved in reducing emissions being one of potential off-shoring of jobs, GDP *and* emissions. We have begun a programme of research funded by the Bellona Foundation to look at how this could be achieved.<sup>v</sup>

8. Especially in the context of a 'Just Transition' delivering on low and net zero-carbon ambitions must be done in a way that does not make the costs of 'doing business' in the UK uncompetitive or even prohibitive, and in a way that the citizens of the UK understand and support. In our policy brief [State Aid or Subsidy Control: Ensuring Prosperity in the Race to Net Zero](#)<sup>vi</sup> we explore the 'polluter pays' concept and analyse the economic impacts of applying CCS to the petrochemicals industry in Scotland. We find that the reduction in capital efficiency (more costs to produce the same output) would trigger negative competitiveness impacts on export prices (around 2/3rds of the UK petrochemical industry's output is exported). However the greater risk may be that activity is simply off-shored and the economic contribution and jobs associated with that sector lost<sup>vii</sup>.

9. We find that by introducing a government supported subsidy, which protects industry from the additional costs of decarbonising, the wider economic impact can be reduced, with all jobs in the petro chemicals industry protected. However while this tax payer funded subsidy limits the wider GDP contraction, it actually leads to higher overall job losses and raises questions about how jobs across all values can be protected.

**Thus, there is an urgent need to consider the best mechanism to support industrial decarbonisation in the UK in a way that facilitates emissions reductions and helps to deliver a Just Transition.**

**Question 4. What do you think are the wider social (health, community etc.) opportunities and challenges associated with meeting Scotland's climate change targets?**

10. While the research conducted at the Centre for Energy policy does not focus on health or community impacts, below we give a brief overview of how opportunities outlined in this response may have wider societal impacts.

11. The opportunities outlined in this response are known to be associated with health and societal benefits. For example, improving the energy efficiency of Scotland's building stock could have positive mental and physical health impacts for those whose homes are subsequently easier to heat. Where energy costs can be reduced through energy efficiency, the ability of households to spend their money on other things will have positive impacts on the local and national economy and may have wider positive effects on beneficiary households that are not considered in our analysis.

12. As described above, Scottish industrial clusters are key hubs of local economic activity and an important part of the wider economy that support supply chain activity. If actions can be taken to reduce emissions from these key industries while allowing them to sustain their economic contribution the impact on the local economy will be significant with local jobs and prosperity retained. This may have wider health and societal impacts that are not considered in our analysis.

**Question 5. What would a successful transition to net-zero emissions look like for your sector/community?**

N/A

**Question 6. What actions do you think the Scottish Government should take to manage the opportunities and challenges referenced above?**

13. Below we summarise a number of actions that could be taken by the Scottish Government to manage the opportunities and challenges noted above and aid a Just Energy Transition. However, we note that, in order to ground our recommendations in research and analysis actually conducted to date, we are only able to focus on a subset of potential actions. In this regard, a wider recommendation for UK national and devolved governments, and research funding bodies, is the urgent need to support research into the potential economic, societal and policy consequences of possible actions and combination of actions. That is, we believe that economy-wide impact analyses of potential consequences and implications of decarbonisation solutions should be made in order to properly assess where and when net costs and benefits arise and to assess whether they can be delivered in a socially equitable way.

- **The Scottish Government should ensure the Energy Efficient Scotland programme is delivered with the appropriate funding, incentives and protections.** This is crucial to ensure that the programme meets its ambitions of reducing emissions from Scotland's buildings sector while also reducing the prevalence of fuel poverty. Especially in the context of a Just Transition, the Scottish Government should ensure that Government grants are directed at those least able to pay - who may be most in need of energy efficiency improvements. Where possible the Government should also do everything in its power to secure the availability of private loans. These components are crucial to ensure that the economic benefits of both delivering a retrofit programme and that the subsequent benefits to households and the wider economy are realised.
- **The Scottish Government should work with the UK Government to understand how policy actions taken at a UK level will impact the delivery of a Just Transition in Scotland.** Specifically the Scottish Government should continue to work with the UK Government and the energy regulator Ofgem to understand how actions that impact the price of electricity will impact fuel poverty levels in Scotland. This is crucial to ensure that policies that could unlock wider economic benefit, such as the roll out of Electric Vehicles (discussed below under question 7), are delivered in an equitable way. A key question for policymakers will be whether any action can be taken to prevent or balance upward pressure on electricity prices caused by the delivery of net zero actions.

- **The Scottish Government should work with the UK Government to deliver an industrial strategy that allows Scotland and the UK to meet net zero targets whilst securing the activity, jobs and wider economic contribution from Scotland's key industrial sectors.** This is crucial to delivering a Just Transition and ensures that we do not simply import products we still need and use from countries that may have less stringent climate change targets. In relation to the oil and gas industry in particular, action should be taken to ensure that the skills and expertise of the large existing workforce can be utilized in the delivering of a net zero economy. This may be especially important as the industry transitions to provide low carbon services such as carbon storage and hydrogen production/storage.
- **Action should be taken to ensure that domestic supply chains are utilised as far as possible in the delivery of net zero actions.** This will help to ensure that the wider economic contribution of net zero activity is realised, and will have significant implications for the delivery of a Just Transition. For example, the recent leasing round of offshore wind 'Scotwind'<sup>viii</sup> has been launched by Crown Estates Scotland and asks all bidders to submit a 'Supply Chain Development Statement'. Crown Estates Scotland should ensure that plans set out in these statements are delivered upon to ensure that the utilisation of Scottish supply chains and the economic benefits this will bring is realised.

**Question 7. Are there specific groups or communities that may be, or feel that they may be, adversely affected by a transition to a net-zero carbon economy? What steps can be taken to address their concerns?**

#### **Key challenges and opportunities exist for workers in the oil and gas industry and in Scotland's key manufacturing industries**

14. As noted above our research<sup>ix</sup> indicates that 44,000 direct and indirect Scottish jobs are currently linked to oil and gas and other related industrial sectors. Scotland's regional industry clusters are key hubs of local economic activity and an important part of the economy that support direct jobs and wider supply chain activity. For example the Scottish chemical industry, largely based at Grangemouth, supports circa 6600 FTE jobs.<sup>x</sup> A key question remains as to how the jobs, economic contribution and broad prosperity that these industries provide can be sustained as the country transitions to meet net zero targets and whether the emissions from these sectors can be reduced in an economically sustainable way through the application of Carbon Capture and Storage for example.

#### **Consideration should be given to low income households who may be disproportionately affected by an increase in electricity prices caused by the need to meet climate change targets.**

15. In work by the centre for energy policy which explored '[Who Ultimately Pays for and Who Gains from the Electricity Network Upgrade for EVs?](#)'<sup>xi</sup> we investigate how the predicted rapid expansion in electric vehicle (EV) ownership over the next decade may impact the wider economy. We focussed on how this will shift demand away from vehicles fuelled with petrol and diesel and will require upgrades to the electricity network itself. While reporting the potential for wider economy gains as the EV rollout is delivered, our research indicates that this will carry significant costs that are ultimately paid by consumers both through their energy bills and the costs of other goods and services where electricity prices impact

production costs. Our results suggest that costs to consumers and the wider economy can be minimised if investment activity is planned and spread evenly in the years ahead of EV demand fully materialising. However as noted above, the risks and uncertainty involved should be set against the likelihood that the net outcomes enabled by the EV rollout **may be positive due to a broad set of economic benefits, including up to 3,000 new jobs associated with 20% EV penetration by 2030.**

**16. A key question remains as to how investment in the electricity network (whether to facilitate EVs or the electrification of heat), and the subsequent demand driven increase in the price of electricity will effect low income households and real poverty levels in these groups.** This may be particularly important for households who rely on electricity for heating where fuel poverty levels are at 43%<sup>xii</sup> and the potential positive impacts of energy efficiency gains could be constrained by any increase in electricity prices. To ensure a Just Transition and equitable wider economy expansion, policy makers should explore how these groups could be protected from the impacts of electricity price increases.

**Question 8. Please provide here any other information, evidence, or research you consider relevant to the work of the Commission**

All CEP research publications, policy briefs and blogs can be found at or accessed via <https://www.strath.ac.uk/humanities/centreforeenergypolicy/ourpublications/>

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<sup>i</sup> Potential Wider Economic Impacts of the Energy Efficient Scotland programme Karen Turner, Antonios Katris, Gioele Figus and Ragne Low, May 2018 <https://strathprints.strath.ac.uk/63819/>

<sup>ii</sup> <https://ukerc.ac.uk/publications/brexit-energy-efficiency-scotland/>

<sup>iii</sup> Turner, K., Alabi, O., Low, R., & Race, J. (2019). Reframing the Value Case for CCUS: Evidence on the Economic Value Case for CCUS in Scotland and the UK (Technical Report). Glasgow: University of Strathclyde. [https://doi.org/10.17868/67391https://strathprints.strath.ac.uk/67391/1/Turner\\_etal\\_CEP\\_2019\\_Reframing\\_the\\_value\\_case\\_for\\_CCUS\\_evidence\\_on\\_the\\_economic\\_value\\_case\\_for\\_CCUS.pdf](https://doi.org/10.17868/67391https://strathprints.strath.ac.uk/67391/1/Turner_etal_CEP_2019_Reframing_the_value_case_for_CCUS_evidence_on_the_economic_value_case_for_CCUS.pdf)

<sup>iviv</sup> Turner, K., Race, J., & Sweeney, G., (2019). The economic opportunity for a large scale CO2 management industry in Scotland. Scottish Enterprise. Available at: <http://www.evaluationsonline.org.uk/evaluations/Search.do?ui=basic&action=showPromoted &id=689>

<sup>v</sup> Delivering Prosperity: Industrial Decarbonisation and the Just Transition <https://strathprints.strath.ac.uk/70760/>

<sup>vi</sup> State Aid or Subsidy Control: Ensuring Prosperity in the Race to Net Zero Karen Turner, Julia Race, Antonios Katris and Jamie Stewart, April 2020 <https://strathprints.strath.ac.uk/72094/>

<sup>vii</sup> Turner, K., Katris, A., and de Vries, F.P., (2018). Beyond Carbon Leakage: Off-Shoring of Employment and GDP in Decarbonizing International Supply Chains (Working Paper). Glasgow: University of Strathclyde.

<https://strathprints.strath.ac.uk/66208/>

<sup>viii</sup> <https://www.crownstatescotland.com/media-and-notice/news-media-releases-opinion/green-light-for-multi-billion-pound-investment-in-scotlands-net-zero-economy>

<sup>ix</sup> Turner, K., Alabi, O., Low, R., & Race, J. (2019). Reframing the Value Case for CCUS: Evidence on the Economic Value Case for CCUS in Scotland and the UK (Technical Report). Glasgow: University of Strathclyde.

<https://doi.org/10.17868/67391>

<sup>x</sup> Turner, K., Alabi, O., Low, R., & Race, J. (2019). Reframing the Value Case for CCUS: Evidence on the Economic Value Case for CCUS in Scotland and the UK (Technical Report). Glasgow: University of Strathclyde.

<https://doi.org/10.17868/67391>

<sup>xi</sup> Who Ultimately Pays for and Who Gains from The Electricity Network Upgrade for EVs Karen Turner, Oluwafisayo Alabi, Christian Calvillo, Gioele Figus, Antonios Katris. May, 2019.

<https://strathprints.strath.ac.uk/67741/>

<sup>xii</sup> Scottish Household Condition Survey 2018

<https://www.gov.scot/publications/scottish-house-condition-survey-2018-key-findings/>