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Viewpoint

Phasing out coal, sustaining coal communities? Living with technological decline in sustainability pathways

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ABSTRACT

In this short discussion paper, we discuss recent attention towards the phase out of coal in the UK and associated understandings derived from the field of sustainability transitions. While, the recent focus on destabilisation of unsustainable technologies in this field is important, we raise concerns that there is the risk of insufficient attention regarding the broader implications of such discontinuity processes around the impacts on local coal communities and future prospects of the workforce. We exemplify this, with a discussion of some concerns raised in the responses to the 2016 UK coal consultation, where issues surrounding the future of communities situated near coal facilities have been highlighted. In the final section, we discuss these kinds of issues in relation in the context of the 'just transition' advocated by parts of the trade union movement as well as perspectives on deindustrialisation and community cohesion and identity.

1. Introduction

The need to phase out 'unsustainable' technologies, in particular, the use of coal-fired power stations for electricity production and relatedly, coal mining activities, is becoming an increasingly important policy agenda across Europe (CIED, 2017; DECC, 2016; European Commission, 2015; Schulz and Schwartzkopff, 2015). In the UK, specific announcements have been made to phase out coal by 2025 (DECC, 2016; Littlecott, 2015), where it is increasingly suggested that a more rapid coal phase out will be essential if there is any chance of meeting EU emissions reductions targets (Cuff, 2015). The need to phase out the use of coal-fired power has been recognised as a priority for climate policy in the UK for some time (DTI, 2003). Use of coal is in decline highlighted by UK energy production experiencing its first coal free day since the 1880s (Brown, 2017). Various milestones indicative of momentum towards coal phase out have taken place. This includes the closure of the last operating coal fired power station in Scotland (Macalister, 2016) and the closure of the last operating deep coal mining colliery in the UK. Meanwhile, in 2016 renewables produced more electricity than coal (Darby, 2016), and the UK experienced its first coal free day as a result of the impressive growth of renewables in the electricity generation mix (Brown, 2017).

From the perspective of the burgeoning academic field of 'sustainability transitions' (Augenstein and Palzkill, 2016), which seeks to understand and sometimes motivate transformations towards low carbon futures (Markard et al., 2012), at face value, the UK coal policy is being disrupted by new niche-based technologies (such as renewable energy), signalling the momentum of a 'regime shift' to more sustainable futures (Kemp et al., 1998; Markard et al., 2012). With policy announcements for the deliberate phase out of coal by 2025, UK energy policy also entails policy instruments directed at the more deliberate destabilisation of unsustainable technological trajectories (Turnheim and Geels 2013, 2012; Karltorp and Sandén 2012). Such instruments are increasingly deemed necessary in order to 'accelerate' sustainability transitions (Bromley, 2016).

In this short comment article, we discuss recent attention towards phase out policies and associated understandings of destabilisation and discontinuation derived from the field of sustainability transitions. While the recent focus on destabilisation of unsustainable technologies in this field is valuable, we raise concerns that there is the risk of insufficient attention regarding the broader implications of such discontinuity processes around the impacts on local coal communities and future prospects of the workforce. Indeed, while the starting point of analysis in

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sustainability transitions research is understandably *from above* in terms of an analysis of coal phase out in the overall context of the UK's national climate and energy policy, coal phase out is of course regionally uneven, and has important implications in terms of structural change in the economy, skills jobs, and community livelihood.

Viewing coal phase out *on the ground* examines the final closure of coal-fired power stations as an end stage in the long process of the closure of the coal economy in the UK and the broader deindustrialisation of Britain more generally. Exposed to economic pressures, UK coal was experiencing decline for a large part of the 20th century (Turnheim and Geels, 2012), however, the rate of change intensified in the 1970s and in the 1980s especially under the Conservative Government of Margaret Thatcher with coal fields closing rapidly. The number of jobs in the coal economy dropped from 221,000 in 1985 to 7000 in 2005 (Beatty et al., 2007). Studies show that this rapid closure has had lasting impacts with former coal communities facing structural problems around higher levels of unemployment, incapacity benefit claims, and fewer available job positions that are still felt today (Foden et al., 2014). As Elliot (2016) notes, spending power was removed from these deindustrialising regions, and they have never recovered with high skill and high wage industrial jobs replaced by fewer low paid jobs and insecure work in the service sector.

As the last coal-fired power stations close this broader process of industrial decline should be considered. This is not to call for a change to the coal phase out policy which is essential in meeting CO2 mitigation targets and can be seen as a progressive and bold decision by the UK government, or to wrongly equate coal mining and coal fired power as one and the same. This perspective can however, provide a shift in focus to shine a light on new questions and areas of concern that arguably should be more central in energy policy research. Yorkshire also has two coal-fired power stations in operation, so when these close it will signal the end of the once dominant coal economy in this region. Given the emissions and health implications of coal economies this is clearly an essential policy. However, by focussing on the long legacy of deindustrialisation and the uneven impacts of this for regions such as Yorkshire, new future-oriented questions regarding jobs, economy and community cohesion come to the foreground. In short, what role will communities and workers in regions like Yorkshire that bore the brunt of the economic 'losses' involved in the long march away from fossil economies, play in seizing the gains of new green industrial policy centred around low carbon technological futures? For some participants in the UK coal phase out consultation, these deeper and more complex questions regarding communities, employment and cultural identity that are highly entangled between work place and social life, have not been sufficiently considered within the transitions literature and UK policymaking.

Viewing coal phase out in the broader context of deindustrialisation related particularly to Northern parts of England, shifts the focus from the importance of coal phase out for climate mitigation ambitions which are a given, to interrogating whether the UK coal phase can be implemented as part of a 'just transition', a concept advocated by parts of the trade union movement (ILO, 2015; ACTU, 2016). In order to more fully account for broader sets of issues around community impacts relevant to just transitions, understanding coal phase out in areas such as Yorkshire in the context of broader changes in social cultural identities through processes of deindustrialisation, whilst drawing on sociological and human geography perspectives (Strangleman 2016, 2001), may be useful. Such literatures place emphasis on the complex processes of social, cultural and material re-orderings that encapsulate issues around social networks, and community cohesion that should be taken into account to understand how phase out is experienced and lived with 'on the ground' as well as how it is 'seen from above' by the 'policy maker'. The need to phase out coal for the good of the planet is clear however, questions regarding what kind of future can be built around a low carbon economy for regions such as Yorkshire remain open.

2. Sustainability transitions and the coal phase out in the UK

Sustainability transitions is a broad field of research which seeks to understand how transitions to low carbon futures can be enacted. The Multi-Level Perspective (MLP) (Geels, 2002) has focussed on the dynamics taking place at the 'niche' and 'regime' level (and to a lesser extent the level of the 'landscape'). The regime represents the stable level of the prevailing fossil fuel based technological trajectory where markets, business models, rules, and regulations, are oriented in a fashion that sustains this trajectory making it hard for new low carbon technologies to 'break through' as they do not 'fit' with the prevailing logics of the regime level (Berkhout et al., 2004). The predominant way of understanding the main driver behind sustainability transitions has been in terms of the support and empowerment of new niche technologies and innovations, where niches could diffuse and reconfigure activities at the regime level thereby enacting a 'regime shift' to more sustainable forms of economic production (Kemp et al., 1998). As such, much of the work focussed on understanding policy orientations around supporting sustainable niches to develop such as 'strategic niche management' (Raven 2005; Witkamp et al., 2011), and 'transition management' approaches (Rotmans and Loorbach, 2008).

However, it became clear from the research of sustainability transitions scholars that policy interventions often aimed at promoting frameworks around supporting niche developments were slowed or curtailed by powerful vested interests in terms of fossil fuel industries (Smith and Kern 2009; Kemp et al., 2007; Hendriks & Grin 2007). Therefore, scholars started to argue that the promotion of new and innovative low carbon technologies alone may not necessarily bring about the speed of transition deemed necessary when the evidence of the potential timescales at which emissions reductions have to take place to avoid dangerous climate change are considered (IPCC, 2012). As a consequence, several scholars have begun to pay more attention to various 'flip sides' to innovation, or what is identified as the 'destructive' part of Schumpeterian 'creative destruction' (Kivimaa and Kern 2015; Rogge and Reichardt 2013; Rogge et al., 2015) examining how dominant technological trajectories in particular, 'fossil fuel regimes', can be 'destabilised' (Turnheim and Geels 2012, 2013). More recently, some sustainability transition scholars have investigated the governance of the active 'discontinuation' of incumbent technological pathways (Stegmaier et al., 2014, 2012). The significance of phase out policies directed at centralised 'incumbent' technologies is based around the idea that speedier deployments of renewables and other low carbon policy interventions would be initiated (Lawrence et al., 2016) as a consequence.

The coal phase out in the UK is a clear example of a discontinuation policy where government aims to deliberately end a certain technological trajectory (Stegmaier et al., 2014). The positives of such a policy decision are clear and well known – the policy which would see the UK be the first major economy to manage the end of coal power, and the closure of UK coal fired power stations is estimated to save around 25 billion tonnes of Carbon dioxide being emitted (Littlecott, 2015). However, there is a danger that this complex issue is viewed too narrowly through the 'master signifier' of carbon dioxide reductions alone, symptomatic of a 'post political' condition (Swyngedouw 2009, 2010; Wilson and Swyngedouw 2014), where all other substantial issues are

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