



THE IMPACT OF BREXIT ON ENERGY IN THE NORTH

A NORTHERN ENERGY TASKFORCE WORKING PAPER

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ABOUT THE NORTHERN ENERGY TASKFORCE

The Northern Energy Taskforce has been established to oversee an ambitious programme of work over the next 18 months that will develop an energy strategy for the northern powerhouse. The Taskforce is chaired by Sir John Harman, who will be supported by a number of high-profile figures with expertise across infrastructure, engineering, finance, academia and local government. It is supported by IPPR staff in a research and secretariat capacity.

The taskforce has three central objectives.

- Develop a plan for the northern energy system to 2030, addressing the key needs and challenges facing energy consumers and businesses in the North.
- Create an economic vision for the northern energy sector in 2030 and a practical roadmap for how to get there, addressing the opportunities for businesses, higher education institutions and the public sector in the energy sector.
- Set out a plan for 'energy devolution' that will consider whether and how various powers and responsibilities for energy issues should be devolved to different pan-northern, sub-regional and local levels.

DISCLAIMER

While this report reflects the deliberations of the Northern Energy Taskforce on these issues, it does not represent the view of all members and some disagree with the consensus position. Analysis and recommendations contained within this paper should therefore be attributed to the taskforce as a whole rather than any individual member.

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1. CONTEXT

The implications of the UK's withdrawal from the European Union are particularly significant for the energy sector. This uncertainty surrounding Brexit negotiations in turn raises specific regional concerns. The North as a whole boasts 48 per cent of the UK's renewable power, including 71 per cent of England's biomass generation, 41 per cent of UK wind power and 40 per cent of UK installed nuclear capacity (Baxter and Cox, 2017). Concerns over the retention of mechanisms and legislation that support the energy sector are therefore particularly pressing for businesses and other energy stakeholders in the North.

In an effort to anticipate the potential economic impact Brexit could have, E3G have developed four scenarios which seek to determine how the political atmosphere could affect the extent to which the UK legislative agenda differs from the EU (Tomlinson 2017). These scenarios sit across two axes; the nature of the negotiation process (orderly vs disorderly) and the issues which dominate the negotiation process (sovereign and integrity interests vs cooperation interests). These can be summarised as follows.

- 1. Sovereign transition: The UK prioritises national sovereignty in the negotiations while the EU defends the integrity of the existing EU institutions.
- **2.** Hostile nationalism: No deal is reached at the end of the of the Article 50 process leading to a messy exit for the UK.
- **3. EU in chaos:** Extremist politicians across the UK are successful and further EU countries leave the union, disrupting Brexit negotiations.
- **4. Economic cooperation**: The UK prioritises long-term stability and therefore seeks a long term exit with a transition deal.

Scenario three now looks less likely given recent election results, and an economic cooperation approach would suggest that little would change at least in the immediate term. Therefore, this paper focuses primarily on the risks for the energy sector associated with the 'hostile nationalism' scenario. It argues that a more hostile Brexit would require the UK to address its historically mixed record on (especially renewable) energy policy with some urgency. This is particularly important for the North, whose natural low-carbon asset and skills base could make the region an energy leader with the right policy support through the Brexit transition.

With overarching climate change goals to reduce greenhouse gas emissions by 40 per cent by 2030 (EC 2017a) and ultimately 80 per cent by 2050 (ibid 2017b), the EU, like the UK, has a clear target against which it can benchmark existing and future energy policy. However, unlike the UK, energy policy at EU level has historically been more consistent at ratcheting ambition and sending clear policy signals than the UK's domestic energy policy.

This paper argues that if the focus on energy policy previously provided by the EU – and the financial and technical support associated with this – is to diminish, then the only way in which the UK will be able to meet its international obligations and drive forward the energy sector in the North will be through the development of a long-term, coherent industrial strategy.

2. MAIN RISKS OF BREXIT

Up to March 2016, there had been 258 pieces of EU legislation – in the form of either directives, regulations, decisions or amendments – within the 'energy acquis' (EC 2016a). Some within government now propose that continued cooperation with the EU would be preferable (BEIS Committee 2017) with intentions to transpose all existing laws and treaties within the acquis communautaire into UK law (Caird 2017). In many cases, such as with the Internal Energy Market, there have been initial signals from government of its intentions to retain membership and associated standards and regulations (BEIS Committee 2017). However, there are several areas where either legislation or membership to EU regulatory bodies is more likely to be removed or whose future is uncertain. The examples below highlight those that are most likely to impact the future direction of travel for the energy sector in the North.

INTERNAL ENERGY MARKET

The EU's Internal Energy Market is the set of rules governing the cross-border trading of electricity and gas on various market exchanges across Europe as well as the series of network codes that ensure the efficient transfer of the physical flows corresponding to these trades. The UK government has currently indicated that Brexit negotiations will seek to preserve and maintain future input into these regulations. However, if the UK adopts a **hostile nationalism** approach, then there is a great risk that energy sourced from the continent would either be complicated by different sets of regulation or, in an extreme situation, would need to be replaced by sourcing imports from elsewhere. Given the UK currently imports around 10 per cent of its energy from European partners, this is no small amount that would need replacing.

ENERGY EFFICIENCY

EU energy efficiency legislation has had a significant impact on UK energy policy. Already, however, there are signs that the UK government is currently arguing for flexibility in allowing countries to decide how this will be achieved. If this is the case, as mentioned above, the UK does not have a good record of incentivising these technologies, particularly energy efficiency (noting the failure of the Green Deal), on its own.

The legislative drive from the EU on energy efficiency applies to two main areas: industrial energy and material use, and domestic/commercial energy use. While the former area is largely addressed by the ETS (see below), with domestic policy, the EU has two key pieces of legislation (EC 2016b) that feed into the Energy Efficiency Directive. This legislation sets out an overarching goal of 27 per cent energy savings through energy efficiency measures by 2030 (with consultation currently underway to increase this target to 30 per cent (ibid 2016c)). These are the following:

- the Ecodesign Directive and Energy Labelling Directive, together forming the Ecodesign Working Plan¹
- the Energy Performance of Buildings Directive.

¹ While energy efficiency reductions result from new designs from industry, the end-use energy consumption takes place at household level.

Ecodesign

Combined with policy requiring more efficient boilers, the CCC estimates that EU product standards have helped to deliver sizeable reductions in CO_2 emissions in homes across the UK, while saving duel-fuel households an average of £490 per year (CCC 2017a). These product standards are currently in place for the EU, with an Ecodesign Working Plan running between 2016–19 that builds upon previous three-year iterations to include new product groups (EC 2016d). As figure 1 shows, with some of the highest domestic CO_2 emissions per head in England, the continued ratcheting up of product efficiency is particularly important for the North. As such, replicating or remaining within existing EU schemes after Brexit is a key part of meeting the UK's own targets of 80 per cent reductions by 2050 (CCC 2017b) which risks being lost during negotiations and could negatively affect homes in northern England more than many other regions.

FIGURE 1



Domestic tCO2/capita in England, 2014

Energy performance of buildings

Another key area for improving domestic energy efficiency has been through building upgrades such as cavity wall and loft insulation implemented through the UK government's ECO obligation. Under this scheme, as figure 2 shows, regions in the North have received more support than any other region in Great Britain.²

² ECO excludes Northern Ireland

FIGURE 2

ECO measures per 1,000 households, up to end March 2017



Currently however, the ECO scheme has been piecemeal at best; in 2014, the North East still had the highest proportion of households in fuel poverty, with the number of ECO measures by that time doing little to address this (DECC 2016). By contrast, the EU is currently in the process of updating its Energy Performance and Buildings Directive to set even more ambitious standards. In this sense, the risk of the UK falling even further behind could have one of the most significant impacts on buildings in the North.

EU ETS

According to IPPR analysis, the North as a whole has a much higher carbon intensity than the national average, with the North East having the third highest carbon intensity of any region in the UK (Baxter and Cox 2017). Therefore, in order to meet the UK's own climate targets and interim carbon budgets, the EU Emissions Trading System (ETS) will be an important tool in driving energy intensive industries towards this goal. Though permit surplus since its inception has depressed prices and limited abatement efforts, the EU has recently renewed its ambition for sectors covered by the ETS to reduce total emissions by 43 per cent (compared to 2005), in order to meet a Europe-wide reduction target of 40 per cent (compared to 1990) emissions by 2030 (EC 2017a). To achieve this, the EU is attempting to tighten the surplus of permits in circulation through delaying auctions of further permits ('back-loading') (ibid 2017c), supporting sectors at risk of carbon leakage (ibid 2017d) and creating a stability reserve in January 2019 which will set a maximum threshold of 833 million allowances (ibid 2017e).

It is currently unclear whether or not the UK intends to continue its participation in this market and the new stabilising mechanisms planned for its future. This uncertainty could have serious consequences for the decarbonisation efforts of energy intensive industries across the country, and particularly in the North, as figure 3 shows.

FIGURE 3



Regional Carbon Intensity (kt CO2/GVA), 2014

EURATOM

The UK government has stated its intention to withdraw from Euratom, due to its affiliation (though legally separate) to the European Court of Justice and the European Commission. In order to ensure continuity in the nuclear industry, there are several functions currently administered by Euratom which will need to be replaced including nuclear fusion research and international cooperative agreements. For the North in particular, the following functions are most relevant.

- The Sellafield plant in West Cumbria employs over 10,000 people and is home to over the half the UK's nuclear workforce (Sellafield Ltd 2017). Sellafield has several contracts in place with other European countries to trade, send and reprocess spent fuel and nuclear waste based on Euratom safety standards. Withdrawing from Euratom means withdrawing from their Directives on Trans-frontier Shipments of Spent Fuel and Radioactive Waste (Directive 2006/117/EURATOM) and Safety of Waste (Directive 2011/70/ EURATOM) (Nuclear Institute 2017). This means that new standards that govern existing trade deals will need to be arranged. In this respect, the UK government will either need to create a new set of standards to which all existing trade deals apply, or establish a series of bilateral regulatory agreements. Either option is likely to take a long time, with the latter potentially creating greater complexity through multiple different arrangements.
- In July 2015, newly created consortium NuGen bought land rights for the development of a new Moorside nuclear power station near the Sellafield site (World Nuclear News 2015). This project has already faced several setbacks, with reactor designer Westinghouse filing for bankruptcy in March of this year (Cardwell and Soble 2017). Withdrawing from Euratom creates still greater uncertainty at a time when NuGen are completely re-assessing financing and technical solutions for the site (NuGeneration 2017). In particular, the Euratom Supplies Agency is currently responsible for all ores, sources materials and special fissile materials and negotiates for their supply with other countries on behalf of Member States (Nano and Tagliapietra 2017). Without this common purchasing scheme, the UK will have to negotiate its own bilateral trade

arrangements which could result in less favourable trading terms and will likely take longer than the timeline of March 2019 for Brexit to take place.

INNOVATION AND RESEARCH FUNDING

FIGURE 4

The North is heavily dependent on ERDF funding relative to other regions. Of the £168 million received by England as a whole for projects related to low carbon mitigation and adaptation activities, renewable energy and energy efficiency, the North is *currently* receiving over £75 million of these funds. As figure 4 shows, this is the largest portion received of any region in the UK.

Other – 5% London and the South – 31% North – 45% Midlands – 20% Source: ESIF (2017), IPPR analysis

ERDF Funds Disbursed in England for Operations between 2014 to 2020

The future of research funding from the EU is also a particular concern for the North. For example, the N8 research partnership – a collaboration of eight leading universities in the North –have supported engagement with over 4,300 businesses to date through ERDF schemes (N8 Research Partnership 2017a). Of the £34 million of (the total £168 million) ERDF funding disbursed to academic institutions, over half of this money has been disbursed to northern academic institutions, as figure 5 shows.

FIGURE 5



ERDF Funds disbursed to academic institutions in England for operations between 2014 and 2020

While the UK government has provided reassurance that it will underwrite payments for research projects with European funding, payments for existing projects appear to be guaranteed legally by EU institutions anyway (Science and Technology Comittee 2016). The future beyond these projects therefore remains uncertain. Further still, if the UK does decide to restrict freedom of movement as part of Brexit negotiations, recruitment for future research projects will become much more difficult.

Another key concern over research funding is the negative impact this would have on collaboration with other European research institutions. While knowledgesharing in certain sectors is likely to continue, it is uncertain whether or not UK research institutions would be able to bid jointly with European ones. Indeed, there is a risk that joint bids involving UK partners would be viewed less favourably. According to the campaign group Scientists for EU, after Switzerland cancelled freedom of movement agreements with the EU, their participation in science programmes decreased by 40 per cent (Scientists for EU 2016).

This lack of collaboration is ultimately a lose-lose scenario that could negatively affect the depth of research achievable for all participants. As an energy-specific example in the North of England, a joint research project between the University of Liverpool and the National Renewable Energy Centre (CENER) in Spain has recently developed computer modelling that can be used to better understand air flows around wind turbines (N8 Research Partnership, 2017b). This in turn will be used to inform the EU-wide project AVATAR that is developing aerodynamic models to aid with the design of next generation wind turbines of up to 20MW in rated capacity (Avatar, 2017). For many other projects, particularly those covered by Horizon 2020, these opportunities may risk being lost altogether once existing funding sources are exhausted.

3. MAIN OPPORTUNITIES OF BREXIT

The government's plans for a 'modern industrial strategy' represent a vital opportunity to define how the UK will move forward without the EU. The industrial strategy could be used to create a plausible vision of what success looks like for a post-Brexit UK, particularly for the energy sector. As explained below, we argue that a fundamental mission running through the industrial strategy should be to support clean growth. Furthermore, the North is uniquely well placed to play a leading role in delivering this mission; through both the abundance of low carbon assets in the region and the number of energy intensives whose path to decarbonisation will be a large contributor to national targets.

THE CASE FOR A CLEAN GROWTH INDUSTRIAL STRATEGY

The Paris Agreement was a profound success for international diplomacy and, for the first time, set a unifying global agenda which almost every country has agreed to pursue. Though driven by an environmental imperative, this agreement will also have a profound effect on the global economic agenda. With every country making nationally determined contributions (NDCs) to reduce their GHG emissions, with increasing ambition every five years, these reductions will be driven by policy, but ultimately generated by industry.

This will precipitate a dramatic change in the industrial status quo. Existing businesses will need to adapt their manufacturing processes and product offerings or risk losing market share. New businesses with low or zero carbon credentials will emerge and dominate new and existing markets. If achieved at the economic depth, breadth and speed required to contain global temperature rise, this change will be nothing short of a new industrial revolution.

For the UK economy, in practical terms this will require competing internationally with other countries who are all promoting domestic industries vying for market position under the same global mission and the same timelines.³ With the Brexit negotiations creating uncertainty over existing trade arrangements with other countries, the UK has the opportunity to focus on inward investment within the energy sector, particularly in the North. In this sense, the announcement of a new industrial strategy is extremely timely – a coordinated response from industry to match international competitors is crucial to the long-term survival of many sectors of the economy.

Though any strategy will need to assess all sectors for both the extent of change required of them, and in which of them the UK can develop a competitive advantage, the international urgency and prevalence of decarbonisation makes it a useful, unifying criteria with which to make decisions on matching of supply with demand for the whole economy. From a policy perspective, this will range from phasing out coal as far as providing support for product innovation and the electrification of energy intensive industries. In the coming months, IPPR will be producing analysis that puts forward a number of proposals for regional collaboration in the North in a number of these areas including hydrogen, nuclear and CCS.

^{3 2022} will be the first opportunity to "ratchet up" ambitions to meet the long-term goal for global GHG reductions by 2050

STATE AID

In theory, this long-term industrial strategy could receive greater support from an increased sovereignty over state aid. The extent to which this is acquired will depend on the Brexit model pursued. For example, if the UK wishes to stay within the European Economic Area, state aid will still be subject to the European Free Trade Association Surveillance Authority (ESA) that obligates some similar State Aid restrictions (Peretz and Bacon 2017), though without direct effect.

If, however, the UK withdraws fully from all EU agreements, as a hostile nationalism scenario might suggest, the government may have greater access to state aid. While any assistance provided would still be subject to WTO rules against market distortion of goods trading (ibid), two main benefits could be felt. First, the time-lag incurred waiting for Commission approval of state aid projects would be removed. Second, the UK would be less concerned about the expansion of the EU Commission's definition of what does and does not constitute state aid.

As one of the regions with the greatest potential for a burgeoning low carbon energy sector, the North could stand to benefit from the increased latitude and alacrity of support afforded by loosened state aid regulation. In particular, this removal of compliance obligations could reduce the administrative burden of procurement for local and regional authorities. Given the move towards greater devolved authority through metro mayors and local growth deals, this would result in fewer (though not the total removal of) hurdles to regional procurement and disbursement of funds. Specific to the North, deals could potentially be struck around (potentially low carbon) energy prices for manufacturing sectors that may otherwise be exposed to high electricity costs without state aid assistance.

CONCLUSION

The rationale for the relaxation of state aid regulation is entirely predicated on having an industrial strategy that capitalises on the potential of the energy sector, particularly in the North, through interventions that lead to clean growth beyond that which is already described in EU legislation. Achieving this would take a truly revolutionary effort, through either explicit government intervention, or extensive devolution of authority, including powers of taxes and incentives, to individual regions.

If the outcome was anything other than this scenario, the risks described throughout this paper of withdrawing from hitherto beneficial legislation, such as Euratom, should be considered too great to countenance a hard Brexit. Indeed, given successive UK governments' heel-dragging on energy policy, and the enormity of bureaucracy that is required for Brexit negotiations, let alone the formation of a long-term industrial strategy, in practice the risks of total withdrawal from all EU arrangements appear very high indeed.

REFERENCES

Avatar, 2017. 'What is AVATAR?', webpage. http://www.eera-avatar.eu/

- Baxter D and Cox E (2017) Who will power the powerhouse? The energy sector's challenges and opportunities in the North, IPPR
- BEIS Committee (2017) Leaving the EU: negotiation priorities for energy and climate change policy, House of Commons
- Caird J (2017) Legislating for Brexit: the Great Repeal Bill, House of Commons
- Cardwell D and Soble J (2017) 'Westinghouse Files for Bankruptcy, in Blow to Nuclear Power', New York Times. https://www.nytimes.com/2017/03/29/business/westinghouse-toshibanuclear-bankruptcy.html
- Committee on Climate Change [CCC] (2017a) Energy Prices and Bills Impacts of meeting carbon budgets
- Committee on Climate Change [CCC] (2017b) Meeting Carbon Budgets: Closing the policy gap, report to parliament
- Department of Energy and Climate Change [DECC] (2016) Annual Fuel Poverty Statistics Report 2016
- European Commission [EC] (2016a) Overview of the secondary EU legislation that falls under the legislative competence of DG ENER and that is currently in force
- European Commission [EC] (2016b) Clean energy for all
- European Commission [EC] (2016c) Directive of the European Parliatment and of the Council
- European Commission [EC] (2016d) Ecodesign Working Plan 2016-2019
- European Commission [EC] (2017a) '2030 climate & energy framework', webpage. https://ec.europa.eu/clima/policies/strategies/2030_en
- European Commission [EC] (2017b) '2050 low-carbon economy', webpage. https://ec.europa.eu/clima/policies/strategies/2050_en
- European Commission [EC] (2017c) 'Market Stability Reserve', webpage. https://ec.europa.eu/clima/policies/ets/reform_en
- European Commission [EC] (2017d) 'Carbon leakage', webpage. https://ec.europa.eu/clima/policies/ets/allowances/leakage_en
- European Commission [EC] (2017e) 'Publication of the total number of allowances in circulation for the purposes of the Market Stability Reserve under the EU Emissions Trading System established by Directive 2003/87/EC', dataset
- Ford C (2016) '£145 million North East fund that could create 3,500 jobs is signed', Chronicle Live. http://www.chroniclelive.co.uk/business/business-news/ 145m-north-east-fund-could-12186263
- N8 Research Partnership (2017a) 'Facts and Figures', webpage. http://www.n8research.org.uk/economic-impact/test/
- N8 Research Partnership (2017b) 'Developing Understanding of Air Flows Around Wind Turbines', webpage. <u>http://www.n8research.org.uk/case-study/developing-</u> <u>understanding-of-air-flows-around-wind-turbines/</u>
- Nano E and Tagliapietra S (2017) 'Brexit goes nuclear: The consequences of leaving Euratom'. http://bruegel.org/2017/02/brexit-goes-nuclear-the-consequences-of-leaving-euratom/
- Nuclear Institute (2017) Brexit and the Euratom Treaty Issue
- NuGeneration (2017) 'CEO Tom Samson briefs Cumbrian stakeholders on NuGen's Strategic Review'. <u>http://www.nugeneration.com/news-16052017.html</u>
- Peretz G and Bacon K (2017) 'Paper on post-Brexit options for State aid', UK State Aid Law Association
- Science and Technology Comittee (2016) Leaving the EU: implications and opportunities for science and research, House of Commons

Scientists for EU (2016) 'Scientists for EU Factsheet'. <u>http://scientistsforeu.uk/</u> Sellafield Ltd (2017) 'Facts', webpage. <u>http://www.sellafieldsites.com/press-office/facts</u> Tomlinson S (2017) *Brexit Scenarios: The Implications for Energy and Climate Change*, E3G World Nuclear News (2015) 'NuGen acquires land for Moorside project'. <u>http://www.world-nuclear-news.org/NN-NuGen-acquires-land-for-Moorside-</u>

project-1407155.html