

# Promoting Renewable Energy in the UK

## What Difference has Devolution Made?

Richard Cowell\*, Geraint Ellis, Fionnguala Sherry-Brennan, Peter A. Strachan and David Toke

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For additional details or comments, please contact:

Richard Cowell  
School of Planning and Geography\*  
Cardiff University  
Glamorgan Building  
King Edward VII Avenue  
Cardiff  
CF10 3WA  
Tel.: +44 (0)29 20876684  
Email: [cowellrj@cardiff.ac.uk](mailto:cowellrj@cardiff.ac.uk)



Queen's University  
Belfast

UNIVERSITY OF  
BIRMINGHAM



ROBERT GORDON  
UNIVERSITY•ABERDEEN



## Executive Summary

This report presents the initial findings of a two-year research project, funded by the Economic and Social Research Council (ESRC), to assess the effects of devolution within the UK on the delivery of renewable energy: wind, solar, biomass, hydro, wave and tidal power. The period of devolution, from 1998 onwards, has seen dramatic increases in renewable electricity generating capacity. The report examines how far the devolved governments in Northern Ireland, Scotland and Wales have pursued different strategies for renewable energy, made different use of the policy instruments available to them, and whether they have had any effect on the rates and direction of renewable energy development.

Tracing the relationship between devolution and renewable energy is simultaneously vital yet problematic. It is vital because a high proportion of the potential renewable energy resources of the UK are deemed to lie within the territory of Northern Ireland, Scotland and Wales and the extent to which they are realised will affect whether UK renewable energy and decarbonisation targets are met.

It is problematic because devolution is a complex process and promoting renewable energy requires the pulling together of an array of factors – economic, technological, social and political – which operate at multiple spatial scales. Tracing causal connections between actions arising from devolution and renewable energy outcomes is difficult to do and requires great care.

This study ran from January 2011 to January 2013, and has drawn on more than 80 interviews with senior figures in government (at all levels), politicians and officers, energy companies and trade associations, and non-governmental organisations, supported by the analysis of policy and planning documents.

The statistics on renewable energy capacity installed echo the general message we received from our research: that Scotland could be considered a leader in renewable energy development within the UK. Much of this growth has come from on-shore wind, which grew ten-fold from 308MW in 2003 to 3016MW by 2011. Renewable energy in England relies more heavily on landfill gas and, more recently, offshore wind and biomass co-firing plus, to a lesser extent, solar PV. Onshore wind is the main new renewable energy technology in Northern Ireland and Wales, which have also witnessed increases during devolution.

A key pattern, and policy output of devolution, is that all of the devolved governments have identified aims that are above the UK target (as underpinned by the EU Renewable Energy Directive) of meeting 15% of energy from renewable sources (equating to roughly 30% of electricity demand) by 2020.

However, one cannot easily use the statistical data about energy development and generation to make causal connections i.e. to infer that the levels of renewable energy development in any part of the UK can be attributed neatly to actions by the government of that area.

Much political debate about devolution focuses on the formal distribution of powers which, in the energy context, means acknowledging that:

- Energy policy is only fully devolved to the Northern Ireland Executive (apart from nuclear energy, of which it has none), including powers to design and operate systems of market support, and full planning and consent powers over electricity infrastructure, onshore and offshore.
- In Scotland, energy policy is executively devolved, which gives Scottish Ministers full control over major energy consents and planning, onshore and offshore, and operational control over market support systems.
- The Welsh Government has the fewest powers, of which the most pertinent are planning policy, overseeing planning consents for smaller renewable energy generation facilities and, like Northern Ireland and Scotland, responsibility for discretionary economic development spend.

The main policy-making powers and capacity lie in London, with DECC and the Treasury playing central roles. This applies especially to the design of systems of market support, oversight responsibility for regulating energy networks, and negotiation with the EU on energy-relevant policy. Arms-length agencies like the regulators and the Crown Estate also have key roles to play in the deployment of renewable energy.

Our analysis shows that the powers allocated to governments in Northern Ireland, Scotland and Wales are clearly constitutive of the potential for action, and powers have wider effects on government credibility and in terms of legitimising resources or negotiating positions. But equally simply possessing 'powers' in the narrow legal or administrative sense may be of limited relevance without a disposition, capacity or will to deploy them in an effective manner for renewable energy. In short, 'powers' is an insufficient explanation.

We identify a number of areas in which devolved governments have been responsible for actions, policy innovations or styles of working which have proven helpful to the delivery of renewable energy in the UK:

- The Scottish Government has led in using its powers to differentiate ROC levels to give greater support to wave and tidal power, while Northern Ireland has used this to facilitate small-scale renewables and anaerobic digestion;
- The Scottish Government has devoted much greater resources relative to its population on direct funding of facilities and research and demonstration for offshore wind and wave and tidal stream energy technologies than is being done in the rest of the UK.
- The Scottish Government's control over major energy generation and grid consents is widely seen as advantageous as a means of exercising closer control over delivery, but its decision not to follow Westminster in creating new consent procedures may have had some short-term advantages. Centralised procedures also underpin high consent rates for wind in Northern Ireland.
- Although the current state of implementation seems conflictual and tortuous, it is defensible to say that the Welsh Government's use of strategic spatial zoning has helped pull in a larger volume of on-shore wind development interest than could be expected in a comparable region of England.
- The delivery of new grid infrastructure, to enable the timely exploitation of renewable resources in remote locations, remains problematic across the UK. The role of devolved governments is mostly in the realm of 'softer' actions, such as signifying commitment to such investments, or undertaking a mediating role between stakeholders within route corridors.

However, to understand why the above steps have been taken, and why they have exerted particular effects, we need to look at powers in the light of a wider set of institutional and political factors, which have shaped processes of policy formulation and implementation.

- Time is itself a factor. Among the devolved governments, political commitment to large-scale renewable energy development is longest standing in Scotland, being evident in the 1999 elections, allowing debates about delivery to develop sooner than in Northern Ireland and Wales.
- A significant dimension of this is the centrality of energy issues to the Scottish National Party and its independence agenda, but so too is cross-party support, the galvanising of a wider but still compact policy network including major energy businesses, and a persistent framing of renewable energy as a national economic agenda.

This cohesion of elite interests in Scotland – across the new tier of elected representatives, in devolved government and business - around renewable energy expansion – helps explain why the Scottish Government feels legitimised to use the powers available, and empowered actively to facilitate

implementation of potentially controversial projects (such as grid and on-shore wind). As it has achieved successful growth in the sector, this too added to an upward spiral of credibility among key business interests, and added weight to its position in dialogue with Westminster.

However, despite the contributions from the devolved governments, there are commentators that would doubt whether the EU target of obtaining 15% of energy (and by implication, 30% of electricity demand) by renewable energy sources is going to be achieved. Previous comparative analysts attribute this to problematic features of the UK mode of renewable energy development, which is characterised by dominance of a small number of large energy companies, many of whom have interests in an array of conventional energy technologies, with financial support and other arrangements that are expensive and difficult for new entrants to access. The resulting development patterns – a tendency towards very large schemes, requiring big grid, for which many of the economic beneficiaries are distant from development – tends to exacerbate social disquiet, and slow delivery.

This perspective raises a different question about the effects of devolution: not to ask what have the devolved government's done for renewable energy within their own territory, but to what extent have they used their access to policy formulation processes in Westminster to challenge the prevailing UK energy pathway? The evidence of our research suggests that the devolved governments have not done so. Indeed, with the exception of Scottish opposition to new nuclear, both Scottish and Welsh Governments are broadly comfortable with an energy development pathway that consists of large developments, international investment and conventional generation technologies. Indeed, our research suggests that energy generally – and renewable energy in particular – is not a subject on which there is fundamental disagreement about policy direction between London, Cardiff, Edinburgh or Belfast.

Thus an alternative reading of the effects of devolution on renewable energy is that Scotland's experience shows us the conditions that are required for the UK renewable energy pathway to work successfully: significant elite cohesion around the agenda and access to a wider pool of supportive resources. That there is less sign of elite cohesion around the expansion of renewables in Westminster, Cardiff or Belfast qualifies the scope for any easy 'borrowing' of policy lessons from Scotland.

## Foreword and acknowledgements

This report provides a detailed account of the findings of the research project Delivering Renewable Energy under Devolution. A shorter analysis is also available. Copies of both are available on the project website, at:

<http://www.cardiff.ac.uk/cplan/research/delivering-renewable-energy>

The relationship between devolution within the UK and renewable energy outcomes is complex, contested and rapidly evolving - we could never hope that our analysis provides the last word on this subject. The authors would be very grateful for any comments or feedback that readers may have. Please send them to Richard Cowell, as follows:

Email: [cowellrj@cardiff.ac.uk](mailto:cowellrj@cardiff.ac.uk)

School of Planning and Geography  
Cardiff University  
Glamorgan Building  
King Edward VII Avenue  
Cardiff  
CF10 3WA  
Tel.: +44 (0)29 20876684

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Richard Cowell and Fionnguala Sherry Brennan, Cardiff University

Geraint Ellis, Queen's University Belfast

Peter A. Strachan, Robert Gordon University, Aberdeen

David Toke, University of Birmingham

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# Contents

<b>EXECUTIVE SUMMARY</b> .....	<b>1</b>
<b>FOREWORD AND ACKNOWLEDGEMENTS</b> .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
<b>1 INTRODUCTION</b> .....	<b>7</b>
<b>2 WHAT DO THE STATISTICS TELL US?</b> .....	<b>10</b>
2.1 INTRODUCTION .....	10
2.2 LEVELS OF RENEWABLE ELECTRICITY GENERATION – THE SIMPLE PICTURE .....	10
2.3 DIFFERENT PERSPECTIVES ON THE DATA .....	12
<i>Rates of change</i> .....	12
<i>Compared to population</i> .....	13
<i>The distribution of contributions</i> .....	14
2.4 PROGRESS AGAINST TARGETS .....	14
2.5 CONCLUDING REMARKS .....	15
<b>3 POWERS AND EXPLANATIONS</b> .....	<b>17</b>
3.1 POWERS .....	17
3.2 INTERPRETING THE EXPLANATORY POWER OF ‘POWERS’ .....	18
<i>Multi-level, multi-actor governance</i> .....	18
<i>Intergovernmental bargaining</i> .....	19
<i>Action and resistance</i> .....	19
<i>Institutionalist perspectives</i> .....	19
<i>Policy networks</i> .....	20
<i>Instrument choice and flanking conditions</i> .....	20
<i>Socio-technical systems and energy transitions</i> .....	20
<i>Regions and sustainability</i> .....	20
<b>4 CAUSAL FACTORS</b> .....	<b>22</b>
4.1 RENEWABLE ENERGY IN POST-DEVOLUTION POLITICS .....	22
<i>Political support and problem framing</i> .....	22
<i>Leadership</i> .....	24
<i>Shape of the Policy Community</i> .....	24
<i>Concluding remarks</i> .....	26
4.2 MARKET SUPPORT AND OTHER FINANCIAL ASSISTANCE .....	27
<i>Differentiating UK norms?</i> .....	27
<i>Influencing policy change?</i> .....	28
<i>Other dimensions of financial support</i> .....	30
4.3 LAND USE PLANNING .....	31
<i>Northern Ireland – an untransferable lesson?</i> .....	31
<i>Success in Scotland?</i> .....	31
<i>Wales and England – intersection and conflict</i> .....	32
<i>England – an image of Wales without TAN8?</i> .....	34
<i>Concluding remarks</i> .....	35
4.4 STEERING THE GRID .....	37
<i>Introduction</i> .....	37
<i>Scotland</i> .....	38
<i>Wales: the mid-Wales connector</i> .....	38
<i>Northern Ireland: reinforcing the west and the North-South interconnectors.</i> .....	39
<i>Concluding remarks</i> .....	40
<b>5 THE VIEW OFFSHORE</b> .....	<b>41</b>
5.1 INTRODUCTION .....	41
5.2 DEVELOPMENTS TO DATE .....	41
<i>Scotland</i> .....	42
<i>Wales</i> .....	43
<i>Northern Ireland</i> .....	44
5.3 CONCLUDING REMARKS .....	44

**6 PROMOTING SOCIAL ENGAGEMENT IN RENEWABLE ENERGY? ..... 45**

6.1 INTRODUCTION ..... 45

6.2 PUBLIC ENGAGEMENT IN DECISION-MAKING PROCEDURES ..... 45

6.3 PUBLIC ENGAGEMENT IN THE DEVELOPMENT AND OWNERSHIP OF RENEWABLE ENERGY..... 47

6.4 CONCLUDING REMARKS ..... 48

**7 CONCLUSIONS ..... 50**

7.1 WHAT HAVE WE LEARNED? ..... 50

7.2 DEVOLUTION, RENEWABLE ENERGY IN THE UK IN A WIDER COMPARATIVE CONTEXT ..... 52

**APPENDIX 1: SUMMARY OF RESEARCH METHODOLOGY ..... 55**

**APPENDIX 2: RENEWABLE ENERGY IN THE UK PRIOR TO 2000 ..... 56**

**APPENDIX 3: ELECTRICITY GENERATION (GWH) PER ANNUM, BY COUNTRY AND TECHNOLOGY TYPE. .... 58**

**NOTES AND REFERENCES ..... 62**

# 1 Introduction

Across Europe, there is broad consensus that a transformation is needed in our energy systems if society is to meet the challenges of environmental sustainability, security of supply, infrastructural renewal and economic affordability.<sup>1</sup> A key plank of this transformation have been renewable energy technologies - wind, solar, biomass, wave, hydro and tidal power<sup>2</sup> – the expansion of which is institutionalised in EU directives and, in the UK, in successive national policy statements. At present, the UK government is committed to meeting 15% of energy consumption from renewable sources by 2020<sup>3</sup>, as required by the EU; a target which in practice entails that renewables supply around 30% of electricity consumption<sup>4</sup>. However, as the targets become more ambitious (DTI 2007), so the governance and societal challenges of meeting these goals become clearer (Smith 2009).

Within this governance challenge we have, in the UK, the process of devolution: a process which, from 1998, has conferred increased powers on governments in Northern Ireland, Scotland and Wales, with the corollary that some powers available to government in Westminster increasingly apply only to England. The move towards devolution in the late 1990s was not driven by debates about energy transition, but devolution is unavoidably a facet of the political and institutional context in which renewable energy is emerging in the UK. But how have these agendas interacted? Has devolution been a boon for renewable energy, a hindrance or an irrelevance?

Such questions are simultaneously pressing and problematic. They are pressing because for the UK government to meet its goals on renewable energy, much depends on what happens outside England. Huge renewable energy resources, on-shore and offshore, are located in the land and seas of Northern Ireland, Scotland and Wales. This suggests that what governments and other actors do *within* those territories is likely to affect how much notional resource is translated into energy generating capacity. Indeed, the sense that the devolved administrations are responsible (or culpable) for renewable energy outcomes in their territories is a common strand of pressure politics and media discourse: whether that is lauding the 'leadership' of some countries or criticising others for 'falling behind'.

Such questions are problematic because establishing with any precision whether political devolution is 'causing' any specific outcome is an almost Herculean exercise. Efforts to establish whether even a single policy mechanism, like planning, has 'caused' particular development outcomes is a delicate diagnostic exercise. The subject matter here magnifies these problems.

- There are questions about the scope for the state at any level to steer change in energy systems, in the context of energy markets, private companies and financial circuits which operate at supra-national levels, and deeply entrenched societal and technological norms.<sup>5</sup> The prospects for renewable energy in the UK is difficult to insulate from wider shifts such as changes in fossil fuel prices, and the direction of innovation and commercialisation of new renewable energy technologies is difficult to accelerate and predict.
- Any analysis of energy development takes place in the context of significant institutional flux, driven by factors inside and outside national territories. Current UK government proposals for Electricity Market Reform (EMR) and the Scottish independence referendum for 2014 both have implications for renewable energy development.
- As other analysts have concluded, renewable energy development is shaped by a multiplicity of economic, political and social factors<sup>6</sup>. Moreover, 'renewable energy' is itself diverse, embracing technologies at different scales and stages of development, with different environmental and social consequences, which entail varying requirements for government action. For some (such as on-shore wind or anaerobic digestion) the planning system and acquisition of consents is a particular challenge; for others, less so.
- Analytical problems also arise from the nature of devolution. First, there is the partial, asymmetric nature of the devolution settlement. The devolved governments in Scotland, Wales and Northern Ireland each holds a different 'portfolio' of levers relevant to the promotion of renewable energy, with

key powers retained by Westminster. Second, devolution is political – that is to say it is concerned with allowing greater self-determination for particular political communities, making it hazardous to assume that devolution automatically, instrumentally serves the delivery of any particular policy goal.

Promoting greater renewable energy raises significant challenges, so inevitably the creation of a new tier of representative government allows scope for constructing new energy policy agendas. This may mean renewables policy is used to advance new territorial or economic interests that have particular leverage at the level of the devolved administrations, whilst neglecting those that have more traction at the UK level. This may also mean that certain renewable energy technologies become favoured over others, or that the emphasis placed on renewables vis-à-vis nuclear power, gas, or energy efficiency may vary from one administration to another.

Given the complexity of the task, it is little surprise that previous analyses of devolution in the UK have tended to focus mostly on changes to political processes, government organisation, policy making and policy building<sup>7</sup>, rather than policy outcomes. At the same time, most analyses of energy policy and renewable energy in the UK have tended to adopt a UK-scale of analysis, giving little or no attention to actions by the devolved administrations.<sup>8</sup> This research thus faces formidable challenges, but also a significant gap in existing knowledge, with an under-developed potential for policy learning.

This report summarises the findings of a two year study, *Delivering Renewable Energy Under Devolution*, funded by the Economic and Social Research Council (RES-062-23-2526), which ran from 1<sup>st</sup> January 2011 to 31<sup>st</sup> January 2013. It focused on the actions of the UK government in Westminster, and the governments that have been established in Scotland, Wales and Northern Ireland since 1999, with some effort to record perspectives on the effects of English regional institutions, abolished by the 2011 Localism Act.

It sought to address the following questions:

- To what extent has devolution affected the provision of renewable energy, in terms of the ways in which the devolved governments, English national bodies and UK levels of government have formulated policy objectives, adjusted the nature and settings of policy instruments, and influenced the delivery of new renewable energy capacity?
- To what extent have the devolved institutions made different use of the powers for promoting renewable energy bequeathed to them by the devolution process, or diverged from UK/English policy norms?
- What lessons can one draw for institutional design in the effective delivery of renewable energy from the experiences of governments across the UK to date?

The research used official renewable energy statistics to capture policy outcomes, but the explanation of why certain outcomes have arisen was informed by more than 80 interviews with senior figures in government (UK, devolved governments, local authority), business, and the voluntary sector, supported by analysis of key documents (policies, inquiry documents, correspondence, etc). A more detailed account of the methodology is given as Appendix 1. To make the research manageable, we focused on electricity generated from renewable sources, and on larger-scale generation facilities. We note the new initiatives to promote the take-up of renewable heat sources, and the way in which the Feed-In Tariff is starting to transform the take-up of micro-scale renewable technologies like solar PV, but our study focuses on the technologies that have got renewable energy capacity to its current position, as of January 2013.

The report is structured in a way that progressively explains the complex arena for developing renewable energy across the UK. The next section (Section 2) first describes the more readily quantifiable aspects of energy deployment in terms of the growing generating capacity of renewables in each devolved administration and the way in which these compare to the different targets adopted across the UK. It is clear that a blunt statistical account only hints at the dynamics involved in the transition to a more sustainable energy system, so Section 3 goes on to discuss the asymmetrical distribution of the powers and competencies that each devolved administration possesses to influence the deployment of

renewables, and the extent to which powers alone can help explain the differences in approach. Section 4 then elaborates the analysis by providing an extended discussion on some of the key factors that explain the differences across the UK, namely that of the governance and political context of renewable policy and deployment; approaches to market support; spatial planning; and grid development. Section 5 examines the specific area of marine renewables and Section 6, the factors that influence broader social engagement with renewables in each of the devolved administrations. The final section then draws together some of the lessons we feel can be assimilated from the research, both for future of renewable energy, but also on more general insights for what devolution has meant for the governance of the UK.

If this is the first major piece of research examining the effects of devolution on energy transition in the UK, we would never expect it to be the last word. The subject matter in hand is scarcely likely to generate determinate conclusions and we would thus be very grateful for further feedback on our findings. The devolution settlement itself is constantly evolving, and a range of events in the energy sphere - from the strike prices agreed under Energy Market Reform, to the take up of Feed-in Tariffs, to the expansion of fracking – could alter future development trajectories. Readers might legitimately take different stances on the arguments we present. Many of the issues summarised briefly in this initial findings report will be the subject of more detailed analysis in future publications, and we will promote these through the project website as they emerge.

## 2 What do the statistics tell us?

### 2.1 Introduction

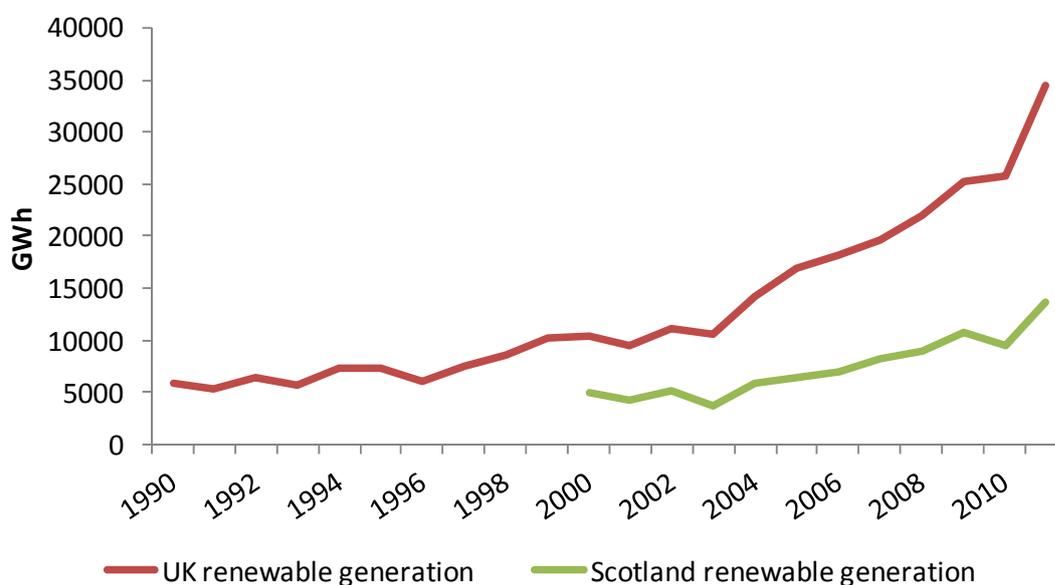
In this section we review the level of renewable energy development in England, Northern Ireland, Scotland and Wales in the period 1990 to 2011, as revealed by official statistics. This data shows us what has happened in the period that coincides with devolution – i.e. from 1999 onwards – in terms of capacity installed and electricity generated. More detailed statistics, broken down by type of technology, are given in Appendix 1.

Megawatts and terawatt-hours have been the prime benchmark for judging progress with renewable energy in the UK, but the way that energy statistics are presented can cast a different light on the rate of renewable energy development in different parts of the UK. However, it is important to resist simplistic causal inferences between the megawatts and the ‘impacts’ of devolution, for reasons that we will elaborate in later sections.

### 2.2 Levels of renewable electricity generation – the simple picture

Figures 1 and 2 set out the overall levels of renewable energy development in the UK from 1990 onwards, but broken down by each component country of the UK from 2003 onwards; the first year in which disaggregated data became regularly available. The only individual country for which data on annual renewable energy generation goes back slightly further is Scotland where information is available from 2000 (Figure 1).

**Figure 1** Generation of electricity from renewable sources for the UK (1990-2011) and Scotland (2000-2011) (Source: DUKES for UK data; Scottish Energy Statistics for Scotland data.)



A first point to take from Figure 1 is that progress with renewable energy in the UK as a whole was slow during the 1990s. The main market instrument during that period was the contract auctions of the Non-Fossil Fuel Obligation (NFFO) and the Northern Ireland Renewables Obligation (NIRO), systems of support that have been widely criticised as ineffective<sup>9</sup>. Much of the renewable energy actually generated through the 1990s came from hydro-power in Scotland, installed earlier in the 20<sup>th</sup> century, which has

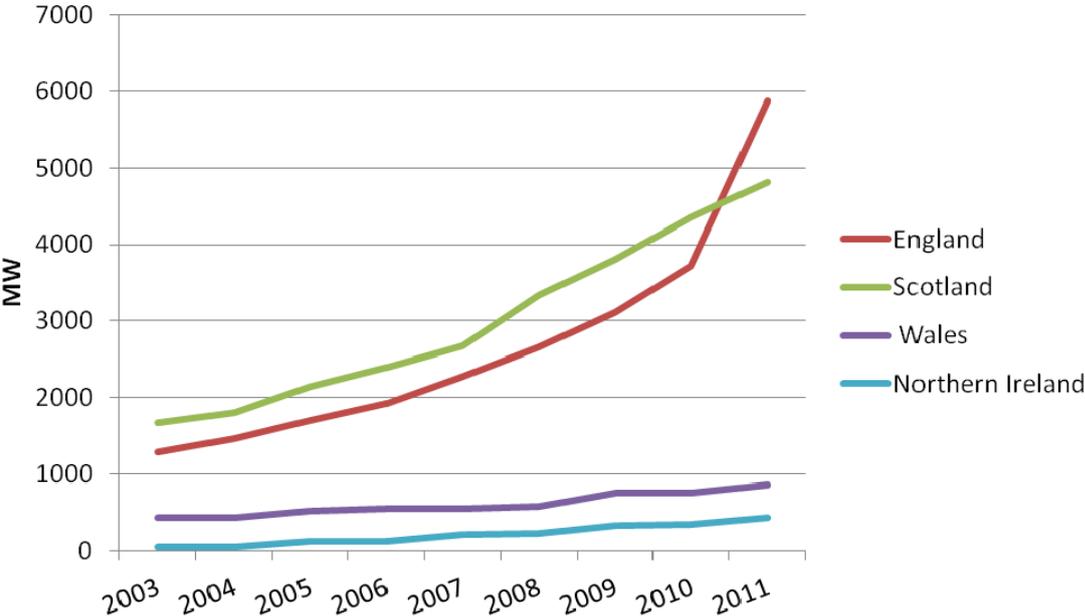
always given Scotland’s performance with renewable energy a slight head start compared to other parts of the UK (see Tables 1-4 in Appendix 2 for further information). New on-shore wind capacity began coming on stream in the mid-1990s, with the first commercial wind farms becoming operational in England in 1991, Wales in 1993, Northern Ireland in 1994 and Scotland in 1995. Notable early concentrations appeared in Wales, which had some 150MW installed by the end of 1998, including the UK’s largest onshore wind farms at that time<sup>10</sup>. The other major source of new renewable electricity was landfill gas, mainly in England, an outcome readily attributable to the fact that England has more than 80% of the UK’s population (and therefore landfilled waste).

Annual data on renewable electricity development is not readily available for 1998 to 2003 – is this problematic for an assessment of the effects of devolution? Possibly not, given that projects coming on stream in this period were mostly conceived prior to the enactment of devolution legislation. Indeed, an analysis of party manifestos for the devolved administrations suggests little explicit concern with renewable energy issues among the major parties contending the first elections for the Northern Ireland Assembly or National Assembly for Wales in 1999<sup>11</sup>. In both, constitutional affairs dominated the first election and early years of devolution; in Northern Ireland, the Assembly was in suspension from 2000 to 2007, with energy issues continuing to be addressed through direct rule. Only in Scotland did any of the major parties go into the 1999 Scottish Parliament elections with energy agendas as a part of their platform. This continuity of attention helps to explain subsequent developments.

The data presented in Figure 2 below is a statistical echo of widely held opinions about the levels of renewable energy development in the different parts of the UK. Many of our interviewees felt Scotland to be leading the way, and the graph shows Scotland to have the highest level of capacity installed from 2003 through to 2010. Although England is ten times as populous as Scotland, it did not overtake it in terms of installed renewable capacity until 2010. Figure 2 also shows the negligible level of renewable energy installed in Northern Ireland by 2003 – less than 50MW.

The performance of Wales and Northern Ireland compared to Scotland drew wider criticism from our interviewees, with the lower levels of capacity installed and lower annual increases being seen as problematic by some. Indeed, while we argue below for a more nuanced understanding of these figures, it is clear that a wide range of stakeholders take their cue on the relative performance of the devolved administrations from this data.

**Figure 2** Installed renewable energy capacity (MW). (Source: RESTATS historic regions data.)



What the data also shows is that, if one is to judge how devolution has impacted on actual development rates for renewable energy for the period 1999 to 2010, then the story is substantially one of differential development rates for *onshore wind* (see Appendix 1). This is very much the case for Scotland, where onshore wind makes up almost all of the increased capacity in this period (growing ten-fold from 308MW in 2003 to 3016MW by 2011). Onshore wind makes up the majority of the new capacity in Northern Ireland and Wales, though landfill gas and co-firing of biomass makes a greater contribution than wind power in England. Offshore wind has become important for these three countries, but especially for England, at least until now. Solar PV grew very rapidly 2010 to 2011, mostly in England, but still amounted to less than 5% of the UK's total renewable energy capacity.

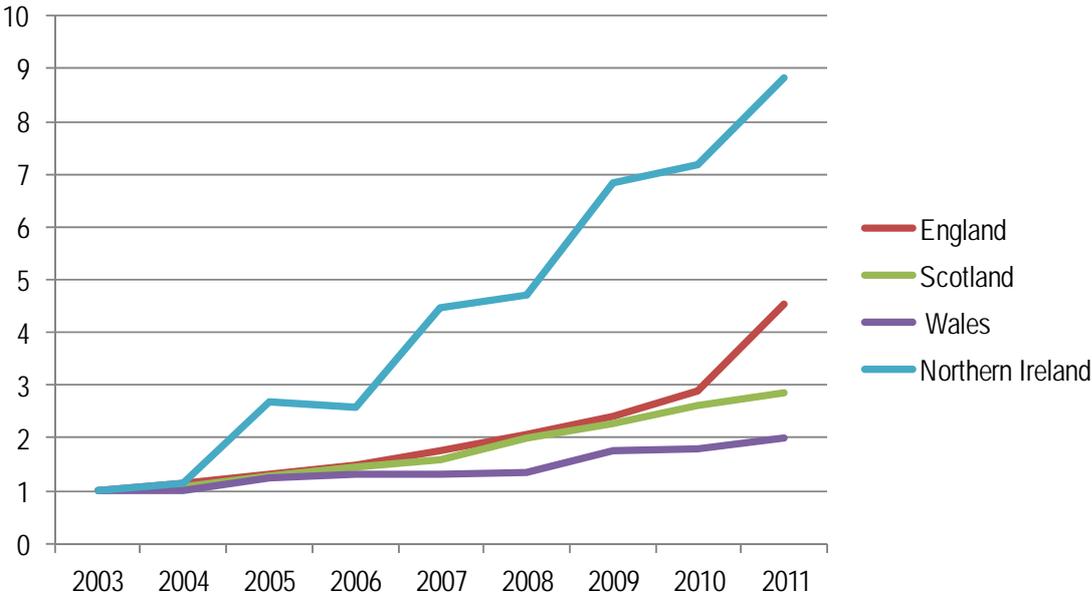
This technological perspective is important when one comes to consider how government actions may have affected development rates. It is also important if one looks at electricity generated rather than capacity installed, which favours technologies with a higher load factor. Thus in 2011 Scotland's renewable technologies generated close to 14,000 Gigawatthours (GWh), of which wind contributed slightly over half; in England, renewable energy technologies delivered more than 17,000 GWh, a higher figure mainly because wind, with its lower load factors, is a smaller proportion of the English renewable electricity technological mix, at 35%. For 2011, Wales generated just over 2 GWh of renewable energy (67% wind) and Northern Ireland just under 1 GWh, of which 90% was from wind (see Appendix 1).

**2.3 Different perspectives on the data**

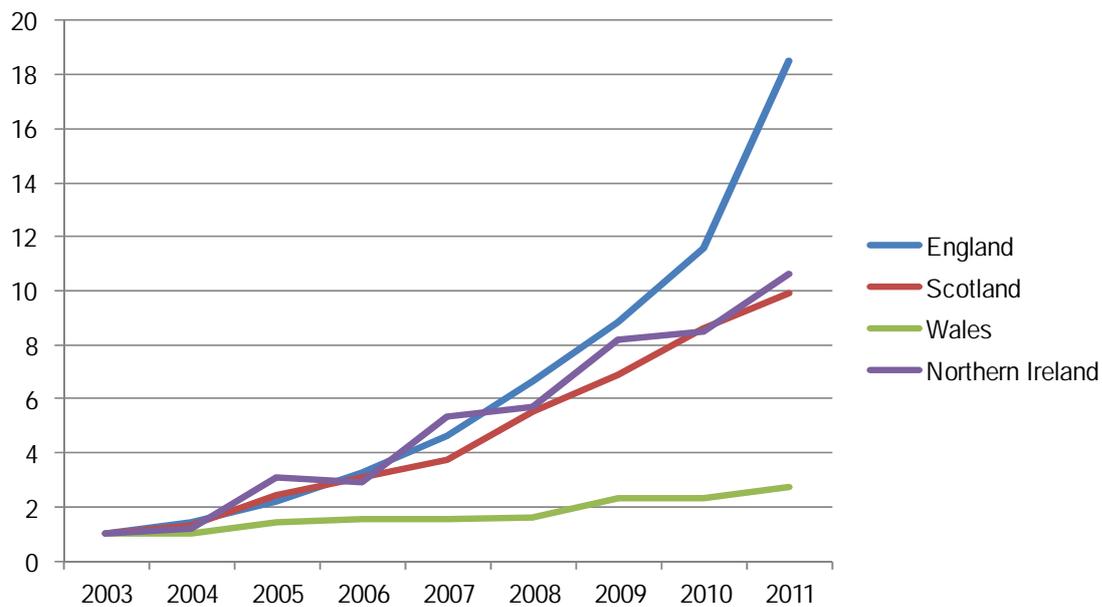
*Rates of change*

A different perspective is gained if the data is re-presented as an index of change, with 2003 taken as the baseline. Figure 3 presents the picture for all categories of renewable energy; Figure 4 presents a picture with landfill gas and various forms of biomass co-firing removed.

**Figure 3** Rates of total renewable energy installation across the UK. (Source: DECC Energy Trends; normalised at 2003.)



**Figure 4** Rates of renewable wind, wave, and solar capacity installation across the UK (Source: DECC Energy Trends, normalised at 2003.)<sup>12</sup>



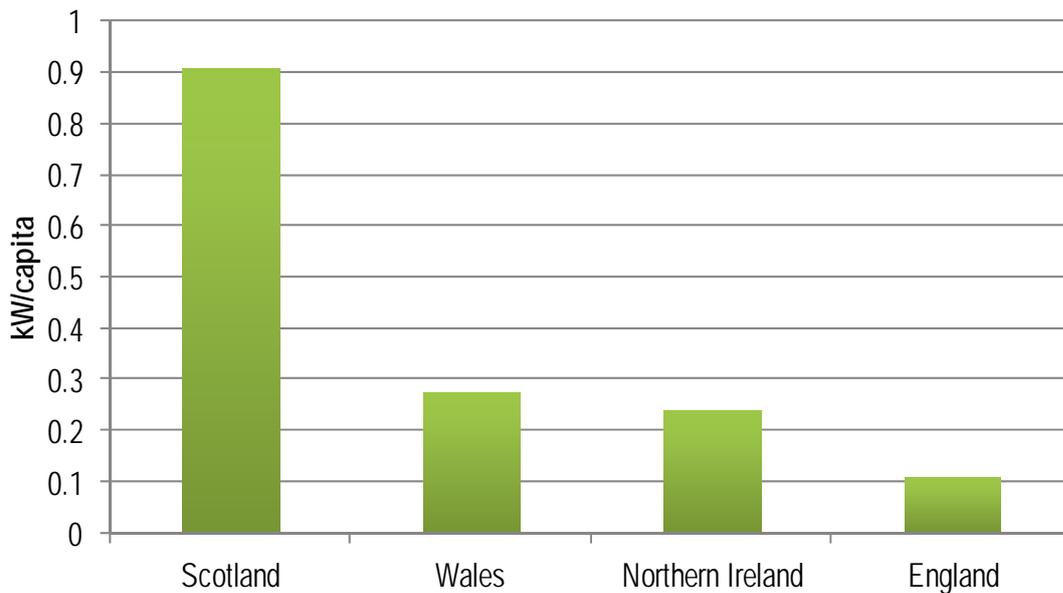
Viewed in this way, Northern Ireland stands out for achieving rapid relative growth since 2003, distorted somewhat by its negligible achievements at that time. If the base line is taken as 2007, which is the effective date of a stable devolutionary settlement, than its performance become less impressive. Scotland's relative growth in capacity installation is less meteoric when new installation is viewed relative to inherited hydro capacity. The consistently sluggish rate of relative growth in Wales over the period 2003-2011 is highlighted by these graphs, though downplays the progress made with onshore wind prior to 2003.

#### *Compared to population*

The graphs above provide an interesting insight into renewable development across the UK over the last 14 years and clearly raise some difficult questions over how the performance of each administration can be most effectively evaluated. Arguably, progress might be judged against the geography of each country. Figure 5 presents renewable electricity per capita (2011), which could be seen to further underscore the sense that Scotland's progress with renewable energy has far outstripped the rest of the UK. Development rates in England, though matching Scotland in absolute terms, are much the lowest when viewed against its larger population. The population ratio also shows Northern Ireland's development rates to be much more muted compared to Wales when based on per capita measures rather than percentage growth.

Progress per capita is insightful and has some merits as a benchmark (insofar as population is a proxy for energy consumption levels) but scarcely reflects the availability of renewable energy resources to be exploited in different parts of the country. Area might be read as a simple proxy for resource availability, given that most renewable energy resources are more extensive in their space requirements than traditional fossil fuels (one could say this of wind, hydro and indigenous biomass).

**Figure 5** Renewable energy installed per capita. (Source: ONS for census data; DUKES for renewable energy installation data.)



*The distribution of contributions*

One interpretation of the statistical data is that progress with renewable energy in the UK to date has been dependent on development outside England: especially the new capacity installed in Scotland but, when viewed in crude, per capita terms, Wales and Northern Ireland could also be said to ‘net contributors’.

In practice a key feature of the politics of renewable energy under devolution is that in all of the devolved governments the expansion of the sector has become an explicit objective of successive governments and dominant goal of policy. Renewable energy technologies are seen by devolved administrations – as they are by the UK government – as a vital and valuable tool for addressing address climate change, improving energy security and promoting green growth. Producing renewable energy for ‘export’ is a major part of the agenda in Scotland, with the SNP government flagging up the UK and potential European importance of low carbon energy from Scotland; the support for renewable energy ‘exporting’ is more implicit in communications from Wales<sup>13</sup>. While narratives of resource exploitation and unequal national contributions can be found across the UK, usually emanating from conflict over specific projects (mostly concerning onshore wind), as yet, they rarely feature in elite political discourse within the devolved governments.

So, far from relative over-contribution being seen as problematic, the setting of ambitious growth objectives for renewable energy (i.e. above and beyond the UK ‘norm’) has become a key feature of post-devolution renewable energy politics, which leads to another important way in which development rates might be judged.

**2.4 Progress against targets**

The main domestic target for renewable energy prevailing in the early years of devolution was that 10% of the UK’s electricity should be supplied from renewable sources by 2010.<sup>14</sup> As noted above, this was upped by the EU Renewable Energy Directive (2009/28/EC) to 15% of energy (implying 30% of electricity) by 2020. By 2011, only 3.3% of the UK’s total energy consumption came from renewable sources, with renewables contributing 7% of electricity generation.<sup>15</sup> Based on this rate of progress, a number of commentators are concluding that the UK’s 2020 targets will be missed for the nation as a whole<sup>16</sup>. The question then arises as to whether the success of renewable energy policy in the devolved administrations

should be judged against the UK's collective performance, the overall UK target, or the aims that the devolved administrations have each set for their own territory.

In Scotland the setting of ambitious national targets has been a key feature of a policy agenda spanning successive governments, which gives significant prominence to the expansion of renewable energy as part of a national development strategy. The Scottish Government was the first among the devolved governments to set a new target, back in 2000, of meeting 17.5% of Scottish electricity consumption from renewable sources by 2010 (SEDD 2000), and the next decade saw Scottish targets increased repeatedly. An important factor – and a distinctive facet of renewable energy policy dynamics within the UK – is that Scotland has actually managed to meet a succession of its own national targets set above the UK norm (UK RE Strategy DBERR June 2008): targets to meet 31% of electricity demand from renewables by 2011, and 50% by 2020 were met ahead of schedule. It seems that successful implementation in turn is driving higher targets and the Scottish Government has gone on to establish the goal of matching 100% of Scotland's electricity consumption from renewables by 2020<sup>17</sup>. The feasibility of meeting this latest target by the deadline has prompted a significant level of debate<sup>18</sup>.

In Wales, an intense focus on environmental strategy-making by the 2007 Welsh Government led to *A Low Carbon Revolution: The Welsh Assembly Government Energy Policy Statement* (WAG 2010), which announced a key aim to generate from renewable sources up to twice as much electricity annually by 2025 as was consumed in Wales in 2010. Technology-specific targets set in 2005 to attain an additional 800MW of onshore wind installed were not achieved by the target time of 2010.

Northern Ireland's first *Strategic Energy Framework* (2004) published by the Direct Rule administration committed the region to sourcing '12% of electricity consumption ... from indigenous, renewable sources' by 2012 and it also *pro rata* met the UK target of 10% by 2010 within the region. However, it was only in 2010 that a goal above the UK norm was adopted by the Northern Ireland Executive in its *Strategic Energy Framework*, to source 40 per cent of its electricity from renewable sources by 2020. Informed by all-island grid studies, by adopting the 40% target, Northern Ireland then matched the target adopted by the Republic of Ireland in 2009, with whom the region shares the island-wide electricity market and which provides a distinct set of relationships that influences energy policy and implementation in Northern Ireland. As with Scotland, the growing confidence of an administration to deliver on this agenda has meant that the most recent *Programme for Government 2011-2015*<sup>19</sup> elaborated the existing target by setting a number of interim goals (12% of electricity to come from renewable sources by 2012/13, 15% by 2013/14 and 20% by 2015, plus additional targets for renewable heat).

Altogether, ambitious target setting for renewable energy can be seen as one key outcome of devolution; and an important act of differentiation from Westminster. At the time of writing, all of the devolved governments had set aims for renewable electricity generation within their territory above UK norms which, if attained, would further cement the relative importance of renewable electricity generation in Northern Ireland, Scotland and Wales to the overarching UK position. The scale of these ambitions is one factor explaining relations between Westminster, Whitehall and the devolved governments around renewable energy have typically been cordial. The devolved governments have recognised the benefits of exploiting their renewable energy resources and committed to do so with apparent enthusiasm. However, questions over whether these national targets are attainable and/or desirable and the extent to which the devolution process is itself helpful in expanding the UK's renewable energy base are still largely unresolved.

## 2.5 Concluding remarks

In reviewing the data on renewable energy development we are not claiming that the effects of devolution on renewable energy can be answered by recourse to the statistics alone. Nevertheless, before we go on to elaborate on some of the core influences on this, it is worth highlighting a number of key points:

- To date, progress with renewable energy in the UK has relied significantly on the investment achieved in the devolved government areas, especially Scotland, but with important contributions from Wales

and Northern Ireland. In total, more than half of the UK MW installed is in Scotland, Wales and Northern Ireland and, given the targets set in those nations, this importance is unlikely to diminish.

- Ambitious target setting for renewable energy can be seen as one key outcome of devolution. All of the devolved governments had set aims for renewable electricity generation within their territory above UK norms.
- The contrasting development rates between England and the devolved areas for the period 1998-2010 is mainly a product of differential progress with a particular set of technologies – onshore wind – which places particular pressures on the capacity of governments to orchestrate investment and planning decisions within their territory. One should expect the role of government to change as offshore wind, solar PV, biomass or other technologies play a progressively bigger role.

What one cannot easily do from the kind of statistical review presented above is make causal connections i.e. to infer that the levels of renewable energy development in any part of the UK can be attributed neatly to actions by the government of that area. Two projects in Wales illustrate this point. Although renewable energy development rates in Wales have been slower than other parts of the UK, this picture will be changed quite dramatically once two major projects come on stream: the 576MW offshore wind farm at Gwynt-y-Môr (due to be commissioned in 2014), and the 299MW Pen-y-Cymoedd on-shore wind farm (due 2016). However, in terms of causation the development of the off-shore Gwynt-y-Môr wind farm arguably owes less to the actions of Welsh Governments than Pen-y-Cymoedd, and both rely heavily on actions and decisions taken in other government arenas<sup>20</sup>. Teasing out these causal stories is the role of the next section.

## 3 Powers and explanations

### 3.1 Powers

One vantage point for assessing how devolution may have affected the delivery of renewable energy is to grasp the extent to which the relevant powers which could be used to influence such energy investment have been devolved from Westminster. This is easier said than done. Although the overarching position in the UK is that 'energy policy is not devolved'<sup>21</sup> and major policy documents such as the UK Renewable Energy Roadmap embrace action across the UK as a whole, it does not capture the complexity of the underlying distribution of powers. Indeed, while some of the devolved administrations do not have the core competencies over energy policy, it has not prevented them all the issuing a range of statements, route maps, roadmaps and agendas for renewable and low carbon agenda for their own territory. If 'policy' is the production of statements of intent to guide decisions, then the devolved administrations have clearly been engaged in policy-making activities about energy matters; and there is no evidence that they have been at all trammelled in this kind of activity by Whitehall or Westminster.

The statement that 'energy policy in the UK is not devolved' can only be given a clear meaning by reference to the complex and asymmetric set of energy-related **powers** that have been conferred on the governments in Scotland and Wales since 1998 and historically to the Northern Ireland administration, compared to those which have been reserved by Westminster:

- In **Scotland**, devolution passed the scope to exercise power from UK Ministers to Scottish Ministers in any area not specifically withheld (or reserved) by Westminster. Energy policy straddles this dividing line, and key aspects are 'executively devolved'.<sup>22</sup> Westminster retains the power to set up market support systems and – through Ofgem – to regulate energy markets. However, Scotland has long had full control over most aspects of planning and discretionary economic development spending and, through the devolution process, has acquired powers to issue consents for power stations over 50MW and major grid lines from Westminster, and a degree of operational control over market support mechanisms, notably the Renewables Obligation (Scotland) (ROS).
- In **Wales**, the powers of the Welsh Government are more constrained, since they are an extrapolation of the competencies previously covered by the Welsh Office, which did not directly cover energy, and the power to make primary legislation is correspondingly attenuated. Although there is a team in the Welsh Government 'Energy Wales', staffing is small and much of its work involves reacting to/interacting with/delivering policy agendas driven from outside Wales. The Welsh Government's main actual powers lie in setting planning policy and overseeing planning for smaller energy developments (i.e. below 50MW), environmental regulation, and discretionary economic development spend. As with all of the other devolved administrations, it has scope to integrate sustainable energy agendas into other sectoral activities (such as utilising micro-generation in public buildings).
- In **Northern Ireland**, energy policy has historically been devolved to the Northern Ireland administration as this was not noted as an exempted matter. During the Direct Rule period, energy legislation passed at Westminster for the rest of the UK was virtually replicated for the region – such as the move to privatisation in the early 1990s. This distribution of powers has not been fundamentally altered by the creation of the Northern Ireland Assembly and Executive resulting from the Peace process, with the exception that nuclear power was exempted by the power conferred on them by the Northern Ireland Act 1998. Although devolution was not firmly established until 2007, the Northern Ireland Executive does therefore have full powers to design and operate systems of market support and regulation, full consent powers over grid lines and electricity generating stations and spatial planning.

To add to the complexity, devolution entails a different set of arrangements for offshore energy development, renewable or otherwise. In the territorial waters off England and Wales (and in the

Renewable Energy Zone<sup>23</sup>) any energy project between 1–100MW is consented by the Marine Management Organisation, while any applications for projects over 100MW are processed by the Planning Inspectorate. Welsh Ministers have jurisdiction over projects in inshore waters. In Scotland, consents for inshore and territorial waters are administered by Marine Scotland on behalf of the Scottish Government. In Northern Ireland, the Department of the Environment is responsible for marine licensing. The Crown Estate manage the seabed up to 12 nautical miles across all of the UK's waters and it controls the leasing process for new wind farm projects in this area.

EU policy is also an important feature of the energy policy landscape: some of our interviewees suggested that the targets of the Renewable Energy Directive are the central feature of UK renewable energy policy, and steer the hands of all the main governments. Where EU legislation is concerned, the devolved administrations are engaged mainly by liaising with the centre in formulating an agreed UK position<sup>24</sup>. In areas like environmental regulation and infractions, or where EU regulation may affect certain industries, then the devolved administrations may have a wider role.<sup>25</sup> A key feature of the policy context in Northern Ireland is grid and market connectivity with the Republic of Ireland, a set of experiences which has given the region an important role within the UK, and with the EU, in debates about cross-border grid development. Outwith more formal lines of representation, the devolved administrations are increasingly active in the European Union, forming links with like-minded countries and pursuing joint projects. An example of this is the Irish-Scottish Links on Energy Study (ISLES<sup>26</sup>), a joint project between the Republic of Ireland, Scotland and Northern Ireland funded through the EU's INTEREGG programme to explore the feasibility of offshore grid investment between Ireland and Scotland. Another example is how the Scottish Government EU office has been working to raise the profile of marine renewables at the European level. In another form of inter-governmental coordination, the British-Irish Council has also become a forum through which energy issues are discussed and common positions negotiated.

Overall, despite the 1997-2010 Labour government's reputation for centralised styles of public management, exercised through targets, a key finding from our analysis is that the UK Government (through DECC) has not sought to orchestrate the delivery of UK-wide renewable energy targets by intervening in the process of target-setting in Northern Ireland, Scotland and Wales. As we noted above, the tendency of the devolved governments to aspire to volumes of renewable energy higher than UK targets has meant that targets per se have rarely been the subject of discussion between the devolved administrations and UK governments<sup>27</sup>. DECC has been content to be a policy-taker in this regard and, some interviews suggested, could only look positively on the targets of the devolved administrations as a contribution to meeting the UK's EU targets.

Within the UK, the allocation and exercise of powers appears to have been a more important topic of cross-government debate in the context of devolution – occasionally becoming controversial – than the production of policy statements. This suggests that the differing distribution of government powers for renewable energy may help explain some of the outcomes we described in Section 2 above.

### 3.2 Interpreting the explanatory power of 'powers'

It would be tempting to proceed with the analysis as though one could straightforwardly judge 'progress' with renewable energy in each part of the UK against an asymmetric but clear starting line, defined by the powers available to each government – England/Westminster, Northern Ireland, Scotland and Wales – to govern the delivery of renewable energy within their territory. Though powers are important in framing the capacity of government to pursue particular goals, a host of other factors are also important in shaping how power can be exercised.

#### *Multi-level, multi-actor governance*

Delivering renewable energy is clearly a multi-actor accomplishment, in which the emergence and implementation of projects depends on the operation of markets, policy and political actions across more than one scale of government, in which alignments may be smooth or obstructive. These relations are not

just between the devolved administrations and Westminster. In Northern Ireland, technological and market interconnections with the Republic are just as important; the European Union is also important; many of the key business actors are multi-nationals, in which the prospects for renewable energy development in the UK may be assessed against prospects elsewhere. Within each territory, relations between national and local government, and with local communities, are also important.

### *Intergovernmental bargaining*

An emphasis on powers held can lead to an unduly inward-facing perspective, looking at actions of the devolved administrations within their own territory. It is also important to give attention to inter-governmental relations: how do the devolved administrations interact with decision-making arenas at UK level?; are they inclined or able to influence the formulation or operation of UK-wide policies? Indeed, the best way of achieving good outcomes for the devolved administrations may not always be to press, confrontationally, for more powers but to ensure that UK-wide policies better meet their domestic goals<sup>28</sup>.

The devolved administrations have opportunities to engage with policy development and implementation processes in Westminster, both through formal mechanisms (such as policy consultations) and informal dialogue and negotiation: Electricity Market Reform is one example (see below). Energy issues also arise in the Joint Ministerial Committee. The devolved administrations will not be the only actors seeking to shape UK energy policies, and they may not always be the most influential. It is important to note that the wider governance of energy, including renewables, is also relevant to a set of cross-border institutions. There is the British-Irish Council, the latter of which in 2010 set up a Sectoral Group on Energy, and has a particular interest in electricity grid infrastructure and marine renewables. DECC, the Welsh Government, Scottish Government and Northern Ireland Executive are all represented. Interestingly, energy has not featured within the discussions of the North-South Ministerial Council in Ireland, with all-Ireland energy issues dealt with as they arise, with a reluctance amongst some political parties to further institutionalise the relationships with the Republic of Ireland.

### *Action and resistance*

One further problem with conceiving of the issue as a 'four-way race' is that it assumes that progress with renewable energy can be benchmarked against a particular norm, and that – in the UK context – England/Westminster provides this benchmark. It is problematic because many would argue that the context for renewable energy development in England has become markedly more difficult in recent years, exemplified by political hostility to onshore wind in sections of the Conservative Party (see below). The impacts of the devolved administrations might thus be judged not just in terms of positive achievements, but in terms of whether they can buffer renewable energy development against what they feel to be unhelpful policy developments elsewhere. The wider question of whether the British 'mode of provision' for renewable energy development is inherently effective is a subject we return to in Section 6 below.

Before we begin exploring the specific causal effects of devolution, we review five broad theoretical perspectives which we believe help to explain what has happened<sup>29</sup>: to highlight why certain variables matter, and to understand what affects the disposition of government, at any level, to use the powers at their disposal in a particular way, and what one might expect the outcomes to be.

### *Institutionalist perspectives*

Clearly, the allocation of relevant powers from 1998 is not the only factor that defines the 'starting line' for renewable energy development. The capacity to design and pursue effective strategies for renewable energy also reflect a wide set of institutional arrangements that were evolving prior to devolution - administrative capacity and expertise; governance cultures (within the industry, local government, regulators etc.); 'indigenous' agencies and businesses concerned with energy issues; grid networks; development sites amenable to energy uses; government conventions and 'framing' of policy problems, and so on<sup>30</sup>. This is not to say that post-devolution outcomes are simply a path-dependent extrapolation of

the pre-devolution situation, but one should expect institutional arrangements prevailing prior to 1998 to influence what happens afterwards. The way that renewable energy is organised within the devolved administrations – as a sector in its own right, as a branch of environmental policy, or as a subset of economic policy, or rural policy – is also important.

### *Policy networks*

Many political scientists seek to explain policy development in terms of the scale, membership and organisation of networks of actors associated with a given sector or energy pathway, their access to the policy process, resources, and the types of agendas they pursue<sup>31</sup>. To give a simple example, one would expect governments to be more likely to pursue policies in favour of emergent renewable energy technologies if there is a network of well-resourced actors sharing and pushing for this objective. Alternatively, one would expect renewable energy policy to be less effective where policy networks are dominated by well-resourced, incumbent energy business, with strong interests in fossil or nuclear power, and ambivalent commitments to renewables. The territorial dimensions of these networks is especially important to understanding devolution, and one should be especially attentive to whether an issue is mobilising a group of actors that are capable of collaborating and delivering outcomes *within a particular territorial arena*. The devolved governments may have an important role in creating arenas and facilitating participation<sup>32</sup>, but much also depends on how, say, the industry organises itself to represent UK, or Welsh, Scottish or Northern Irish interests.

### *Instrument choice and flanking conditions*

Much of the debate on energy policy dwells on relatively abstract comparisons between one set of instruments and another (such as between tradable certificates and feed-in tariffs). However, analysts also talk of the ‘flanking conditions’<sup>33</sup> which can greatly affect how instruments perform. These include the levels at which economic instruments are set, the degree of political commitment and consistency with which any support system is operated and how regulations and procedures governing the operation of a policy are organised and carried out. Even where devolved administrations cannot alter basic structural features of policy instruments set by the UK government, they could influence outcomes by shaping these flanking conditions.

### *Socio-technical systems and energy transitions*

Increasingly, social scientists examining long-term policy changes use ideas from ‘transition studies’, which help analyse how new energy systems (such as renewable energies) expand from niches to become dominant, supplanting previous technologies. The emphasis on niches would seem to chime with devolution, insofar as the creation of ‘sub-national’ government allows a diversification of institutional and policy conditions in which new technologies and new practices might emerge. But transitions perspectives also consider the difficulties of changing the wider ‘socio-technological regime’: a relatively stable set of arrangements, in which market and regulatory practices, prevailing infrastructures, and incumbent actors operate in ways to maintain the dominance of particular technologies.<sup>34</sup> At one level, transition theory highlights that many of the factors shaping the scope for renewable energy are part of a wider socio-technical regime which cannot readily be steered by governments at any single level. It also alerts us to the importance of examining not just how the devolved administrations promote renewable energy, but also whether they tend to act in ways which reinforce prevailing socio-technological regimes – perhaps by supporting nuclear and fossil fuel development – or resist them. Such actions may also affect the renewable energy pathways that emerge.

### *Regions and sustainability*

Our last set of theories is the view that smaller-scale, sub-national government is likely to be better at promoting sustainable development, because it is ‘closer’ to the territory that is being governed, more sensitive to environmental, economic and social conditions, and thus more disposed to pursue well-designed, integrated solutions. Such a policy theory is often promoted by the devolved administrations

themselves<sup>35</sup>, and the emergence of low carbon regions is showing how smaller-scale action can be vital in knitting together electricity generation, heat flows, energy storage and transport to radically cut reliance on fossil energy. Multi-level governance systems can offer opportunities: allowing government at lower levels the scope for innovation and progress where the central authority is dragging its feet<sup>36</sup>. Much depends, however, on the mode of renewable energy development being promoted. An emphasis on large-scale facilities may be associated with the construction and assertion of new representations of 'the national interest', which may then be used to set aside 'local' objections, but which also risk exacerbating social conflict.

It is not our intention in this document to produce a heavily theoretical account – the value of these ideas will be explored in greater detail in our subsequent work. But they have guided our thinking in the analysis below, as we start to tease apart some of the causal effects of devolution.

## 4 Causal factors

In this section, we dig a little deeper into the data we have generated from our research project<sup>37</sup> to offer insights into some of the key issues that we think help explain the differences in renewable energy delivery between each of the devolved administrations in the UK from 1998 to 2012. This covers the political factors as well as areas of specific policy intervention, such as market support, planning and grid investment.

### 4.1 Renewable energy in post-devolution politics

The move to devolved government is clearly motivated at least by a desire to increase the effectiveness of political representation and to allow key policy decisions to be made at a lower tier of governance to better reflect more local social, economic and environmental conditions. It will therefore be nothing of a surprise to understand that the arenas of devolved government are as politically charged as one would find at the level of the nation state. Clearly each administration will attempt to reflect the particular concerns and circumstances of that territory, display greater or lesser degrees of political support for particular aspects of energy policy or even be locked into particular ways of acting due to pre-devolution institutional factors. Illustrative examples are that the politics of renewable energy in Northern Ireland are played out in the shadows of the traditional divisions over the region's constitutional status, which has strongly shaped the institutional form of government and its abilities to tackle renewable energies in an integrated way.

Another example that has emerged strongly from many of our interviews was the fact that Scotland was seen to be 'ahead of the game' when it came to renewable energy, compared to other parts of the UK, and as one interviewee put it: "It's no secret that everybody looks towards Scotland as being the leader..."<sup>38</sup>. But what does leadership actually mean and what sustains it? To address this, we review key features of the politics and governance of renewable energy.

#### *Political support and problem framing*

If devolution is to have any effects, one should expect to see this in the positions and actions taken by the main political parties. In broad terms, energy issues generally – and renewable energy in particular – have had a higher profile in the manifestos of most of the main parties going into the elections for the devolved governments than has been the case in Westminster, especially in Scotland and Wales, and especially from 2007 onwards.

Within this broad pattern, one should not be surprised to find that it is in Scotland – and with the Scottish National Party (SNP) – that this political interest in renewable energy has been longest-standing and most sustained, leading many interviews to identify devolution as having been integral to the prioritisation, focus and wider efforts at economic and societal alignment around renewable energy in Scotland<sup>39</sup>. For example, the 1999 SNP manifesto identified renewable energy as a key 'indigenous high growth sector'<sup>40</sup>. Party manifestos from the 1999 elections in Northern Ireland and Wales say virtually nothing on energy, and relatively little in 2003; a reflection of the relative marginality of energy issues during the earliest years of devolution in these areas. Of all the mainstream political parties, energy has long been of most central significance to the SNP, for whom it is a central part of a broader political project of independence<sup>41</sup>. A crude conclusion might be, therefore, that devolution has enhanced the development of renewable energy in Scotland, because it enabled the coming to power of a political party that has consistently prioritised energy development and which would have otherwise remained a minority voice at the UK level of governance.

For a number of reasons, this explanation is too simple. Interviewees identified a relatively high degree of cross-party support for significant expansion of renewable energy development across the Scottish Parliament. The Scottish Labour party, Liberal Democrats and Green Party have all been supportive of this agenda. For example, a promise to 'increase the proportion of electricity derived from renewables in Scotland to around 18% by 2010' was made in the Coalition Government's 2001 Programme for

Government (Scottish Executive 2001, section 2.11).<sup>42</sup> If Scottish interviewees associated the Conservative Party with a coolness towards renewables, this was still 'less vehement ... like you get down south'<sup>43</sup>. Such political conditions help support a sense of long-term consistency for investment in Scotland.

In terms of policy framing, it may have been helpful that, since devolution, successive Scottish Governments have been pretty consistently opposed to nuclear new-build thereby enabling a closer focus on renewable energy technologies.<sup>44</sup> That said, Scottish Governments have also been strongly supportive of developing fossil fuel resources, and Carbon Capture and Storage (CCS), a development pathway that would be synergistic with goals of the major oil and gas sector<sup>45</sup>. The energy future for devolved or independent Scotland is not energy autarchy, but economic success based on energy production and export in an integrated market and grid system. In NI there was a strong anti-nuclear message in the manifestos of the nationalist parties – not because they were pro-renewables but because this was rather symbolic of a resentment to British influence on the island and strongly focussed on the pollution effects of Sellafield on Ireland. These fears seem to have abated as the British state became more associated with resolving the peace process.

Although one can find plenty of supportive voices for renewable energy in all of the other devolved administrations, and at UK/England level, it is difficult to match this longevity and consistency of political support. In Northern Ireland, constitutional issues and suspension were the dominant issues until 2007. The power-sharing arrangements of the Northern Ireland Executive, in which ministerial portfolios are allocated across the parties, has tended to mean that it is the party holding the energy portfolio (which itself sits within the powerful Enterprise, Trade and Investment department, DETI) that has given it most serious attention, working against policy integration and the very salience of cross-party support. That said, the political agenda for energy in Northern Ireland is very much articulated in terms of specific regional concerns; energy security, fuel poverty, opportunities for rural development and economic growth, with the former becoming much stronger factors in recent years. Although Northern Ireland operates within a successful single electricity market and is looking to strengthen north-south grid inter-connection to support this, either side of the main political traditions tend to articulate energy solutions according to their dominant north-south or east-west orientation. However, as an indication of the relative political priority placed on energy issues, in the allocation of Ministerial portfolios for the current Executive, the second largest party, Sinn Fein could have taken control of DETI, but instead chose the ministerial portfolio for agriculture.

Welsh Governments from 2003 onwards have expressed strong support for renewable energy, with a close conjunction forged between renewable energy and climate change mitigation between 2007 and 2011. More widely, however, the main party in Wales – Welsh Labour, which has been the major party in all four Welsh Governments – has come to share the Westminster government's more accommodating attitude towards nuclear power, a stance shaped by the prospect of jobs attendant on nuclear new-build in Anglesey. Assembly politicians generally have shown a disposition to identify all energy development – including new gas power stations or other fossil fuel facilities – in terms of their investment and employment benefits to Wales, with their emphasis on the local jobs dividend having sharpened since 2011.

Arguably the most significant shift in political stance towards renewable energy has occurred since the 2010 general election at Westminster, with a swing to the Conservatives and a large number of Conservative MPs articulating opposition from rural constituents to the further expansion of onshore wind. Fiscal austerity has also been used by the Treasury to rationalise a more critical stance on climate change and environmental policy, while galvanising the support for nuclear power that first emerged under Labour. The politics of renewable energy in Westminster since 2010 have thus become more difficult, in ways which are beginning to accentuate contrasts with Edinburgh, Cardiff and Belfast.

## *Leadership*

In Scotland, while many saw leadership as symbolised by the 'ambitious targets' for renewable energy, others also recognised the personal commitment and expertise of Alex Salmond as being a critical factor. This has undoubtedly been helped by his background as an energy economist and the fluency with which he speaks on these matters has given a widespread impression that he is someone 'who has essentially gone gung-ho for renewables from day one'<sup>46</sup>. One key effect of devolution is that in Scotland, at the present time at least, political power has fallen to a party with a long-term interest in energy issues and a technical grasp of the issue. But companies are also positive about the commitment of the civil service team to the renewable energy agenda. The impacts of the strong leadership in Scotland are a clear dynamic in driving the renewables agenda within that territory, but this has been articulated so clearly that it also seems to be having positive impacts acting as an exemplar and motivating factor for other devolved jurisdictions to push forward on this agenda<sup>47</sup>. There are of course, also some negative impacts from Scotland's leadership in this area, ranging from blatant political envy<sup>48</sup> to lost investment opportunities for some other territories due to the luring impact of the Scottish policy regime<sup>49</sup>.

In Wales, political leadership was seen slightly differently. There was much admiration for Jane Davidson AM (the Minister who held the environment and sustainability portfolio from 2007 to 2011, which included energy), who was seen as instrumental in forging new, clear strategies for renewable energy, and raising the profile of climate change. Beyond this, industry and other commentators were more sceptical about the capacity and willingness of Welsh Government leaders to demonstrate leadership, by which was meant backing the supportive statements made about renewable energy, even in the face of public dissent. The move by the current first minister, Carwyn Jones, to make energy part of his portfolio is seen as symbolic of a new emphasis on renewable energy delivery. However, intense protests about major on-shore wind and grid development in mid-Wales – with electoral consequences in that part of the country<sup>50</sup> – appears to have pushed the Welsh Government leadership onto the defensive (see discussion of planning and grid, below). There was a National Assembly Sustainable Energy Group formed, which sought to be cross-party, but it failed to attract consistent ministerial buy-in – unlike Scotland – and folded in 2010.<sup>51</sup>

The Welsh Government's focus on renewable energy must also be seen within a broader, pragmatic approach to energy development *per se* – embracing major nuclear and fossil investment, as noted above – and the long-standing concern to manage the effects of environmental regulation and energy costs for Wales's energy intensive industries.

In contrast, in Northern Ireland leadership was seen to be a critical missing dynamic and the government was criticised by some industrial interests for not being proactive and never really "getting ahead of what was going on"<sup>52</sup>. While it is clear that there was a high degree of consensus amongst politicians and the wider policy community that the region should do everything it can to promote renewables, there was a concern amongst some of our interviewees, partly informed by the contrast to Scotland, that there was no overall vision, champion or political leadership in this area. This may be partly down to the fact that energy responsibilities are fragmented across several government departments, under control of different (and antagonistic) political parties<sup>53</sup> with relationships governed by an attitude of "we get on with our business and you get on with yours"<sup>54</sup>. This is also influenced by the suggestion that renewables do not appear to be "on the political radar"<sup>55</sup> in any meaningful way, and a failure amongst politicians to articulate a unique selling point of this that would appeal directly to their various political constituencies.

A result of the lack of obvious political leadership is that the agreed renewable targets have taken on increased significance as a rallying and coordinating point for renewables policy, in a government system that has notoriously been bureaucratically-led<sup>56</sup>.

## *Shape of the Policy Community*

Whether governments pursue certain agendas, or sustain momentum, can be closely linked to the shape of the 'policy community' i.e. the variety of actors, including government, interest groups, NGOs and the members of the 'attentive public' that converge around a specific issue, the resources that they have

available, and their access to the policy formulation process. Under devolution then territorial organisation of the key players – the extent to which they are represented within particular areas of the UK – will also be important.

In Scotland, there is a strong sense that a policy community had been established around energy development, including renewables which, as well as effective, was small overall, with as few as ten key individuals playing a strategic role<sup>57</sup>, and accessible, at both political and officer level, right up to and including the First Minister, especially for the 'sustainable energy business community'. This enabled a high level of business engagement in the energy agenda. This small size and accessibility was compared positively with London, in which the policy-making arenas were bigger and more diffuse, and where the relationships between key departments – DECC, DCLG, The Treasury – became more important. The high calibre of the civil servants dealing with energy issues was also raised: 'always there at the front of the queue with the intellectual ability to grasp the implications'.<sup>58</sup>

Our research encountered many positive views about the way that the Scottish Government has mobilised a collaborative relationship with business, through the Energy Advisory Board, formed in 2009, for which there is a Renewable Energy Leadership Group, but also the Forum for Renewable Energy Development in Scotland. The EAB was seen as one of most important arenas for discussion – more so by some than the Scottish Parliament – and helpful in mobilising business engagement.

Important to the effectiveness of this policy community is that the business sector felt an incentive to participate, which says much about significance of this institution and of access to Scottish Government generally. As one interviewee put it, 'it's about convergence of interest and capability and opportunity, to be frank'.<sup>59</sup> What will have assisted these arrangements is the persistence of major energy businesses, either still owned and run from Scotland (SSE), or which maintain a major presence in Scotland (ScottishPower, bought by Iberdrola in 2006<sup>60</sup>), as well as legacy of agencies from pre-devolution: Scottish Enterprise and, an early mover in community renewable energy, Highlands and Islands Enterprise.

The political climate created by the Scottish Government appears to be paying dividends in terms of inward investment. Spanish company Gamesa are to invest £125m in an offshore windfarm manufacturing facility in the port of Leith<sup>61</sup> and have already invested £12.5m in the Offshore Wind Technology Centre on the outskirts of Glasgow<sup>62</sup>. Mitsubishi have invested £100m in a Scottish research and development centre in Edinburgh for developing hydraulic technologies for offshore wind turbines.<sup>63</sup>

It is perhaps a further commentary on the high degree of elite coherence achieved around national energy agendas for Scotland that the prospects of an independence referendum was having less effect on investor confidence for the renewable energy sector than Electricity Market Reform.

The small scale and accessibility of the policy community in Scotland was replicated in Wales and Northern Ireland where interviewees from businesses and NGOs reported an ability to easily secure one-to-one meetings with key ministers to discuss particular concerns and issues. The difference with Scotland of course is that without a larger and more ambitious renewables aspiration, the efficacy of these interactions has less leverage.

Moreover, while commentators also feel that the Welsh Government has been less successful than the Scottish Government in bringing business interests into policy formulation and implementation debates, one also has to consider the wider characteristics of the sector. Wales lacks the large, domestic energy businesses that have a presence in Scotland. Moreover, the renewable energy sector itself has organised itself in important but distinct ways across the UK. In Scotland, a cross-technology trade association Scottish Renewables has been in place since 1996, offering a unified focus for the sector and its relations with government. In England and Wales, the biggest trade association has been RenewablesUK, which grew from an initial focus on the wind sector. Within that, interests in Wales have mainly been dealt with through a single officer, whose prime role had been to work to support the implementation of major wind projects in the Welsh Government's designated development zones. Only more recently has RenewablesUK Cymru been given the kind of staffing needed to be active in an array of policy and media arenas in Wales.<sup>64</sup>

### *Concluding remarks*

The main conclusion from the above review is that the promotion of renewable energy enjoys a stronger and more sustained level of elite coherence in Scotland than in other parts of the UK; an institutional environment which includes political leadership but which is by no means reducible to it, embracing also the capacity of government, the positions and policy framings adopted by the main parties, and the wider contours of the policy community.

The review above is an important qualification of the dominant thrust of much energy policy analysis, which sees outcomes in terms of the intersection of technology and economics. As policy analysts regularly conclude, policy outcomes can be 'affected more by the institutional arrangements emerging from the political process than the technical characteristics of the instruments employed'.<sup>65</sup> These factors have been a strong influence on the most obvious instruments that the devolved administrations have attempted to control, namely financial incentives and planning policy/consents. Whatever intrinsic qualities of particular instrument choices or approaches, the political and institutional context prevails on the consistency with which they can be deployed.

## 4.2 Market support and other financial assistance

### *Differentiating UK norms?*

Almost everywhere in the world, the provision of public support has been decisive in assisting the development of renewable energy technologies that would otherwise find it difficult to compete in energy markets. By and large, market support systems within the UK have been designed in Westminster, and thus apply across England, Scotland and Wales. Northern Ireland has full autonomy in this sphere but in practice has been bound into the UK system. Nevertheless, it is important to consider how devolution intersects with the operation of market support, both in affecting the setting and operationalisation of these instruments, and with policy formulation processes in Westminster.

The first comprehensive system of market support for renewable energy - the Non-Fossil Fuel Obligation (NFFO) - was in fact operated in a decentralised fashion, with separate rounds being run in England and Wales and Scotland; Northern Ireland ran its own version, the NI-NFFO. Running from 1990 (1994 in NI), however, NFFO is widely seen as unsuccessful: its competitive bidding structure failing to stimulate investment or help new entrants, favouring larger companies and the best developed technologies of landfill gas and onshore wind – the latter incentivised to adopt the windiest sites, often in valued upland landscapes.<sup>66</sup> Decentralised operation made little difference to this picture.

The system of support that replaced it, the Renewable Obligation, introduced in 2002, underpinned an increased rate of growth in renewable energy development. Northern Ireland introduced its own parallel scheme, the Northern Ireland Renewable Obligation (NIRO), in 2005 under the Direct Rule administration. In many respects the RO, like the NFFO before it, has operated in a broadly integrated fashion across the UK<sup>67</sup>. However, given devolution, the legislation establishing the RO executively devolved arrangements to Scotland, and fully devolved them to Northern Ireland. Consequently, the Scottish Government did become able to exercise some control over how the RO mechanisms operated in Scotland. Within the UK, the Scottish Government led the way in introducing banding into the ROC system to provide more support for technologies such as wave and tidal power that needed further work on upscaling and commercialisation, and thereby also give additional long-term certainty on support levels. These actions took effect in 2009, since when wave technologies have been eligible for 5 ROCs in Scotland and tidal 3 ROCs, compared to 1.0 in England and Wales (although rates in England and Wales have now been matched with Scotland).

Northern Ireland has also altered the banding of its NIRO system – first in 2010 it altered the banding for small scale onshore wind, hydro and solar photovoltaic to reflect the fact that the Feed-In Tariff introduced in the rest of the UK did not apply in Northern Ireland. In 2012 it increased the ROCs available for anaerobic digesters, with 4 NIROCs being available to schemes up to 500kw and 3 NIROCs for plants between 500kw and 5MW (differing from the 2 ROCs offered in the rest of the UK<sup>68</sup>, seen as a response to the powerful agricultural lobby in NI and a way for it to better cope with more stringent environmental regulation resulting from the Water and Nitrates Directive). The context for NIRO is also different in that the wind industry has noted that it offers a better return for schemes compared to those south of the border and developers have looked to the north where they can develop<sup>69</sup>, giving a more competitive edge to renewables development in Northern Ireland and enhancing the development outcomes of its market support scheme..

Welsh Assembly politicians have made much of this ROC differentiation. It has been presented politically as a reason why renewable energy development is ahead in Scotland, and as illustrating the lack of parity in the devolution settlement between Wales and Scotland. The effects of ROC differentiation between the nations are arguably more subtle than this.

At one level, what the Scottish government has done with the RO has helped to sustain wider arguments in favour of structuring support systems to give more support to emergent technologies and against Whitehall's conventional opposition to 'picking winners'; an argument which risks reproducing a situation in

which mature technologies and bigger companies tend to dominate.<sup>70</sup> Subsequent RO Orders have maintained banding but, in so doing, have reharmonised ROC rates across England, Wales and Scotland; Scotland's higher ROC levels for marine renewables now apply in England and Wales too, realising the Welsh Government's desire for parity.

The effect of ROC differentiation on actual renewable energy deployment in Scotland could be seen as a more confined issue: the effects of higher ROC rates for wave and tidal power. Numerous interviewees, including those within the sector in England and Wales, felt that this had indeed, ensured that significant research, development and commercialisation facilities for these technologies had come to locate in Scotland on the back of this. In our interviews in Northern Ireland, some industrial interests in marine energy also noted the impact of the increased ROCs in Scotland for marine energy, which left local companies "feeding off the breadcrumbs"<sup>71</sup> that were available from the resulting investment activity in Scotland. This might give Scotland an advantage if this early development work turns into large-scale development in Scotland, but the effects on renewable energy capacity installed to date have been limited: the technologies are still in the early stages of scaling up, demonstration and commercialisation.

Arguably the biggest effect of the RO on renewable energy installation rates in Scotland derive not from ROC differentiation, but from the effects on onshore wind, an established technology, and a common ROC rate of 1.0/MW. Scotland especially has benefited from the fact that the costs of the RO are shared by end-users (consumers) across England, Wales, Scotland and Northern Ireland, which creates a pool of supporting resources that can be channelled to investments anywhere in the four countries. It is this 'socialisation' of costs that has enabled the more rapid, spatially concentrated development of wind power in Scotland (and, more emergently, in Wales and Northern Ireland) to take place: market integration across the territory. However, it seems plausible that the Scottish Government's use of ROC differentiation has a wider symbolic value, even to wind energy investors, signifying a general willingness on the part of the Scottish government to back its renewable energy ambitions with action. The Scottish Government also announced its revised ROC levels in advance of DECC, for England and Wales, to maintain a firm basis for investment as far as possible.<sup>72</sup>

### *Influencing policy change?*

After more than a decade of policy continuity, the RO is to be phased out from 2014 and, since 2010, preparations have been in hand for its replacement – a programme summarised as Electricity Market Reform (EMR).<sup>73</sup> At the centre of this is a new system of financial support based on Contracts for Difference. The rationale for ending the RO is the desire to create a more stable pricing framework that will help developers secure the capital necessary for further large scale energy investment; to do so within a framework that embraces nuclear power as well as renewables and to reduce the net effect on consumer prices.<sup>74</sup>

The proposals have prompted intense debate, not least about the potential effects on renewable energy. The reforms in themselves have created a period of uncertainty for investors<sup>75</sup>, with the complexity of the proposed arrangements, and vital importance of the 'strike price' for generators unlikely to emerge before 2013, adding to this uncertainty. Criticism has also focused on the way in which the government's emphasis on nuclear, together with the levy cap, may squeeze the resources available for renewable energy, and on the complexity of the arrangements, which could make it even more difficult for independent companies and new entrants, such as community bodies, to gain a foothold in the UK electricity market.<sup>76</sup>

As well as the potential effects on renewable energy, EMR also effects a cementing of centralisation in market support arrangements. Whereas the RO allowed differentiation of banding, the process governing contracts for difference will operate across England, Wales and Scotland, responsibility for delivery across this territory is to be given to National Grid, as system operator; with the reforms supported by other cross-UK measures like carbon floor price. The Northern Ireland Executive introduced an Electricity Bill to the assembly in November 2012, proposing that the region also opts into the EMR, with some caveats.

For all these reasons, one would expect the devolved administrations to pay keen interest. One might expect the Scottish Government, particularly, to take a critical view: given its strong support for renewables, the re-centralisation of implementation powers, and consistent Scottish opposition to nuclear new build.

As with previous rounds of market reform, the devolved administrations have not necessarily been the major actors in the policy formulation process, which is itself illuminating of the nature of intergovernmental power in this sphere, and of how the devolved governments position renewable energy within their wider energy agendas.

In Wales, there has rarely been serious discussion about the design or devolution of market support arrangements; as one AM put it, 'Well in the first place it's well understood that it's nothing to do with us'<sup>77</sup>. Moreover, the Labour-run Welsh Government of 2011 has little inclination to challenge the broad thrust of EMR, given that renewable energy has increasingly been positioned – in line with Westminster – as part of a wider, pragmatic low-carbon agenda, which includes gas in the electricity mix, and includes nuclear – the investment prospects of which are viewed positively. The absence of powers in this sphere also feeds back into limited technical capacity within the Welsh Government, to engage in what are highly complex debates.

The EMR offers Northern Ireland some particular challenges as it seeks to balance its energy relationships on both an East-West axis (in relation to market support mechanisms) and North-South, in terms of its involvement with the Single Electricity Market. Although the region does have autonomy to develop its own system of market support, it has agreed to join the EMR to continue to benefit from the socialisation of the subsidy for renewables and it will help bind it to wider UK energy concerns, which can only be an advantage to unionist interests. Although the NI minister will retain some powers to negotiate an alternative strike rate to reflect the specific market conditions of the island of Ireland, it effectively does result in a loss of its autonomy over an important dimension of energy policy. For some interviewees the debate over EMR brought into sharp focus the fact the Northern Ireland did have important powers over energy policy but was rarely in a position to use them effectively. There is also a feeling that Northern Ireland's position in the EMR debate was treated as an afterthought by the UK-wide government: "Westminster doesn't give a tootle about what happens in Belfast, ignores it – not purposely, just ignores it, they've got bigger fish and therefore it's not part of it"<sup>78</sup>.

In Scotland, initially the First Minister did take a strongly critical line, focusing on the negative effects of contracts for difference on renewable energy investment in Scotland, and maintaining support for banded ROCs:

Any new system must be at least as effective as the current framework of banded ROCs, where we have delivered unique and enhanced levels of support for offshore wind and for wave and tidal capable of delivering capacity as well as new industries and jobs. We are concerned that changes which are designed chiefly to extend our support mechanisms to include nuclear power run a material risk of being delivered at the expense of investment in renewable generation and CCS in Scotland. We will strongly resist any change for a support mechanism for nuclear power at the expense of renewable generation and CCS in Scotland, and we believe that Scottish Ministers should have full control over any new financial support mechanisms for renewables and CCS in Scotland.<sup>79</sup>

Scotland, as the location of much of the UK's renewable energy capacity in the pipeline, might also be said to possess a degree of bargaining power, or at least more than that seen in the case of Northern Ireland or Wales. The issue to explain is why, after some initial high profile statements, the Scottish Government has not pressed its dissatisfaction further? At one level this might exemplify the general tendency – often missed by those who focus on the most visible politicking of devolution – of an unwillingness to disrupt generally positive, constructive relationships between officers that work on cognate policy matters, especially given that Scotland's actual powers to act in this field are still relatively limited. As one official put it, 'the current focus of our work is influencing, negotiating and being part of the work that DECC is doing' to make sure that EMR 'works for renewables and CCS'.<sup>80</sup> Scotland has secured some helpful concessions from Whitehall, too: the release of money for port development to support offshore

renewables, and a more beneficial position on grid charging which would make Scottish renewables more competitive to export down south. It may also be relevant that developing thermal power with CCS is also a key part of the Scottish Government's agenda<sup>81</sup>, and EMR may be seen as facilitating this.

#### *Other dimensions of financial support*

Alongside these reforms we have also seen the introduction of feed-in tariffs for smaller scale electricity generation under the 2008 Energy Act. The operation of FITs for England, Scotland and Wales is a fully reserved matter, centred on Westminster and Ofgem, reproducing a common approach across these territories. As noted above, micro-scale renewable energy is not a major focus of this study, but we consider the role of devolved governments in widening public engagement in renewable energy in Section 6, below.

The other main dimension of financial support is discretionary government spending, for example resources for economic development. One of the main spheres to which the devolved governments have channelled energy-related economic development spending is marine renewables, especially wave and tidal stream power – an issue we cover in Section 5 below. Micro-renewables are not the main focus of this study, but we note for now that energy poverty has been an important focus of the devolved governments, most conspicuously in Northern Ireland and Wales, and that the Welsh Government has put EU money towards the ARBED initiative to retrofit energy efficiency measures on existing housing stock.

### 4.3 Land use planning

Perhaps no subject should be able to better illustrate the effects of devolution on renewable energy than planning. Planning and consenting processes are critical in shaping the rate and form of renewable energy development, and all the devolved administrations enjoy significant levels of autonomy over most aspects of planning for renewable energy facilities, allowing significant scope for different practices to emerge. Moreover, since planning is a sphere in which much of 'Westminster-made policy' applies only to England, a four-way comparison is possible. Wales is a partial exception - the only devolved administration for which some planning powers are still exercised from London.<sup>82</sup> Planning is also illuminating because it is a tool for environmental protection and offers opportunities for public engagement. Thus planning exemplifies how, under devolution, the various governments have sought to orchestrate the relationships between energy development, the environment, and civil society. Across the UK, a dominant refrain of the industry and sections of government is that planning is a 'barrier to the delivery of renewable energy'; whatever the veracity of this claim<sup>83</sup>, the devolved administrations have sought to respond to it.

In this section we review changes in planning policies, practices and – where possible – outcomes in each devolved government area in turn. We consider the two-level nature of the issue: both how the devolved administrations seek to steer the activities of local planning authorities (in the case of Wales and Scotland at least); but also how they organise and execute the decision-making processes for 'major energy infrastructure', with electricity generating stations of 50MW or above, and major grid lines, through processes run by central consenting units.

#### *Northern Ireland – an untransferable lesson?*

If approval rates are the main benchmark of 'success', then the planning and consenting system for renewable energy in Northern Ireland is the most successful in the UK, with an approval rate of all renewable energy applications being nearly 90% in recent years. Indeed, while the planning system is charged with striking a balance between a range of complex issues to determine the public interest, our interviews suggested that those in senior positions in the NI planning system<sup>84</sup> judged the effectiveness of the planning policy entirely on the number of approvals. This echoes the main planning guidance for renewables (PPS18) which takes a liberal criteria-based approach, allowing the planners to take into account a wide range of environmental, economic and social issues as material considerations that should be given "significant weight". This does reflect a far more relaxed approach to planning compared to other parts of the UK which is also witnessed in other parts of the Northern Ireland planning system. However, this also runs the risk, in the long term, of stoking public opposition. This approach reflects the distinctive institutional framework of the Northern Ireland planning system where all planning applications for renewable energy developments are determined the Department of the Environment and, if greater than 10MW, permission is also needed from DETI. Although there are reforms underway that will see some of the planning powers transferred to local authorities, they currently only have consultative input to planning decisions. Industrial interests we interviewed<sup>85</sup> suggested that the lack political involvement in many of the decisions also contributed to high approval rates.

However, the conditions that explain the high approval rates in Northern Ireland are not necessarily replicable or desirable elsewhere.

#### *Success in Scotland?*

The operation of planning is often seen as another ingredient in Scotland's relative success in delivering renewable energy, especially onshore wind; the industry itself has been relatively complimentary about the 'positive support of the planning framework'.<sup>86</sup> Planning approval rates for onshore wind farms have generally been higher in Scotland than anywhere else in the UK apart from Northern Ireland; regularly exceeding 55%, and going beyond 60% in 2011/12.<sup>87</sup> Yet in terms of the guidance issued to local planning authorities, Scottish policy has been broadly similar to that in England: pushing a supportive stance towards projects but within a broadly criteria-based approach. In 2006, new advice allowed local planning

authorities to demarcate zones that would be suitable for wind power and zones that would be unsuitable – a step usually widely criticised by the industry as potentially obstructive. How then, has devolution enabled a more helpful planning environment to emerge in Scotland?

The first issue is that, at devolution, Scottish Ministers acquired from the Secretary of State the power to issue consents for major energy infrastructure, as set out in Section 36 and Section 37 of the 1989 Electricity Act,<sup>88</sup> which applies to all onshore renewable and electricity transmission lines. In terms of powers, this only placed it on a level playing field with England, but the generally larger scale of the onshore wind energy projects coming forward in Scotland – a product partly of the larger sites available, the sparser population, but also perhaps developer confidence – means that a higher proportion of wind farm capacity has been determined through the major projects route.<sup>89</sup> Central decision-making under Section 36 procedures has generally displayed higher consent rates than local planning authorities.

Secondly, while the Westminster Government has spent much of the last decade engaged in successive attempts to ‘streamline’ and ‘accelerate’ the decision-making process for major infrastructure projects, culminating in the new procedures (for England and Wales) of the Planning Act 2008 and Localism Act 2011, the Scottish Government has stuck with Sections 36 and 37. This decision *not* to change inherited practices may also have assisted in expediting consents. Most immediately, Scotland has escaped the disruption created by procedural change south of the border.<sup>90</sup> More fundamentally, Section 36 often had the potential to act as a fast track decision-making process, as applications need not necessarily go to public inquiry,<sup>91</sup> unlike the processes of the 2008 Planning Act in England.<sup>92</sup> The 2007 SNP Government did, however, instigate a nine month target for determining Section 36 applications to speed up the process.

Thirdly, our research identified a range of other ways in which the Scottish Government manages the operation of the planning system that would have the effect of maintaining industry confidence. The Scottish Government’s role in dealing with appeals enables weight to be placed on national policy, as it does in England and Wales, although in our interviews we also regularly encountered claims that the Scottish Government instructs local planning authorities to take a positive stance towards renewable energy development.<sup>93</sup> Indeed, it has been suggested that central Ministries in Scotland are more content than their English counterparts to be ‘active’ in infrastructure issues, including ‘working intensively on wind farm issues with local authorities’.<sup>94</sup> Although Scottish Planning Policy has allowed Local Planning Authorities to draw up zones, the Scottish Government has also used its powers of strategic plan approval to override local authorities where their definitions of wind power development zones have been deemed too spatially restrictive.<sup>95</sup> It also seems that the mere possession of Section 36 powers adds credibility to any message coming from the Scottish Government that such and such project will ‘definitely happen’<sup>96</sup> – granted that such a conjunction between political power and the taking of planning decisions has sometimes been questioned.<sup>97</sup> The Scottish Government’s National Planning Framework also specifies nationally important infrastructure, including major grid links. While this framework does not pre-empt the statutory consents process for the individual infrastructure projects concerned, it serves as another signal of governmental commitment.

So, while all countries in the UK have planning policies which take a supportive stance on renewable energy development, successive Scottish Governments have operated the system in ways which have been more convincing to the industry.

#### *Wales and England – intersection and conflict*

The most significant departure from the flexible, criteria-based planning policy norms of the UK has taken place in Wales where, in 2005, the Welsh Government issued new planning policy guidance which, *inter alia*, adopted a spatial planning approach for on-shore wind power. This created a presumption in favour of large-scale, on-shore wind development within specially demarcated ‘Strategic Search Areas’ (SSAs). The motives for this innovation are manifold: the then environment minister had a planning background and an enthusiasm for spatial approaches; a desire to encourage renewable energy development in Wales by providing a firmer policy context for investment; a belief that local planning authorities, working to criteria-

based policies, were unlikely to consent sufficient projects to meet renewable energy targets, and a belief that it would be better in environmental terms if wind energy in Wales was concentrated in particular areas rather than scattered across the territory. The policy is set down in Welsh Government planning policy Technical Advice Note 8 (TAN8) and Planning Policy Wales<sup>98</sup>, which provide the main guidance for plan-making and decision-making in Wales.

One might see the creation of an holistic, 'all Wales' view of wind power development priority sites as a distinctive product of devolution, and it certainly represents a policy innovation in the UK context. Westminster has generally favoured criteria-based policies, and the spatial flexibility this confers on developers meant that the industry has been largely opposed to zoning (and indeed managed to convince Ministers in Northern Ireland that such an approach should be avoided).

Wales's spatial strategy has had mixed effects on renewable energy development: partly because of issues arising from the incompleteness of the spatial zoning as a tool for steering change; partly because of the awkward intersection between Welsh spatial policy and consenting powers retained by Westminster (as above).

One significant outcome is an upsurge in investor interest in on-shore wind development in Wales within the SSAs. The total capacity applied for within these seven zones grew to exceed 2000MW and, although it is unlikely that all this capacity will receive consent, it represents a remarkable turnaround from the pre-TAN8 position, when the industry declared Wales 'closed for business'. It is also a level of developer interest in on-shore wind which, in terms of the scale of schemes and overall capacity, is unmatched by any comparable area of England. It is difficult to imagine that the 299MW Pen y Cymoedd wind farm, due to come on stream in 2016, would have been conceived in that form without the TAN8 policy context.

In terms of implementation, however, a number of difficulties have arisen. Some difficulties are the side-effect of the spatial strategy itself. Although the Welsh Government effectively took the decision to create 'wind farm landscapes', this did not obviate the need to deal carefully with the cumulative effects – in terms of landscape, access and materials transport – of numbers of very large projects in deeply rural areas. Although some of the SSAs were selected because grid capacity was readily available, many of the larger zones in mid-Wales depended on grid enhancement in order to be fully exploited. When proposed new grid lines into mid-Wales were announced in 2010, their wider visual impacts led to a major increase in organised local opposition. Shortly after 1500 protesters arrived with placards on the steps of the Senedd in May 2011 the First Minister announced that on-shore wind capacity in the SSAs would be capped (at about 1800MW).

Orchestrating the creation of landscape-scale wind energy in rural Wales was never likely to be easy but, in contrast to Scotland, the ability of the Welsh Government to address the issue was complicated by the partiality of the devolution settlement. As noted above, electricity generating stations of 50MW or above and major grid lines in England, Scotland and Wales go through special consents procedures and, for England and Wales, this process is run from London with UK ministers issuing consent decisions. This in itself is nothing new, but its significance has been magnified by two things. Firstly, one effect of TAN8 has been to encourage larger projects, meaning that a high proportion of the TAN8 wind power capacity will be determined in London. Secondly, one facet of reforms to major infrastructure decision-making promulgated by Westminster is the creation of National Policy Statements (NPS) for Energy which, *inter alia*, seek to specify the need for certain categories of infrastructure and outline how different considerations will be weighted. Such statements take primacy in making infrastructure decisions but, although the text acknowledges the relevance of Welsh Government guidance (such as TAN8), much consternation has been caused in Wales by the final sentence of paragraph 2.2.1, which says that '(w)hether an application conforms to the guidance', which could mean by falling within a Strategic Search Area, 'will not, in itself, be a reason for approving or rejecting the application'.

These policy arrangements have added a Cardiff-London dimension to the intra-Wales conflicts surrounding major wind and grid development, and intensified calls by Welsh Government ministers to be given control over major energy consents, in parity with the situation in Scotland. A key political narrative is

that not having these powers prevents Wales from meeting its renewable energy aspirations.<sup>99</sup> It certainly means that the Welsh Government does not control key parts of the implementation process; whether project consent *outcomes* would be different is more difficult to discern.

The fact that major, on-shore energy generation projects in England and Wales go through the same process means that projects in Wales will have been affected by the Westminster-driven reforms to infrastructure decision-making instituted in the 2008 Planning Act and 2011 Localism Act.<sup>100</sup> These new procedures themselves are taking time to bed in. Although badged as 'streamlined', it is not yet possible to judge whether they are necessarily quicker than the Section 36 process they replaced. Interviewees tended to be positive about the use of pre-application consultation, but felt that the 2008 Act process, although more arms-length from government, was less flexible, less responsive, and conferred less scope for learning across applications.<sup>101</sup> One might not be surprised that one of the first major wind farms consented in the Strategic Search Areas, Pen y Cymoedd, was consented under Section 36.<sup>102</sup>

The next question is whether the Welsh Government, if it were granted decision-making powers, would make more positive consent decisions than Westminster. This is implied by the criticisms made of the devolution settlement but impossible to demonstrate one way or the other. However, the *belief* that the Welsh Government might not be so positive in issuing consents was expressed by some of our interviewees, and has been a factor in the mind of past Westminster government ministers resisting calls for the devolution of consenting powers<sup>103</sup>, a situation paralleled closely in Northern Ireland where there are fears that the transfer of planning powers to local authorities could also hamper future development prospects for renewable energy schemes<sup>104</sup>.

The final issue is whether decision-makers in London would in fact 'ignore' TAN8, as Welsh Government Ministers have sometimes claimed<sup>105</sup>, and consent major wind farms outside the SSAs, and thus undermine the environmental balances struck by Welsh planning policy guidance. This loss of spatial control certainly raised hackles in Wales<sup>106</sup>; whether the NPS gives a new freedom to ministers in Westminster to ignore Welsh guidance is also unclear. At one level, the NPS may have simply formalised a situation which always existed: although Section 36 decisions were not undertaken with reference to explicit guidance like the National Policy Statements, it was a basic *modus operandii* that applications were treated 'on their merits', and decisions were not *bound* by other planning policies. However, although decision-makers in Westminster are not bound by the spatial zonings of TAN8, this does not necessarily mean they will be ignored.<sup>107</sup>

Importantly, Westminster Ministers may themselves have good reasons to place strong weight on the TAN8 zonings. Whatever the wider industry views about TAN8, a number of major companies have invested a lot of effort and resources into sites in the SSAs, in the belief that the preferential policy environment offers a good degree of certainty about the eventual planning outcome, which sustains commitment even though the decision-making process is slow (with five applications now heading to Public Inquiry). For this reason, few major energy companies operating in Wales now push for the abolition of TAN8, and a lengthy National Assembly inquiry into Welsh energy planning policy did not conclude in favour of abolition either. Were Westminster ministers to make decisions which suggested that location within an SSA were irrelevant to the planning outcome, it might lead to a wider collapse in confidence in the projects currently inching forwards. Paradoxically then, if Westminster feels reliant on the 1500-1800MW of on-shore wind coming forwards in Wales to meet the 2020 target within the SSAs, then it may be to a degree reliant on upholding industry faith in TAN8.

#### *England – an image of Wales without TAN8?*

For an image of what the planning context for on-shore wind in Wales might be like without the spatial framework of TAN8, perhaps England is a more instructive comparator than Scotland. On-shore wind farms have generally faced lower consent rates than in Scotland, for which an important factor is the extent and efficacy of opposition. Because England is more densely populated, most wind farm projects tend to be smaller – falling outwith central consenting procedures - which means that many decisions reflect the dynamics of local planning authority decision-making processes. Thus, although national

(English) planning policy guidance for renewable energy has long pushed local planning authorities to take a positive stance, refusals have been common, leaving developers to decide whether or not to take their projects to appeal.

The regional planning institutions bolstered under the 1997-2010 Labour Governments were charged with assessing the scope for renewable energy development within their area, including setting sub-regional targets. They were also issued with rather open advice about the possible merits of identifying broad areas in which onshore wind energy development might be more acceptable. Of the ten regions, only the North-East produced spatial guidance for on-shore wind: others produces spatialised assessments of resources but did not translate this into policy. It is partly because local planning authorities in the North-East have given weight to this guidance (or inspectors have given weight to it at appeal), that this region has seen higher levels of wind energy development than other regions of England.

The planning environment for sub-50MW onshore wind in England has arguably become much more uncertain since the 2010 May general election. Regional institutions have been abolished – including renewable energy targets – leaving many to wonder how national and European targets will now be articulated with local plan- and project-specific decisions. Some of our interviews suspected that the turn towards ‘localism’, when added to the overt hostility of many English politicians and Councillors will make for an even more difficult consenting environment. Set against this, the revised National Planning Policy Framework (which only applies to England) provides a much more pro-development framework for planning decisions. One should not be surprised to see further renewable energy development in England dominated by technologies, the geography of which is least likely to generate conflict in the planning system: landfill gas, biomass co-firing, small-scale PV and – in many instances – offshore wind.

#### *Concluding remarks*

Viewed across the UK as a whole, it becomes harder to sustain the common business view that ‘planning is a barrier to renewable energy development’ – at least not in terms of ultimate outcomes. How could consent rates in Northern Ireland be higher? In Scotland more than 3,700 MW of on-shore wind development was in operation by 2011, with a further 2450 MW under construction or consented<sup>108</sup>. Although planning processes had taken more time to negotiate in England and Wales, a significant volume of capacity is in the planning pipeline. More widely, the effects of planning have been most taxing for on-shore wind; off-shore, where we will see some of the biggest expansion of renewables in the years to come, have far higher consent rates and the fact that the Crown Estate’s leasing rounds are guided by a strong spatial designation appears to have facilitated this<sup>109</sup>.

The experience of Wales has suggested that a key innovation in terms of planning for renewables that has emerged from devolution has been the use of a more directed strategic spatial zoning approach that is more comparable to European leaders like Denmark and Germany than that experienced in other parts of the UK. While this does appear to be a rational approach to optimising the location of wind energy projects, the division of consenting powers between Wales and Westminster tends to obscure whether it amounts to a clear and transferable lesson for other administrations. It should also be said that the Welsh planning innovation ought not to be judged as an exercise in facilitating the quickest renewable energy development, but also the *best* renewable energy development i.e. to think about which spatial patterns of on-shore wind supply might best protect other valued environmental asset. This is an issue rarely aired otherwise in the policy-making cores of the UK.

In other respects, the experience of planning for renewable energy under devolution exhibits major convergences around a diminished role for conventional planning. In England, Scotland and Wales, governments have used their powers to extend permitted development rights for small-scale renewable energy and this is also under consideration in the already liberalised approach to planning in Northern Ireland. In all countries, major energy infrastructure has been maintained as a special class of development, subject to centralised decision-making processes and to reforms designed to speed-up and streamline decision-making. Although the Welsh Government lacks direct powers in this respect, its zoning strategy can be seen as an exercise in central steering and – were it to be given powers over major energy

consents – there would be political support for a special consents process to be adopted<sup>110</sup>. In this trajectory, we can also see the shadow of the European Commission agenda of accelerating decision times for major, cross-border infrastructure<sup>111</sup>.

In all of the countries of the UK, there is little serious dissent on the principle that decision-making procedures for major energy infrastructure need to be streamlined – the only divergences of view are on matters of process, and who ultimately should be in control. Such an outcome might, though, be viewed as paradoxical in terms of devolution. It is a policy trajectory which reinforces the role of representative government, but otherwise curtails the opportunities for public engagement in the transition towards sustainable energy futures. In planning for renewable energy then, we can also see ‘regional centralism’ emerging.<sup>112</sup> For Wales the paradoxical in another respect: a planning and overall development strategy that is encouraging of large-scale energy generation facilities means that many projects will fall outside the Welsh Government’s powers to control consents.

## 4.4 Steering the grid

### *Introduction*

Electricity distribution and transmission networks are widely acknowledged to be a critical factor in shaping the scope for renewable energy development. Much potential renewable energy capacity lies in more rural areas of the devolved governments, which means that improvements to the grid within their territories is important to UK-wide renewable energy agendas.<sup>113</sup> However, the nature of the electricity networks makes their development difficult for government to steer, especially at subnational level:

- The massive infrastructure already in place reinforces the economics of current patterns of electricity provision, and creates a tendency towards incremental change. This is important because the UK's grid system has often been regarded as problematic for renewables, given that it was configured for the long-distance transmission of major electricity flows from large power stations (mainly in the north) to urban centres of demand. Consequently, capacity is lacking in many of the more remote, rural areas where renewable energy potential has been identified, such as mid-Wales and northern Scotland. There are also questions about the utility of this inherited system in addressing electricity production from myriad, small-scale renewable generators, mostly connected into the distribution system, many of them more intermittent in the power they supply.
- Privatisation of the electricity sector in the 1990s created a regulatory system for which key decisions are made by arms-length regulators, operating on a UK-wide basis. Ofgem oversees the regulation of prices and capital spend by the distribution and transmission companies across the UK, as well as rules for grid access and provisions for grid transmission charging. Although the National Grid Company only owns the transmission network in England and Wales, it manages the arrangements for power dispatch and balancing for the whole of England, Scotland and Wales.
- The regulatory context for grid investment makes it difficult to drive forward major system reinforcements in advance of new generation capacity. Arrangements are described as 'market led'<sup>114</sup>, which means that network development is often placed in a response-mode relationship to new electricity generation.<sup>115</sup> This creates the risk that realising new grid capacity could itself be a cause of delay and uncertainty for new renewable energy generation, and that it is difficult to steer enhancements that might offer wider strategic enhancements, above and beyond benefits to individual generators.
- Magnifying this risk is the tendency for major, new terrestrial network developments – especially high voltage transmission lines using lattice towers – to attract significant public opposition. Grid can often be more visually intrusive than the power generation capacity being connected, and power lines offer few mitigating benefits to people along the route. A long-standing bugbear for those who believe in rational comprehensive planning is that because electricity generation and grid developments are put forward by separate companies, as separate applications, it is extremely difficult to assess the overall environmental impacts of what are systemically connected projects.<sup>116</sup>

Given the above, our main conclusion is that the devolved governments have been able to exert relatively direct little effect on the pace of grid development. Capacity improvements in all three countries have been very conflictual and slow to come to fruition, and there is little sign that any of the devolved governments possess a magic bullet which will ease this process. Nor has Westminster: until a major grid proposal passes through the whole of the 2008/2011 Act processes for determining major infrastructure, it would be premature to laud these reforms as an overall improvement.

## The national cases

We now review briefly the situation in each devolved government areas in turn.

### *Scotland*

In Scotland, arguably the most significant piece of grid investment has been the reinforcements through 220km of the central Highlands from Beaulay to Denny. Here an existing 132kV line was replaced by a higher capacity and physically larger 400kV line. The enhancement is seen as essential to exploiting the renewable energy potential of northern Scotland. The Beaulay-Denny investment should be seen as integral to wider Scottish Government economic strategies of energy development for export, which includes improved interconnectors from Scotland to England and across the North and Irish Seas. The project attracted significant opposition from the public and landscape groups. The decision-making process has been protracted: the application was made in September 2005; consent was issued by the Scottish Government in January 2010, and the link is due to be completed in 2014.

It took four and a half years for the Beaulay-Denny line to gain consent, of which a public inquiry occupied eleven months, the writing of the report of the inquiry 14 months, with a further eleven months elapsing before a decision was issued. Given the large number of actual and potential environmental consequences of such a lengthy new line, it is an open question whether this process could – or should – have been any shorter. Nevertheless, the time frame provides a point of comparison for major grid projects coming through in England and Wales under the different 2008/2011 Act procedures.

Our research suggests that the main effects of the Scottish Government – beyond the immediate, practical management of the decision-making process – is to signal consistently the importance of the link going ahead, which helps to sustain industry commitment to renewable energy generation through the vicissitudes of the consenting process. In effect, the Scottish Government was able to communicate certainty of outcome. The inclusion of enhanced grid capacity to the north as a 'National Development' in the National Planning Framework signalled 'in principle' support (granted that this does not override the consenting process on specific projects). The fact that the Scottish Government possessed consenting powers (under Section 36) gave credibility to this support to the industry.

The Scottish Government has also been actively involved in grid issues at a strategic level. In 2012, the Office of Gas and Electricity Management (OFGEM) announced proposals for a reform of the grid transmission charges system which means that Scottish generators in general pay lower rates for sending their power down south, and proposed even lower transmission charges for renewable generators. This makes renewable energy schemes more economic since the electricity they generate will be cheaper. The Scottish Government had long argued for improvements on these lines,<sup>117</sup> although it did not achieve all the concessions it wanted to enable cheaper transmission from Scottish islands. It is clear that UK government energy ministers have shared Alex Salmond's views about the importance of transmission charges to Scottish renewable energy.

### *Wales: the mid-Wales connector*

Wales provides an object lesson of the difficulties involved in coordinating the realisation of new renewable energy generation with sufficient grid capacity. In theory, the Welsh Government looked poised to address this issue successfully. Its strategic spatial planning guidance for on-shore wind (in TAN8) indicated the zones<sup>118</sup> in which large-scale on-shore wind energy development was to be preferred. Many of these zones were identified because there was already sufficient grid capacity in place to export the power; in mid-Wales, however, zones were identified despite a recognition that grid capacity to these rural areas needed significant enhancement. Critics see this as neglectful and a fatal flaw of the strategic spatial plan. Equally, the spatial planning process ought to have provided a framework in which the grid implications of the Welsh Government's emerging renewable energy development pathway could be discussed with some

certainty. As of January 2013, proposed high voltage grid connections are in the early stages of the consenting process; 2016 looks like the earliest point at which any grid connection may materialise.

Ultimately, only a retrospective analysis will be able properly to judge what this notionally helpful strategic planning achieved. At the time of writing, the nature of 'the problem' and who or what caused it is the subject of much disagreement. One aspect is certainly the general difficulty, noted above, of undertaking strategic discussions about future grid connections and capacity in advance of firm commitments to new generating capacity. Following the formal issue of TAN8, 3-4 years elapsed before major wind farm applications were made, and connection applications made to the grid or distribution network operator. It is in response to this that National Grid began pre-application consultation on potential route corridors in the autumn of 2010, as did Scottish Power Energy Networks (SPEN), and it remains anticipated that formal applications will be submitted to the Major Infrastructure Planning Unit during 2013. Should the new links be consented in 2013, and completed in 2016, this could be viewed as quicker than Beaulieu-Denny in Scotland.

Two more qualitative considerations require consideration. First there is the open question of what, if anything, might have been done in the years between 2005 and 2012, by the Welsh Government that could have smoothed the path of these projects? Although there was dialogue between grid companies, wind farm developers and the Welsh Government at various points in the intervening period, the outcome of those discussions remain hard to discern. The Welsh Government has, since 2011, put an officer in place to address issues arising from the mid-Wales grid connections; some interviewees question whether this might have been done sooner.<sup>119</sup> It would be consistent with the broad doctrine of UK government thinking on planning that earlier, 'front-loaded' public engagement around the principle of these grid developments would help achieve greater societal buy-in. But this has always been a hypothesis rather than a fact: given the landscape impacts of high voltage grid lines, widespread opposition was always likely to be the outcome, no matter what the process of public engagement.

Perhaps the issue, and main line of comparison with Scotland, is communicative. In the wake of vociferous and extensive public protest over the mid-Wales grid lines, including electoral pressure during the 2011 Assembly Elections, interviewees feel that the Welsh Government has found it difficult to sound as convincingly committed to the grid developments as the Scottish Government did over Beaulieu-Denny. There are a number of elements to this. Firstly, the Welsh Government disagrees with National Grid over the type and capacity of line needed, preferring less intrusive wood pole lines, yet may face difficulty trumping the National Grid's assessment of the technology required to appropriately enhance the network in the light of the capacity coming forward.<sup>120</sup> Secondly, as with electricity generation above, the devolution settlement left Wales with an awkward, fragmented distribution of decision-making powers. The Welsh Government is only a consultee to the grid line applications, which are determined by Westminster through the Major Infrastructure Projects Unit, and so cannot directly deliver any preferred outcome. Applications for any substation will fall to the local planning authority but, if that ends in a public inquiry, Welsh Ministers will take the final decision.<sup>121</sup>

#### *Northern Ireland: reinforcing the west and the North-South interconnectors.*

The government renewable targets in Northern Ireland are heavily qualified by the willingness of the Utility regulator to sanction expenditure of up to £1 billion on grid works. The Regulator's terms of reference are different to those in other parts of the UK and the regulator is more duty bound to take into account the impact on consumers, in a region that currently has the highest fuel poverty in the UK (balanced with other issues such as an almost entire reliance on imported oil). In our interviews it was stressed that the Northern Ireland targets were consumption not production targets and therefore these could be met by importing higher levels of renewable electricity if this was cheaper – there will be options from the UK/Scotland and the Republic of Ireland. Some key grid projects have recently been sanctioned, but the incremental approach may hinder long term investment opportunities.

Ireland as a whole also suffers from being a relatively closed electricity provision system, which means that high levels of wind penetration offer particular risks. Greater interconnection across to Great Britain and beyond will be central to it fully developing indigenous renewable energy resources, and its prospects of becoming a net exporter of energy. However, the North-South Interconnector is currently subject to inquiries north and south of the border, highlighting complexity of cross-border effects.

### *Concluding remarks*

The experience of rolling out new grid development in the UK has nowhere been easy: projects in the devolved administrations have seen protracted consenting procedures, but major new grid projects to connect prospective new nuclear capacity in England has also encountered major public opposition. It has generated protests too in Europe's renewable energy 'leaders', Denmark and Germany, and the desire to accelerate grid network consenting times is also animating new European Union legislative activity, which may yet drive procedural change across the UK.<sup>122</sup> Given the intensity of conflict that grid infrastructure attracts – and that such infrastructure often acts as a lightning rod for dispute about the wider direction of energy policy, it is as yet unclear how any new consenting regimes will pan out.

That said, offshore electricity transmission connections often precipitate less public opposition (except where they make landfall), such that wiring up new offshore renewable energy capacity has the prospect of being less controversial. Instead however, one might expect the negotiation of optimum solutions between different countries to require greater effort. These are issues addressed below, where the focus switches to offshore renewable energy.

## 5 The view offshore

### 5.1 Introduction

Thus far, our analysis of the effects of devolution on renewable energy has been mainly a story of uneven development rates for onshore wind - the main technology of choice from the 1990s onwards. However, given that each renewable energy technology requires a particular set of supportive conditions and interventions, one should expect that focusing on a different set of technologies gives a different perspective on the role that the devolved governments are playing<sup>123</sup>.

In this section therefore we take a closer look at marine renewable energy technologies, embracing offshore wind and emergent technologies like wave power and tidal stream power. This is an important focus because, for the UK generally, marine renewables are projected to become an increasingly important means by which electricity supplies are decarbonised up to and beyond 2020; especially given signs that the expansion of onshore wind may be starting to slow.<sup>124</sup> The dynamic efficiency of the UK's renewable energy strategy may also depend greatly on how wave and tidal energy is exploited. The fact that these technologies are emergent, allows greater examination of how the devolved administrations have pursued anticipatory policies, to support early commercialisation and scaling up activities.<sup>125</sup> Linked to this, marine renewables also an area where devolved governments (and the English regions) have deployed discretionary economic development spending.

It is convenient to begin with a summary of UK national policy before moving on to discuss developments in Wales, Northern Ireland and Scotland.

### 5.2 Developments to date

To date, marine renewables in the UK have been dominated by the most readily available technology – offshore wind. The offshore wind programme has been built up from 2004 onwards with the deployment of the first offshore windparks in what was called 'Round 1' of the UK offshore wind programme. Two other rounds (2 and 3) of leasing areas to wind developers where they can develop their projects have since been conducted. In addition to these Round 2 extensions, a Scottish offshore wind leasing tranche, and, most recently, a Northern Ireland leasing tranche, have also been issued. However, as yet only Round 1 and Round 2 projects have been implemented and the biggest tranche, Round 3, is still far away from installation. However, cumulatively, there are over 40GWe in the development pipeline, which would generate over 30 per cent of UK electricity if they were all implemented.

According to RenewableUK around 2700MWe of offshore wind capacity was installed by the end of 2012. This generates around 2 per cent of UK electricity on an annualised basis. The majority of this is located in the English North Sea and Liverpool Bay (bridging England and Wales), where the shallow seas have delivered lower development costs. The fact that these areas have already been 'industrialised' by oil and gas, and lie offshore from communities suffering economic problems that are glad of the jobs, are factors that have helped to quell social opposition and expedite development.

There are three key policy dimensions in marine renewables. The first is the important overarching role performed by Crown Estates in organising the leasing of areas of the UK's territorial waters. The second policy dimension, for projects coming forward in those leasing areas, is determining planning consent. Planning is largely devolved while financing is largely reserved to Westminster. For England and Wales the main mover in the consenting process is DECC, although, as discussed later, in practice at least, consenting is devolved to the Scottish and Northern Irish Governments. Whilst the Welsh Government is theoretically a junior partner in the consenting process in reality it has an effective power of veto over schemes within UK inshore territorial waters whether or not they are smaller than the 50MWe that is in theory reserved to Westminster to decide planning outcomes. In addition, even in the case of England, local authorities can still delay consents by refusing consents for onshore installations (although these are most likely to be overturned on appeal). The offshore renewable resource has been subject to Strategic

Environmental Assessments (SEAs) in the 2008-2011 period in all parts of the UK, and the UK set down its marine spatial planning framework in the 2009 Marine and Coastal Access Act, with additional legislation for Scotland (Marine Act Scotland 2010) and now being prepared in Northern Ireland (NI Marine Bill). Marine spatial plans are still being finalised.

The third policy dimension is financing. After the difficulties with funding the earliest Round 1 offshore wind schemes it became apparent that offshore renewables would need greater incentive levels compared to onshore wind, and hence offshore wind has been awarded around 2 ROCs compared to 1 ROC for onshore wind (reduced now to 0.9 ROCs) in the period up to 2015. This is a policy implemented consistently across the UK. The UK government allocated £50m in 2004 to a Marine Renewable Deployment Fund, of which most remains unspent; and a projected fund of £60 million to help build port infrastructure to support offshore wind. It has supported the development of two 'wave hubs', one off the Scottish coast and one off the Cornish coast, to support wave power demonstration schemes (on which more below). It is still unclear what offshore renewable subsidies will be available under Electricity Market Reform, which is being phased in during the 2014-2017 period, though key actors are assuming that the level of assistance/MW will be significantly reduced.

Wave and tidal stream development has lagged behind offshore wind, and is still very much at the experimental or demonstration stage, although the first commercially sized (1.2MW) tidal stream device sited in Strangford Lough in Northern Ireland has now chalked up a considerable amount of reliable operational experience.

### *Scotland*

The Scottish Government has a strong record of funding marine renewable energy and also in terms of providing a positive attitude towards planning for offshore renewables. It has provided the biggest share of funding for the European Marine Energy Centre (EMEC)<sup>126</sup>, based in the Orkneys, which tests and evaluates marine renewable technologies. The Scottish Government has backed tidal stream and wave power development both before and after the inception of the SNP Government in 2007 in other ways as well, for example, the 'Saltire prize' for innovation. As noted in Section 4.2 above, the Scottish Government took the lead in making high levels of incentives available under the Renewables Obligation (3 ROCs for tidal stream, 5 ROCs for wave) from 2008, and this was followed by the UK Government's decision in 2011 to grant the same level of ROCs for these marine renewables across the UK until 2015.

Those involved in marine renewables outside Scotland certainly believe that the higher levels of ROC support is one factor that has made Scottish waters more attractive for companies wishing to test these technologies than other parts of the UK. However, fully commercialised schemes of tidal stream and wave have been slow in being brought to market. Although some are planned of up to 100 MW in size, none has yet been developed. Nevertheless, the fact that Scotland has succeeded in setting out a marine renewable zone around the Pentland Firth and then gone on to issue leases for several commercial sized schemes in that zone, as well as offering large quantities of financial support in different forms, indicates that Scotland is ahead compared to other parts of the UK as regards promotion of wave and tidal stream technologies.

The Scottish Government has also channelled investment into Scottish ports to support offshore windfarm deployment. In the earlier stages of the UK offshore windfarm programme it was assumed that the Scottish offshore wind resource was too small to be included because of the lack of relatively shallow waters. However, the policy has changed and approaching 10,000MW (10GW) of project leases have been issued by The Crown Estate in 2009 in the Scottish Territorial Waters programme and also in the main Round 3 programme.

Scotland approved its own Marine Planning Act and established a dedicated, in-house planning agency, Marine Scotland, to supervise marine spatial planning and administer planning consenting processes. Marine Scotland has been designed as a 'one-stop' planning agency so that all consents are gained simultaneously and where there are targets to achieve planning consents in as short as time as possible.

Marine Scotland has, either through legislation or through exercise of Executive powers, authority over marine spatial planning and consenting in Scottish waters including the deep sea economic zone area.

In summary, then, Scotland has made a major political priority of marine renewables. It has also successfully bargained with the Westminster Government for increased resources for marine renewables.

### *Wales*

The Welsh Government has promoted a positive attitude towards marine renewables. However, the Welsh Government's powers are circumscribed in the sense that it has had no direct influence over the Renewables Obligation and its control over planning is partial. Moreover, a strong landscape protection interest around Wales may be associated with greater pressure for limitations on marine renewables, in particular offshore wind, in Welsh waters. There have also been considerable planning controversies surrounding offshore windfarm proposals around the Welsh coast, notably at Gwynt-y-Môr off the coast of Llandudno, but also years earlier at Scarweather Sands off the south Wales coast at Porthcawl. In the past, possible risks to cetacean populations has prompted conflict with the prospects of hydrocarbon prospecting in Cardigan Bay.

Previous research into patterns of social responses to offshore wind generally help to explain why the seas around Wales may present a challenging context in which to realise large-scale offshore wind developments, at least in relatively near-shore locations. While it remains broadly true that offshore wind attracts less opposition than onshore, this is much less the case in sites which are highly visible from coastlines valued for their scenic and ecological quality, or from places – especially coastal resorts – where uninterrupted views out to sea are much prized. Wales has significant lengths of coast subject to Heritage Coast, AONB and National Park protection, with few stretches far from coastal resorts, with much of its southern seas subject to high levels of inter-visibility from valued landscapes on both sides of the Bristol Channel, including Exmoor and other parts of north Devon. It is unclear whether siting turbines further offshore, under Round 3, will dissipate these concerns.

Although the Welsh Government is not the principal authority responsible for issuing marine licenses (this is the responsibility of DECC), it still has to issue licenses covering transport and navigation, which gives the Welsh authorities an effective 'pinchpoint' on the consenting process. Offshore wind development may place the Welsh Government in the same difficult position as for onshore wind – sandwiched between important but potentially conflicting interests in conservation and renewable energy development, but without possessing the full array of consenting powers through which mediation may be conducted.

According to Welsh Government estimates, only a relatively small Welsh potential for tidal stream and wave power of around 1GW by 2020 (WAG 2011),<sup>127</sup> though this discounts the Severn Barrage, for which there has been sustained support from key figures in Welsh politics. The main tidal energy project in place around the Welsh Coast is the 1.2MW Deltastream testing facility in Ramsey Sound, to which the Welsh Government granted funding from EU money. Although held up as a technology success story for Wales, it is also something of a parable of the regulatory complexity surrounding marine energy in Wales. The consultation process started in 2008 but the relevant licenses from DECC and the Welsh Government were not obtained until 2011.

## *Northern Ireland*

As mentioned earlier, Northern Ireland was the site of the first commercially sized tidal stream device at Strangford Lough, SeaGen, which was installed in 2008. It also was an early starter in considering a proposal for an offshore wind scheme in the early 2000s which attracted a substantial opposition due to its seascape impacts in a high tourist area<sup>128</sup> – the proposal was subsequently dropped due to a lack of clarity over the UK-Republic of Ireland ownership of the seabed, now resolved. Since then the Northern Ireland Government has produced a Strategic Environmental Assessment for marine renewables (in 2009). It was estimated that the total marine renewable resource was around 1200MW including 900MW of offshore wind (DTNI 2009).<sup>129</sup> In fact, in 2012, The Crown Estate issued leases for up to 800MW of offshore wind projects off the Northern Ireland coasts. Offshore wind activity would have started earlier except that it took some time to resolve differences between the Northern Irish and Irish governments over jurisdictional issues. Northern Ireland has also been delayed in its putting into place legislative provisions for Marine Spatial Planning and its Marine Bill is hoped to be enacted during 2013, providing for the development of a draft single marine plan for the inshore and territorial waters of Northern Ireland by the end of 2013.

### **5.3 Concluding remarks**

Overall, the promotion of emergent wave and tidal stream power seem to have attracted greater political attention in the devolved governments (and, until their abolition, English regional development bodies) than in Westminster. As these technologies are at an earlier stage of development, the policy tools are rather different: discretionary economic development spending and efforts to shape policy agendas. The Scottish Government (and Northern Ireland Executive) have also been pro-active in raising the profile of marine renewables in the European Union, and engaging in EU-funded projects exploring the potential of marine grids in the Irish Sea.

What is less clear is whether the various actions in the marine sphere by Northern Ireland and Scotland will change the general pattern of marine renewable energy development, which is dominated by developments in English coastal waters. Consenting procedure innovations and port investment may be less significant in shaping the direction of development than the lower economic costs of developing sites in key, relatively shallow English coastal waters. Policy tools designed and deployed from Westminster have driven developments here to date; the main threat to further offshore wind expansion around the English coast is not immediately competition from sites elsewhere in the UK, but the funding uncertainties of Electricity Market Reform.

## 6 Promoting social engagement in renewable energy?

### 6.1 Introduction

Many analysts of renewable energy identify three sets of conditions that are required for large-scale and effective deployment. Alongside market acceptability (shaped by 'market prices' and government support schemes for renewables) and political acceptability (whether governments support the rolling out of renewable energy), social acceptability – the extent to which the public are happy to accept renewable energy – is also deemed to be a critical variable<sup>130</sup>. Positive public support can make planning consents for individual projects easier to achieve, but also help to sustain political commitments and financial support for renewable energy. However, civil society can also be a source of opposition to particular energy pathways – a tendency particularly visible in the development of onshore wind.

It is not our intention here to provide a detailed review of societal engagement in renewable energy in the UK, not least because this has been addressed in depth elsewhere by other researchers<sup>131</sup>. In this section we focus on two key spheres that one might have expected to be affected by devolution: changes to the processes by which publics are engaged in decision-making processes, for projects, plans and policies; measures to engage the public, as communities, in the development and ownership of renewable energy. Previous research suggests that positive moves in both spheres could foster wider social support for renewable energy.

### 6.2 Public engagement in decision-making procedures

There is research support for the proposition that perceptions that decision-making processes are unfair can exacerbate social opposition to development, and some evidence that taking steps to widen societal engagement in decision-making procedures can reduce opposition and possibly foster wider support. Governments across the UK have generally subscribed to these principles. But to what extent have the devolved governments sought to restructure decision-making processes for renewable energy in order to widen societal engagement? Devolution is often rationalised as making government more accessible to distinct national communities, but whether the dividends extend beyond representative government, to prompt a 'double devolution' to wider public participation requires careful analysis.

Overall, the evidence suggests that devolution has little changed the processes or opportunity structures for public engagement in energy decision-making, with the most obvious pattern being a rolling forward of UK norms. The most significant opportunity structures for public engagement still lie in development planning and consent decision-making, with broadly similar norms still in operation across the UK. Plan preparation offers opportunities for public engagement, so too do the consultation procedures for development control as individual renewable energy projects come forward. There are statutory minimum provisions for public engagement in both settings. Whether extra efforts are made to engage publics in project decisions is substantially down to individual developers rather than something driven by devolved government.

For all the broad rhetorical support for public engagement in planning across the UK, the major procedural innovations that are relevant to our focus, and coincident with devolution, have emanated from Westminster, focused on major energy infrastructure, and arguably have procedural streamlining rather than public engagement as their major objective. The procedures brought in by the 2008 Planning Act – which apply to major energy infrastructure in England and Wales – did seek to formalise pre-application consultation processes, both with local publics potentially affected by the infrastructural project concerned as well as major stakeholders. The effects on public attitudes are as yet unclear, not least because the new pre-application consultation opportunities have to be viewed alongside another key feature of the 2008 Act reforms - the introduction of National Policy Statements which seek to specify the need for certain categories of infrastructure and prevent them from being challenged as individual projects come forward. The modest reforms to this process brought in by the 2011 Localism Act reinforced the role of

representative government (in that ministers now take consent decisions, not the independent Infrastructure Planning Commission which has been abolished), but not the scope for public engagement.

Scotland, as noted above, has retained the special, centralised decision-making procedures of the 1989 Electricity Acts, in which Scottish Ministers are ultimately accountable for consent decisions. In Northern Ireland, central government has retained control of consents since the 1970s and proposes to adopt proposals similar to those used in Scotland to determine a hierarchy of decision procedures, once planning is transferred to local authorities in the next two years. In Wales too, there is support for 'clear, streamlined' and 'lean' consenting regimes<sup>132</sup>. For major infrastructure decisions at least, 'regional centralism' seems more prominent than major moves towards societal engagement.

If there have been changes to the opportunity structures for public engagement in energy decision-making, including renewables, it might lie not in the conventional planning spheres but in opportunities for engagement in policy formulation – an exercise which, through devolution, has been brought closer to the publics of Northern Ireland, Scotland and Wales. Certainly, devolution has brought with it new processes of sustainable energy strategy formation at devolved government level and, with it, the potential to stimulate wider debate and involvement. However, while organised stakeholders have inputted into these processes, there is less evidence of wider public engagement. Indeed, devolution to smaller political communities and has not automatically cracked the enduring problem of how one stimulates the engagement of the wider public in 'strategic' policy-making: for the most part, debates about technologies and targets have proven too abstract to engage wider publics.

The one particular exception to this sphere concerns the spatialisation of policy – the connection of technological options for energy futures to specific sites and areas. Where policies are spatialised, the extra tangibility this confers on future development scenarios can stimulate a wider array of groups and individuals to get involved, and there is evidence that the devolved governments have been more enthusiastic in their embrace of spatialised energy-related policy than Westminster. The most prominent example is Welsh policy guidance for renewable energy - 'TAN8'. The fact that TAN8 identified specific, strategic search areas for major on-shore wind energy development helps explain why the consultation draft attracted more than 4000 responses (from a country of less than 3 million people), far more than a typical policy statement. In Scotland, specific national developments, attached to specific locations or corridors are listed in the National Planning Frameworks, including electricity grid reinforcements from south to north.<sup>133</sup>

In contrast, Westminster governments have generally been less enthusiastic about spatialised policies for renewable energy<sup>134</sup>, a product perhaps of opposition from the industry and ingrained norms about competitiveness and locational flexibility. While regional spatial strategy-making was in operation, up until 2010, advice from central government was rather mealy-mouthed on whether indicative zones for on-shore wind energy should be identified, and so few regions actually took this step.<sup>135</sup> The National Policy Statements on energy have been criticised for lacking a spatial dimension<sup>136</sup> – one exception being nuclear power, where the potential development sites were stated.<sup>137</sup> The only other departure from this general aversion to spatial policy applies to offshore wind, where the demarcation of development zones has been linked to the process of leasing marine areas by the Crown Estate, but the very 'offshore-ness' of marine renewables has generally meant that policy formulation processes only engage stakeholders with a tangible interest in the spaces affected, not the general public.

It is fair to conclude, then, that the devolved governments have been more consistent supporters of spatialised policies for infrastructure within their territory than Westminster<sup>138</sup> and that, where practised, this has stimulated a larger number of responses from the public and groups. Whether this amounts to qualitatively better public engagement is a more difficult question. In leading renewable energy nations like Denmark and Germany, the identification of wind power development zones has been a more collaborative exercise between tiers of government, with greater local government input. In the UK, spatialisation could be seen mainly as an adjunct of centrally-driven delivery,<sup>139</sup> in which the scope for the public to question the general direction of policy is limited. Potentially at least, spatialised policies like TAN8 in Wales could foster a wider-ranging national conversation about the desirability of different energy

pathways, by producing a more grounded vision of future scenarios than technological targets alone can achieve. The same prospect has been identified for national planning in Scotland.<sup>140</sup> Whether planning processes are used in this way is less clear.

### 6.3 Public engagement in the development and ownership of renewable energy

Thus far in our analysis, we have treated the delivery of renewable energy in simple terms – as megawatts and gigawatthours. But to what extent has devolution set in train processes that have *qualitatively* changed the mode of development of renewable energy, from a sector which, in the UK, has generally been dominated by large, international utilities<sup>141</sup>, to encourage wider engagement in the development and ownership of renewable energy? Much recent activity in this sphere has concerned micro-renewables, stimulated by the feed-in tariff (FIT); the small-scale of investment under the FIT and its cross-Britain mode of operation puts this development outside the focus of our analysis. A question that concerns us is how far devolution has helped to promote greater community ownership of renewable energy?

Such a question needs answering against the ‘baseline’ of a UK norm. Community renewables have been a persistent but small part of renewable energy provision in the UK, responsible for a tiny fraction of the renewable energy installed since 1998.<sup>142</sup> There are many hundreds of initiatives around the UK that could be defined as ‘community owned’<sup>143</sup>, but almost all are small in scale (less than 10MW installed capacity). Successive UK governments have been supportive of community renewables, with a series of advice- and grant-based support schemes put into place, but these have only marginally addressed the main problems facing communities wishing to invest in community renewables: e.g. shortage of capital; the complexities and difficulties of accessing mainstream market support; the uneven availability of skills, social capital and motivation between communities.<sup>144</sup> Whatever positive glow might be conferred on community renewables from the 2010 coalition government’s support for ‘localism’ must be balanced against the effects of public sector austerity (affecting the availability of grants), and the worry that new systems of financial support instigated by electricity market reform will prove even more inhospitable for small-scale operators.

UK and the devolved governments have all issued supportive statements about community renewables<sup>145</sup>. Their actions, however, might be seen as efforts to mitigate rather than transform the difficult UK context for this part of the sector. Arguably the most sustained and coherent framework of support for community renewables can be found in Scotland. In 2011, the Scottish Government issued a target of seeing at least 500MW of community renewables installed by 2020<sup>146</sup> – the only part of the UK to set such a target – for which a key delivery tool is the Scottish Community And Renewable Energy Scheme (CARES) loan scheme to support early costs.<sup>147</sup> The impetus behind community renewables in Scotland reflects a number of institutional and social factors, intertwined with other powerful development agendas. The organisation Community Energy Scotland, formed as a charity in 2008, has been advising communities on potential energy development, but originates in Highlands and Islands Enterprise, a Scotland-specific agency for rural development. Community renewables in Scotland is also propelled by its interconnections with agendas of community land purchase, and its role in enhancing the energy systems of Scotland’s remote island communities.<sup>148</sup>

Among the devolved governments, only the Northern Ireland Assembly actually has the powers to alter the way in which mainstream market support systems work to favour smaller renewable energy generators. Northern Ireland was not able to adopt the FIT scheme when it was introduced in April 2010, and instead made changes to their existing NIRO mechanism ‘to allow for greater assistance for some categories of small-scale generation, broadly in line with some elements of the Great Britain Feed-in Tariff’ (NIE, February 2010).

The Welsh Government has drawn on European Structural Funds to create Ynni'r Fro, a £15 million scheme of grants, loans and technical support for social enterprises in Wales wishing to develop renewable energy. Set up in 2010, this scheme has not been without its problems, not least the need to navigate EU-level regulations around state aids which prohibit the taking up of both a development grant and ongoing financial support (such as the feed-in tariff).

While one can see elements of institutional innovation across the governments of the UK, certain continuities stand out more clearly. Nowhere has community renewables been seen as more than a modest (if highly positive) addition to energy strategies which continue to rely mostly on large, international investors developing mostly large-scale generation schemes. By and large, community renewables has been framed by governments across the UK as a means of improving the social acceptability of renewable energy development (by spreading the benefits) and/or one means of delivering social and economic development to (mostly rural) areas. It has not been framed as a development strategy which could, over time, foster a more decentralised, diversely owned energy system. The funds available through CARES and Ynni'r Fro are valuable but relatively modest, face the familiar limitations of time-limited competitive bidding schemes, and need to be seen against the winding up of previous funding arrangements.<sup>149</sup> And while steps have been taken to expedite planning processes for major energy generation projects, little dispensation is made in planning policy for smaller, community renewables initiatives.<sup>150</sup>

There is some evidence that the new tier of representative government created by devolution has enabled new party platforms to form around community renewables, and given the issue political space, in comparison to Westminster at least. In Scotland, SNP manifestos in 2007 and 2011 mentioned the need for greater 'bottom up' engagement in Scotland's 'energy revolution', and sought expansion of local, public and community-owned energy initiatives, but the main emphasis was on major-scale investment and the grid investment required to support it. In Wales, both Plaid Cymru and the Liberal Democrats went into the 2011 election with a significant emphasis on community engagement in renewable energy development, but this is less evident in the platforms of the Welsh Labour Party, which have dominated successive Welsh Governments.<sup>151</sup> The manifestos of parties in Northern Ireland have tended to frame renewable energies in terms of helping farm diversification and the rural economy.

More widely visible than community renewables across political and policy discourses at UK level, and in Welsh and Scottish Governments, has been a growing concern for 'community benefits'. 'Community benefits' have expanded in scope from the *ad hoc* practices of wind farm developers, agreeing to give funds to communities near their projects, to a wider government narrative that 'communities should benefit' from renewable energy development, embracing community benefit funds but also jobs, training and connections to local supply chains. This agenda has been driven forward by actions at a range of scales, with devolved governments being relatively important actors.<sup>152</sup> Forestry Commission Wales, acting on behalf of the Welsh Government, made community benefit provision one of the assessment criteria for assessing bids to develop wind farms on forestry sites; Forestry Commission Scotland has adopted a comparable position. Community Energy Scotland and Highland Council have been actively engaged in community benefit provision in Scotland. Perhaps the most remarkable instance of aligning community benefits with a national agenda comes from Scottish company, Scottish and Southern Energy, which in November 2011 proposed to allocate half of its community benefit provision to local initiatives (which is the norm) but half to a wider Scotland Sustainable Energy Fund, for organisations promoting skills development, community energy projects and environmental improvements.<sup>153</sup>

In the offshore sphere, the Westminster government has set up the Coastal Communities Fund, channeling 50% the revenues generated by the Crown Estate's marine assets into projects for the economic and social improvement of coastal communities. The Fund is UK wide, although different levels of funding have been allocated to England, Wales, Scotland and Northern Ireland on the basis of revenue generated. In Scotland there are two funds: one for the Highlands and Islands and one for the rest of Scotland. The outcomes and criteria outlined below will be UK wide, although the devolved administrations will have country specific boards who will work with the Big Lottery Fund to deliver this Fund on the ground in their areas.

#### 6.4 Concluding remarks

While links are now being made between community benefit funds and funding for community renewable energy projects, by and large the community benefit agenda is a desire to make conventional models of renewable energy deliver better for the territories of the UK, in social and economic terms, with the hope of

thereby improving social acceptability, rather than about changing the model. Reforms to planning across the UK, at Westminster and in the devolved governments, have also been designed to facilitate the delivery of major energy projects rather than open up public debate. One might say that the period coincident with devolution has been associated with a sustained concentration of energy decision-making powers, in central government, and in the devolved governments.

The significance of this observation might not be widely shared. After all, in the decade 2002-2012 over 10GW of renewable energy capacity has been installed across the UK, without having much truck with alternative pathways of decentralised, diversely-owned energy provisioning. The significance of this point is clearer when we review the UK's renewable energy development, and the effects of devolution, in the light of other countries' achievements, and ambitious renewable energy targets for 2020 and beyond.

## 7 Conclusions

Teasing out the causal effects of devolution on renewable energy development was never likely to be straightforward: devolution is a complex multifaceted process and renewable energy development is the product of a multiplicity of economic, political and social ingredients. Nevertheless, from the analysis it is possible to give a defensible account of the effects that devolution has exerted. Moreover, by using devolution within the UK as a 'laboratory' of different approaches to renewable energy development, it is possible to identify factors that are more widely conducive to the more rapid development of the technology.

### 7.1 What have we learned?

We would not conclude that devolution – actions and activities undertaken by the devolved governments in Northern Ireland, Scotland and Wales – offers a total explanation for the variance in the development of renewable energy across the UK. Firstly, because devolution is still a relatively new dimension of the socio-technical system for energy provision in the UK. Many of the conditions affecting this sector – the market arrangements, the grid, key incumbent actors and business structures, the broad policy approach – were established prior to and during electricity privatisation, and operate at a UK scale. Important structural differences apply to Northern Ireland, but devolved government there only became fully effective from 2007, leaving it playing 'catch up' to a greater extent. Secondly, decisions affecting key drivers for renewable energy investment – the systems of market support – are still made mainly in Westminster. Thus the inception of the Renewable Obligation (including its Northern Ireland variant, the NIRO) boosted interest in renewable energy (especially wind power) across the UK; the uncertainties of Electricity Market Reforms are similarly wide-ranging in their effects.

That said, the highly uneven geographical and technological distribution of renewable energy development across the devolved administrations suggests that there is a phenomenon to explain, and that devolution does have some explanatory power. For much of the post-1998 period, rates of renewable energy development in Scotland have outstripped England, Wales and Northern Ireland. Of course, development *in* Scotland (or Wales or Northern Ireland) does not necessarily mean that actions by devolved government have had a significant causal effect: the electricity system of England, Scotland and Wales is integrated, so too is the support system for renewables – creating a UK-wide pool of financial support – and it may be that many of the more straightforward sites for exploiting the renewable technology of choice, on-shore wind, lie in Scotland.

Are these outcomes simply explicable in terms of the different allocation of powers to each devolved government? We have noted how energy policy (including the power to shape financial support systems) is fully devolved to the Northern Ireland Assembly, only 'executively devolved' to the Scottish Government, with the Welsh Government having fewest powers in the energy sphere. Powers are important, but their effect is not all-determining. The Scottish Government has a smaller set of powers than Northern Ireland but has presided over a larger volume of renewable energy development.<sup>154</sup> Comparing powers between the devolved administrations also ignores two wider issues. Firstly (to which we return below), 'powers' in the narrow legal or administrative sense may be of limited relevance without a disposition, capacity or will to deploy them in an effective manner for renewable energy. Secondly, focus should also be given to how far the devolved administrations have achieved better renewable energy outcomes *compared to England*, to which Westminster-made policy applies directly, not just to each other.

On this latter point, we can point to a number of areas in which devolved governments have been responsible for actions, policy innovations or styles of working which have proven helpful to the delivery of renewable energy in the UK:

- The Scottish Government has led in using its powers to differentiate ROC levels to give greater support to wave and tidal power. This has served Scottish economic purposes, in pulling a significant amount of development activity in these new technologies to Scotland compared to other parts of the UK, but – if these technologies can be more swiftly commercialised as a result – Scotland's actions may yet be of advantage to decarbonising energy provision for the UK as a whole. Northern Ireland has used its powers to differentiate ROC levels to facilitate small-scale renewables and anaerobic digestion.
- All of the devolved administrations are closely attuned to the potential of emergent, marine renewable energy technologies like wave and tidal stream, including some of the English Regions. However, the Scottish Government has devoted much greater resources relative to its population on direct funding of facilities and research and demonstration for offshore wind and wave and tidal stream energy.
- The operation of planning and consenting processes has an important effect on renewable energy development. The most significant departure from UK planning norms has emerged in Wales, through the central identification of what are effectively preferred development zones for large-scale on-shore wind. These zones have attracted significant levels of developer interest, with over 2000 MW of applications at various stages of the planning process – a volume of potential investment that would be difficult to imagine in any comparable region of England. However the devolution settlement has fragmented responsibilities for consenting these projects, obfuscating and politicising the delivery of what might otherwise have been a clear policy steer.
- The Scottish Government's control over major energy generation and grid consents is widely seen as advantageous as a means of exercising closer control over delivery. Scotland may have avoided temporary delays created by reforms of major infrastructure consenting in England. The processes used in Scotland (and, prior to the 2008 and 2011 reforms, in England) may also have allowed more scope for collaboration and learning between consenting teams, local planning authorities and other stakeholders.

To understand why the above steps have been taken, and why they have exerted particular effects, we need to look at powers in the light of a wider set of institutional and political factors, which have shaped processes of policy formulation and implementation:

- One of the most obvious policy outputs of devolution has been the production of an additional layer of strategic policies on energy by the devolved governments, each of which expresses political commitment to promote renewable energy, and links this to targets or aspirations for renewable energy that are higher than those set by the UK government for the UK as a whole.
- However, this political commitment is longest standing in Scotland, being evident in the 1999 devolved government elections, allowing debates about delivery to develop sooner than in Northern Ireland and Wales, where political attention was slower to emerge.
- A significant factor in this is the centrality of energy issues to the Scottish National Party and its independence agenda, but it is not the only factor. Renewable energy expansion has enjoyed a higher degree of cross-party support in Scotland, in terms of trajectory and policy approach, than is evident in other government arenas, with the contrast becoming more marked with England/Westminster politics since the 2010 general election.
- The framing of energy policy may also have been more conducive in Scotland. From the early years of devolution, renewable energy has been seen as a national economic motor for Scotland rather than just a means of achieving climate change objectives, or fostering rural development. While governments across the UK now embrace the language of 'low carbon energy transition' rather than renewable energy, renewables remain a dominant thrust in Scotland, where consistent opposition to new nuclear power stations has helped to maintain this focus.

- Interviewees feel that the Scottish Government has been more effective in bringing major corporate players into the policy process than other parts of the UK, to the benefits of implementation. In part, this reflects the arenas created by the Scottish Government, but also important institutional inheritances which have facilitated a high degree of territorial cohesion around energy. Major state development agencies like Scottish Enterprise are part of the picture, as are the major commercial interests connection to hydrocarbon energy in the North Sea. So too is the fact that the structure created by electricity privatisation left Scotland with major electricity businesses based in the country, notably Scottish and Southern plc and (until its takeover) ScottishPower. There is nothing comparable in Wales, and the greater scale of Westminster government makes the policy community more diffuse.
- From our perspective, this sustained cohesion of elite interests – across the new tier of elected representatives, in devolved government and business around renewable energy expansion – helps explain why the Scottish Government feels legitimised to use the powers available, and empowered to actively facilitate/steer implementation of potentially controversial projects (such as grid and on-shore wind). In so doing, successive Scottish Governments have been able to maintain a sense of consistent support for the renewable energy sector, which to some extent buffers development from uncertainties arising from consenting processes or wider policy shifts.

The timely delivery of new grid infrastructure, to enable the exploitation of renewable resources in remote locations, remains problematic across the UK. The key factors here are the almost inevitable social opposition to new high voltage transmission lines in the landscape, and the structure of the UK electricity market and regulatory system, which makes it difficult to steer new grid capacity into existence in advance of generating capacity requiring connection. There is little devolved governments can do to alter this basic context; their main role lies mostly in the realm of 'softer' actions, such as signifying commitment to such investments (as with national plans for infrastructure, as in Scotland), or undertaking a mediating and brokerage role between key stakeholders in the routing corridor (as the Welsh Government is doing now in mid-Wales).

Summarising the above, it is clear that the re-distribution of powers attendant on devolution is an important, but scarcely sufficient explanation of renewable energy outcomes. We acknowledge however that the allocation of powers can have more subtle effects: in helping justify the allocation of staffing and resources to an issue; in providing credibility to political commitments, and to legitimising the presence of devolved governments in various policy arenas. We now turn to reflect on the impacts of devolution on renewable energy in the UK in a wider context.

## 7.2 Devolution, renewable energy in the UK in a wider comparative context

If an intra-UK comparison can be insightful, one can also risk losing sight of the bigger picture: how effective is the overall UK 'pathway' for renewable energy development? After all, despite the contributions from the devolved governments, there are commentators that would doubt whether the EU target of obtaining 15% of energy (and by implication, 30% of electricity) by renewable energy sources is going to be achieved.

Previous comparative analysts have noted the slower rate of renewable energy development in the UK compared to Germany and Denmark, and the higher cost, and attributed this to problematic features of the British pathway. In sum, renewable energy development in the UK is characterised by dominance of a small number of large energy companies, many of whom have interests in an array of conventional energy technologies, with financial support and other arrangements that are difficult for new entrants to access. The resulting development patterns – a tendency towards very large schemes, requiring big grid, for which many of the economic beneficiaries are distant from development locations - tends to exacerbate social disquiet and magnify environmental effects.<sup>155</sup> This pathway would be contrasted with Germany and Denmark, where higher societal levels of economic participation in wind, and more accessible systems of financial support, are key ingredients pushing renewable energy's contribution to electricity provision to higher levels.

This perspective raises a different question about the effects of devolution: not to ask what have the devolved governments done for renewable energy within their own territory, but to what extent have they used their access to policy formulation processes in Westminster to challenge the prevailing UK energy pathway? The evidence of our research suggests that the devolved governments have not done so, and that Scottish opposition to new nuclear power or agitation over the powers to issue major energy consents in Wales are not typical of the overall nature of intergovernmental relations, which have been regarded as cordial and positive by the overwhelming majority of our interviewees.

This can be attributed in part to normal UK government practices, in which the culture of interaction between government officers in Westminster and the devolved administrations, and corresponding ministers, is mostly helpful and constructive,<sup>156</sup> in which devolved government officers recognise the limited scope for criticism where formal powers are located elsewhere. Moreover, our research suggests that energy generally – and renewable energy in particular – is not a subject on which there is fundamental disagreement about policy direction between London, Cardiff, Edinburgh<sup>157</sup> or Belfast.

- Governments in all four arenas are signed up for expansion; what might be seen as the ‘over-contribution’ of the devolved governments to UK targets is largely a consensually adopted goal.
- In all four arenas, widening societal engagement in, and benefit from, renewable energy is seen as desirable, but it is positioned as an additional facet to a delivery model that has relied mostly on large-scale commercial investment.
- Generally speaking, all governments take a pragmatic stance towards the role of renewable energy, in which beliefs about relative cost effectiveness govern the balance between renewables, gas and other conventional alternatives.
- There has been a remarkable convergence on planning and consenting practices which seek to streamline decisions for major infrastructure, and seek to manage societal opposition by managing the opportunities and legitimate grounds for dissent.

One retort to this more critical perspective is that the UK pathway is perfectly effective and, indeed, has worked extremely well for delivering renewable energy in Scotland. We acknowledge this perspective, but offer a different view on Scotland’s achievements: since devolution we have been able to see in Scotland the very particular actions and conditions required to make the UK pathway work effectively:

- Consistent and coherent elite support for the expansion of large scale renewable energy projects, reflective of the understanding of, and close working relations with, the business sector, aided by broad cross-party support, creating a tightly coupled policy community, linked to a widely shared sense of national mission around energy.
- Control over many of the most relevant policy and implementation levers and, given the above, a willingness to use them to push forward delivery.
- The creation of a UK-wide pool of financial support has meant adequate resources to fund large volumes of on-shore wind development in Scotland.
- The availability of development sites with either relatively limited public opposition, or where the planning policy framework gave limited scope for effective opposition.
- Sufficient time to develop an effective delivery plan and align other mechanisms and actors around its realisation.

That there is less sign of elite cohesion around the expansion of renewables in Westminster, Cardiff or Belfast qualifies the scope for any easy ‘borrowing’ of policy lessons from Scotland. However, given the asymmetric and uneven distribution of powers attendant on devolution, Scotland may find it hard to fully insulate its renewable energy ambitions from any outfall from conflict over the direction of energy policy in Westminster.

Our final point is that the 1990s devolution programme was put into play prior to the major push on renewables – indeed, concern for the delivery of renewable energy was scarcely on the agenda of the devolution architects - however, as our research has shown, the drive towards sustainable energy can be seen as a major test of how important UK-wide agendas can be orchestrated through the complex machinery of the state. The intersection of renewable energy and devolution has thus been an immensely valuable and timely context for research. It illuminates not just how policy instruments might be deployed, but also how political mandates and democratic processes can be harnessed for major transitions in energy provision.

## Appendix 1: Summary of Research Methodology

The overarching goal of the research was to identify and explain the impacts of devolution on the provision of renewable energy. To do this, a clear research design was developed, to ensure a consistent analytical approach to each of the government arenas, in order to facilitate effective comparison. This was achieved by examining the following sets of factors, and how they have been impacted by devolution:

- the *goals of policy* in the devolved governments and English national and UK levels, including policy targets, and the extent to which policy-makers were constructing new and distinctive 'mobilising discourses' to rationalise the expansion of renewable energy;
- the *policy architecture for renewable energy*, where it sits within departmental and ministerial structures, the extent to which policy arrangements are becoming more integrated, more effectively backed by political authority, and/or more open; and
- the *instruments of policy* deployed to foster renewable energy, their settings, and the actions undertaken to support their implementation (such as 'calling in' planning decisions).

The research sought to identify and assess causal connections between these factors and the *patterns of renewable energy deployment* within each part of the UK. It aimed to measure the megawatts installed for each renewable energy technology, as monitored by government and business, but also go beyond this narrow outcome variable to consider the 'conditions' of deployment, including efficiency and equity. Specifically, we will assess how far the devolved governments have altered the dominance of large-scale, international utility owned renewable energy installations to encourage smaller-scale, decentralised facilities, with broader stakeholder engagement – a strategy widely regarded as vital to long-term sustainable energy futures.

The study used both qualitative and quantitative data, collated from the start of significant, formal policy for supporting renewable energy in 1990 through to the end of December 2012. The duration of the research thus overlapped with – and drew insights from – elections at UK level and among the devolved governments.

New data was gathered by the following methods.

- *Documentary analysis*, of: policy statements on energy, and renewable energy in particular, from each government, including planning policy; debates in each parliament/assembly; reports from government, NGOs and industry; project consent decisions and inquiry inspector reports. Much of this is publicly available and on-line.
- *Inquiry submissions*. An important additional source of data that was not envisaged when the research was set up was the submissions to two inquiries: the Scottish Government Inquiry into Renewable Energy Targets (beginning January 2012); the National Assembly for Wales Environment and Sustainability Committee Inquiry into Energy Policy and Planning (beginning September 2011).
- *Semi-structured interviews*. Altogether more than 80 new interviews were conducted with civil servants and elected representatives in each governmental arena; renewable energy trade associations and companies; NGOs; and a sample of officers from regional and local planning authorities and government agencies. Interviews were recorded, where permitted, and fully transcribed.
- *Secondary data analysis*, using the databases of energy projects collated by DECC, the British Wind Energy Association, Scottish Renewables, and the Welsh Assembly Government to chart volumes and patterns of renewable energy development and rates of planning consent.

## Appendix 2: Renewable energy in the UK prior to 2000

**Table 1** Data on existing hydro-electric installations across the UK in 1990.

Country	MW	GWh/y
Scotland	1270	4000
Wales	120	246
England	9	20
N. Ireland	Negl.	1

Source: Laughton, M.A. (1990) *Renewable Energy Sources*. Report Number 22. The Watt Committee on Energy. ISBN: 1-851-66-500-5.

**Table 2** Electricity generated from renewable sources across the UK (GWh).

Technology	1988	1990
Onshore wind	23	29
Hydro (small)	13	13
Hydro (large)	4843	5081
Landfill gas	83	132
Refuse combustion	300	300
<b>Total</b>	<b>5262</b>	<b>5555</b>

Source: CCW (1992) *Ynni: Polisi a pherspectifau ar gyfer cefn gwlad Cymru/Energy: Policy and perspectives for the Welsh Countryside*. Cyngor Cefyn Gwlad/Countryside Council for Wales. ISBN: 0-901087-31-9.

**Table 3** Declared net capacity of renewable energy projects contracted under the Non-Fossil Fuel Obligation Orders, 1990 – 1995.

	NOFFO1 1990	NOFFO2 1991	NOFFO3 1994
<b>MW declared net capacity</b>	152	472	626.92

Source: Mitchell, C. (1995) *The Renewables NFFO: A Review*. *Energy Policy*. 12 (12) 1077-1091.

**Table 4** Use of renewable sources of energy in the UK in 1990 (thousand tonnes of oil equivalent).

Technology	Use
Solar	8.6
Onshore wind	9.8
Hydro (small)	27.9
Hydro (large)	1552.5
Biofuels	448.8
Other	102.6
Geothermal aquifers	0.4
<b>Total</b>	<b>2150.6</b>

Source: Reference Services, Central Office of Information (1992) *Energy and Natural Resources*. Aspects of Britain series. HMSO. ISBN: 0-11-701700-0; Biofuels includes landfill gas, wood, straw, and refuse combustion

Appendix 3: Electricity generation (GWh) per annum, by country and technology type.

Year	Country	Electricity generation (GWh)						
		Hydro	Wind and wave	Landfill gas	Sewage gas	Other bioenergy	Solar	Micro-wind
2003	England	25.3	349.2	2899.0		2716.9	2.9	
	Wales	194.7	391.0	149.3		33.9		
	Scotland	2902.0	448.9	228.0		145.5		
	Northern Ireland	6.7	96.3	-		1.3		
2004	England	70.2	387.8	3501.1		3160.5	4.0	
	Wales	286.5	550.6	163.7		28.1		
	Scotland	4474.8	848.4	339.2		169.8		
	Northern Ireland	11.5	139.5	-		1.6		
2005	England	47.5	645.2	3719.3		4551.1	8.2	3.2
	Wales	245.5	715.3	175.9		59.2		
	Scotland	4612.2	1280.9	395.4		197.2		
	Northern Ireland	13.7	253.3	-		4.3		
2006	England	60.2	1020.5	3817.6		4464.1	10.7	8.9
	Wales	275.0	867.0	182.7		79.0		
	Scotland	4224.9	2022.9	424.0		291.0		
	Northern Ireland	31.9	299.1	-		19.1		
2007	England	70.0	1408.4	3997.8		4197.9	13.8	4.1
	Wales	283.7	864.0	192.6		30.4		

	Scotland	4692.9	2644.0	486.5		402.7		
	Northern Ireland	29.8	353.2	-		16.7		
<b>2008</b>	England	85.1	2207.4	4033.0		4196.9	17.0	2.8
	Wales	334.2	989.1	221.4		82.0		
	Scotland	4709.2	3330.0	501.7		600.0		
	Northern Ireland	26.1	568.1	1.2		13.6		
<b>2009</b>	England	79.5	3064.5	4161.8	526.0	4192.2	20.0	17.9
	Wales	266.2	904.6	234.2	4.7	198.9		
	Scotland	4863.8	4558.3	533.8	21.1	778.2		
	Northern Ireland	30.9	758.6	22.5	1.0	19.3		
<b>2010</b>	England	64.7	3657.6	4200.3	608.1	5267.4	18.1	22.8
	Wales	212.8	999.4	222.2	11.3	173.9	0.8	
	Scotland	3313.3	4861.1	534.2	20.6	861.2	0.7	
	Northern Ireland	52.6	641.5	57.3	1.1	28.0	0.0	
<b>2011</b>	England	66.7	6158.1	4208.9	683.9	6150.3	129.3	24.7
	Wales	268.4	1438.5	204.7	34.9	203.4	8.5	
	Scotland	5331.8	6984.3	506.5	35.3	862.6	7.6	
	Northern Ireland	18.5	892.6	59.1	0.8	22.4	0.4	

Renewable energy installations (MW) per annum, by country and technology type.

Year	Country	Installed capacity (MW)						Micro-wind
		Hydro	Wind and wave	Landfill gas	Sewage gas	Other bioenergy	Solar	
2003	England	23.7	164.2	538.7		566.7	6.0	
	Wales	145.7	232.3	32.3		18.2		
	Scotland	1298.5	308.3	48.2		20.8		
	Northern Ireland	10.1	37.9	-		0.5		
2004	England	34.3	238.1	626.2		569.2	8.2	
	Wales	145.9	230.9	34.5		18.2		
	Scotland	1307.6	412.0	61.7		21.0		
	Northern Ireland	10.1	45.2	-		0.5		
2005	England	31.3	364.5	711.5		596.5	10.9	3.6
	Wales	145.9	329.8	34.9		18.2		
	Scotland	1311.6	746.5	71.5		21.0		
	Northern Ireland	10.1	117.5	-		2.9		
2006	England	25.7	532.0	744.1		626.2	14.3	3.8
	Wales	147.1	359.0	33.7		18.2		
	Scotland	1330.6	946.5	78.3		43.7		
	Northern Ireland	11.2	110.2	-		3.0		
2007	England	26.3	757.8	767.1		724.9	18.1	3.8
	Wales	146.6	363.2	41.3		7.7		
	Scotland	1338.5	1149.7	92.2		92.1		

	Northern Ireland	10.0	203.1	-		3.0		
<b>2008</b>	England	26.4	1087.6	770.2		778.7	22.5	20.4
	Wales	147.0	375.4	43.5		8.5		
	Scotland	1442.7	1708.0	94.1		92.6		
	Northern Ireland	10.1	215.2	0.5		3.0		
<b>2009</b>	England	26.6	1448.0	823.5	140.9	682.0	26.5	20.4
	Wales	148.8	532.6	45.4	8.5	18.0		
	Scotland	1451.5	2115.4	107.6	7.2	133.9		
	Northern Ireland	10.1	310.6	8.3	0.2	2.9		
<b>2010</b>	England	26.7	1849.3	859.7	172.6	763.7	55.5	20.4
	Wales	149.3	541.8	45.8	4.6	20.2	2.6	
	Scotland	1454.5	2646.7	108.9	8.2	140.1	1.9	
	Northern Ireland	10.1	322.2	10.1	0.2	5.8	0.0	
<b>2011</b>	England	28.4	2469.8	897.7	177.2	1734.1	573.3	20.4
	Wales	149.9	582.4	45.2	11.9	21.2	46.3	
	Scotland	1489.2	3016.0	113.1	8.2	142.3	41.2	
	Northern Ireland	8.2	402.8	10.7	0.2	4.9	0.7	

## Notes and references

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<sup>1</sup> European Commission (2010) *Energy 2020: A strategy for competitive, sustainable and secure energy*, Communication, November, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0639:EN:HTML:NOT>

<sup>2</sup> Official data on renewable energy includes landfill gas, and therefore it is considered within our analysis of the statistics in Chapter 2.

<sup>3</sup> DECC (2011) *UK Renewable Energy Roadmap*, July, DECC: London.

<sup>4</sup> DECC (2010) *National Renewable Energy Action Plan for the United Kingdom*. July 2010, London.

<sup>5</sup> See Verbong, G. and Loorbach, D. (2012) *Governing the Energy Transition. Reality, Illusion or Necessity?* Routledge: London.

<sup>6</sup> Toke, D., Breukers, S. and Wolsink, M. (2008) 'Wind power deployment outcomes: how can we account for the differences?' *Renewable and Sustainable Energy Reviews* 12, 1129-1147.

<sup>7</sup> See for example Carter, C. A. and Smith, A. (2009) 'What has Scottish devolution changed? Sectors, territory and polity-building', *British Politics* 4(3), 315-340.

<sup>8</sup> See for example Helm, D. (2003) *Energy, the State, and the Market. British Energy Policy since 1979*, Oxford University Press: Oxford, which ends its analysis in 2002, and focuses on the consequences of privatisation, viewed in relation to politics, policy and regulation at UK level. We are not saying that devolution is necessarily the most powerful factor shaping electricity provision in the UK, simply noting that it has received little consideration to date.

<sup>9</sup> For example see: Mitchell, C., & Connor, P. (2004). Renewable energy policy in the UK 1990–2003. *Energy Policy*, 32(17), 1935-1947.

<sup>10</sup> The 30.9MW 'P and L', at Llandinam, came on stream in 1993; Carno A and B (33.6MW), in 1996.

<sup>11</sup> Energy policy was not a major priority for the 1997 Blair Government in Westminster either until, from 2000, rising concerns about climate change, consumer prices and energy security brought it onto the agenda (Helm, D. (2003) *Energy, the State, and the Market. British Energy Policy since 1979*. Oxford University Press: Oxford).

<sup>12</sup> With thanks to Gareth Clubb.

<sup>13</sup> See letter from Alex Salmond to Alastair Buchanan (OFGEM) on 12<sup>th</sup> February 2012, <http://www.ofgem.gov.uk/Networks/Trans/PT/Documents1/Scottish%20Government%20Transmit%20con%20resp.pdf>

<sup>14</sup> More specifically, the UK Government's 1994 Climate Change programme set a target to have 1500MW of renewable capacity installed by 2000. The 10% by 2010 target was not specified in a published document until the year 2000 (see DTI (Department of Trade and Industry) (2000b) *New and renewable energy: Prospects for the 21st century: Conclusions in response to the public consultation*. DTI, London).

<sup>15</sup> DECC (2011) *UK Renewable Energy Roadmap*, July, DECC: London; Energy Trends, DECC, March 2011, suggests the renewable contribution to UK electricity generation by 2011 was about 7%.

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<sup>16</sup> Harvey, F. (2012) 'Missed renewable energy targets will cost UK dear', 21<sup>st</sup> April, The Observer, reviewing study by the Renewable Energy Association; PWC (2010) Meeting the 2020 Renewable Energy Targets: Filling the Offshore Wind Financing Gap, UKPWC.com.

<sup>17</sup> Scottish Government (2012) *Routemap for Renewable Energy in Scotland*, June.

<sup>18</sup> The Scottish Parliament (2012) *Report of the achievability of the Scottish Government's renewable energy targets*. Economy, Energy and Tourism Committee. 7<sup>th</sup> Report 2012 (Session 4). 23 November 2012.

<sup>19</sup> Northern Ireland Executive (2012) *Programme for Government, 2011-2015*, available at <http://www.northernireland.gov.uk/pfg-2011-2015-final-report.pdf>

<sup>20</sup> Indeed, the then First Minister, Rhodri Morgan, called for Gwynt-y-Môr to be subject to a public inquiry.

<sup>21</sup> Sometimes expressed as 'energy policy is reserved', which is not the case for Northern Ireland.

<sup>22</sup> For details see the Scotland Act 1998 (Transfer of functions to the Scottish Ministers etc.) Order 1999 (SI1999/1750).

<sup>23</sup> This was established in 2004 as an area beyond the UK's territorial waters that can be exploited for energy production. It is co-extensive with a previously defined area over which the UK exercised jurisdiction over marine environmental matters.

<sup>24</sup> Unlike what other researchers have observed for fisheries, we saw few explicit 'sector-building arguments', along the lines of 'half the UK's RE is in Scotland, so Scotland should have a bigger role in formulating UK position vis a vis DECC' (after Carter and Smith 2009, 331).

<sup>25</sup> Thus the Welsh Government has a particular interest in the effect of EU pollution and greenhouse emissions policy on 'the energy intensive industries' like steel.

<sup>26</sup> See: <http://www.islesproject.eu/>

<sup>27</sup> Though much of Labour's government through targets extended only to sections of the public sector in England, and did not reach across the borders.

<sup>28</sup> See Carter, C. A. and Smith, A. (2009) 'What has Scottish devolution changed? Sectors, territory and polity-building', *British Politics* 4(3), 315-340, who note that devolved administrations do not always seek and secure their goals through making confrontational demands. More prescriptively, the need to engage in multi-level, multi-actor strategies is widely seen as essential to energy transition; see Verbong, G. and Loorbach, D (2012) *Governing the Energy Transition. Reality, Illusion or Necessity?* Routledge: London.

<sup>29</sup> These will be developed further in articles for peer-reviewed journals being prepared by the researchers.

<sup>30</sup> Equally one could talk in terms of 'institutional capacity', along the lines of Janicke and Weidner (1996).

<sup>31</sup> Toke, D. (2010) 'Politics by heuristics – Policy networks with a focus on actor resources, as illustrated by the case of renewable energy policy under New Labour', *Public Administration*, Vol 88, No 3, 764-781

<sup>32</sup> See the territorial-institutionalist approach of Carter, C. A. and Smith, A. (2009) 'What has Scottish devolution change? Sectors, territory and polity-building', *British Politics* 4(3), 315-340.

<sup>33</sup> Szarka, J. (2007) *Wind Power in Europe. Politics, Business and Society*. Palgrave Macmillan, Basingstoke.

<sup>34</sup> See Verbong, G. and Loorbach, D. (2012) *Governing the Energy Transition. Reality, Illusion or Necessity?* Routledge: London.

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<sup>35</sup> For example nrg4SD (the network of regional governments for sustainable development), a network co-founded by Wales following the Johannesburg World Summit on Sustainable Development in 2002.

<sup>36</sup> Verbruggen A and Lauber V (2012) 'Assessing the performance of renewable electricity support systems', *Energy Policy* 45, 635-644.

<sup>37</sup> See Appendix 1 for a more detailed explanation of the methodological approach.

<sup>38</sup> Interviewee NI6.

<sup>39</sup> Interviews Scot3, Scot12, Scot8, Scot10, Scot6 – a view held both by those supportive, and those anxious about the environmental effects of an 'unquestioning drive towards renewable energy' (Scot8).

<sup>40</sup> SNP (1999) 'Scotland's Party Manifesto for the Scotland's Parliament 1999 Elections'

<sup>41</sup> Bridge, G., Bouzarovski, S., Bradshaw, M. and Eyres, N. (2013) 'Geographies of energy transition: space, place and the low carbon economy', *Energy Policy* 53, 331-340.

<sup>42</sup> The first policy-type statement to emerge from Wales was the Joint Ministerial Assembly Government Energy Statement of July 2004.

<sup>43</sup> Interview Scot6, Scot8.

<sup>44</sup> Sovacool, B. K. and Valentine, S. V. (2012) *The National Politics of Nuclear Power. Economics, Security, and Governance*, Routledge: London. Sovacool and Valentine write of the processes by which the adoption of nuclear power tends to generate a tight network of technical and political support, such that (page 9) 'a national commitment to nuclear power tends to make it more difficult for other alternative energy technologies (i.e. wind, or geothermal) to make market inroads'.

<sup>45</sup> Energy development at Hunterston was in the National Planning Framework.

<sup>46</sup> Interview Scot12.

<sup>47</sup> This was a common theme in the majority of interviews in Northern Ireland. In Wales, it drove an interest in achieving parity of powers. In Westminster, for some interviewees the positive leadership from Scotland was seen as a boon in terms of promoting inward investment.

<sup>48</sup> Interview NI4.

<sup>49</sup> Interview NI13. This is an issue also highlighted by Keating, M. and Cairney, P. (2012, Introduction: Policymaking, Learning and Devolution, *Regional and Federal Studies*, Vol.22, No.3, pp.239–250), in pointing out that co-operations amongst federal (or devolved) administrations can give way to competition.

<sup>50</sup> Thus, of the famous '100 MPs' signing a letter expressing their opposition to on-shore wind, three represent constituencies in Wales.

<sup>51</sup> Interview Wales12.

<sup>52</sup> Interview NI13.

<sup>53</sup> For example, while DETI control energy policy (i.e. market incentives, consents etc.), the Department of the Environment oversees planning policy and climate change, the Department of Social Development has responsibilities for fuel poverty and Department of Financial and Personal has energy efficiency responsibilities.

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<sup>54</sup> Interview NI15.

<sup>55</sup> Interview NI15.

<sup>56</sup> See for example Carmichael, P. (2002). The Northern Ireland civil service: characteristics and trends since 1970. *Public Administration*, 80(1), 23-49.

<sup>57</sup> Interview Scot2.

<sup>58</sup> Interview Wales12.

<sup>59</sup> Interview Scot7.

<sup>60</sup> Milner, M. (2006) *Scottish Power agrees to £11.6bn Spanish bid*. The Guardian, 29 November 2006.

<sup>61</sup> Vaughan, A. (2012) Gamesa announces plans to build £125m offshore windfarm facility. *The Guardian*. 23 March 2012.

<sup>62</sup> Scottish Government (2011) Offshore wind technology. 28 September 2011.  
<http://www.scotland.gov.uk/News/Releases/2011/09/28145922>

<sup>63</sup> BBC (2010) £100m for Scottish Energy Centre. BBC News, 3 December 2010.

<sup>64</sup> Interview Wales9.

<sup>65</sup> Majone, G. (1976) 'Choice among policy instruments for pollution control', *Policy Analysis* 2(4) 589-613.

<sup>66</sup> Mitchell, C., & Connor, P. (2004). Renewable energy policy in the UK 1990–2003. *Energy Policy*, 32(17), 1935-1947; upland Wales is used as an illustration for this point.

<sup>67</sup> Technically, the RO works on the basis of three complimentary Obligations: one covers England and Wales; one covers Scotland; and one covers Northern Ireland. In Scotland decisions regarding the operation of the RO lies with the Scottish Government, and in Northern Ireland for the Department of Enterprise, Trade and Investment (DECC 2010). As noted in the text, the latter two have made some changes to banding of particular renewable technologies under this scheme.

<sup>68</sup> ENDS report, May 2011.

<sup>69</sup> Interview NI6.

<sup>70</sup> Verbruggen, A. and Lauber, V. (2012) 'Assessing the performance of renewable electricity support systems', *Energy Policy* 45, 635-644.

<sup>71</sup> Interview NI13.

<sup>72</sup> This emerges from the 2010-2012 re-banding exercise for the RO.

<sup>73</sup> DECC (2010) *Electricity Market Reform Consultation Document*.  
<http://www.decc.gov.uk/assets/decc/Consultations/emr/1041-electricity-market-reform-condoc.pdf>

<sup>74</sup> One consistent criticism of certificate-based systems like the RO is the higher costs to consumers compared to comparable, tariff-based arrangements. For a review, see Verbruggen, A. and Lauber, V. (2012) 'Assessing the performance of renewable electricity support systems', *Energy Policy* 45, 635-644; Ofgem 2007 report.

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<sup>75</sup> The RO system was originally intended to continue until 2027 (DECC (2010b) *Department of Energy and Climate Change Government Response to the Statutory Consultation on the Renewables Obligation Order 2011-02*. <http://www.decc.gov.uk/assets/decc/Consultations/Renewables%20Obligation/1059-gov-response-ro-order-2011-cons.pdf>)

<sup>76</sup> Toke, D. (2012) *A Proven Solution. How to Grow Renewables with a Fixed Feed-in Tariff*, a report for Friends of the Earth: London; Harvey, F. 2012. Plans to reform electricity markets 'unworkable', says green businesses', *The Guardian*, 15<sup>th</sup> May, <http://www.guardian.co.uk/environment/2012/may/15/reform> [Accessed 16<sup>th</sup> May 2012]. So, too, have the NFFO and RO - Lauber, V. 2012. Wind power policy in Germany and the UK: different choices leading to divergent outcomes, in Szarka, J., Cowell, R., Ellis, G., Strachan, P.A. and Warren, C. (eds) *Learning From Wind Power. Governance, Societal and Policy Perspectives on Sustainable Energy*, pp. 38-60, Palgrave Macmillan, Basingstoke; Mitchell, C. 2000. The England and Wales non-fossil fuel obligation: history and lessons', *Annual Review of Energy and the Environment*, 25, 285-312.

<sup>77</sup> Wales12.

<sup>78</sup> Interview NI9.

<sup>79</sup> Alex Salmond, open letter 16<sup>th</sup> December 2010, in response to DECC 2010 consultation.

<sup>80</sup> Interview Scot3.

<sup>81</sup> Interview Scot3.

<sup>82</sup> And energy is the main sector to which this attenuation of planning powers applies; it does not apply to other categories of major infrastructure.

<sup>83</sup> For a discussion, see Ellis, G., Cowell, R., Warren, C., Strachan, P. and Szarka, J. (2009) 'Expanding wind power: a problem of planning, or of perception?' *Interface article for Planning Theory and Practice* 10(4), 521-547.

<sup>84</sup> Interviews NI8 and NI15.

<sup>85</sup> Interview NI6.

<sup>86</sup> Interview Scot5.

<sup>87</sup> Sources: RenewableUK (2012) *Wind Energy in the UK. State of the Industry Report 2012*, October, [www.RenewableUk.com](http://www.RenewableUk.com), accessed 17<sup>th</sup> December 2012. Approval rate data is interesting but not, we acknowledge, without problems. It tends to look at particular decision making 'hoops', and may not capture the extent to any individual wind farm is ultimately approved (e.g. after successive applications, or appeals), and says nothing about the quality of the applications or their choice of site.

<sup>88</sup> Scotland Act 1998 (Transfer of functions to the Scottish Ministers etc) Order 1999 (SI1999/1750).

<sup>89</sup> It is these powers that enable the Scottish Government to veto new nuclear power stations.

<sup>90</sup> Interview Eng19 felt that the new processes had taken additional time to learn.

<sup>91</sup> Applications will go to public inquiry if the local planning authority objects and/or at the discretion of the Secretary of State, if he/she feels there is sufficient reason.

<sup>92</sup> Expediting nuclear power stations – previously the subject of protracted public inquiries – is often seen as one incentive for Westminster to institute new decision-making processes; the consistent anti-nuclear stance of successive Scottish Governments gives it less incentive.

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<sup>93</sup> Interview Wales12.

<sup>94</sup> Marshall, T. (2013) *Planning Major Infrastructure: A Critical Analysis*, Routledge, London, p.232.

<sup>95</sup> Interview Scot8, referring to Perth and Kinross and the Ochills.

<sup>96</sup> Interview Scot8.

<sup>97</sup> Independence from the suspicion of Ministerial interference was one of the rationales behind the creation of the short-lived Infrastructure Planning Commission, to make decisions under the Planning Act 2008. Abolished by the May 2010 Coalition Government, ministerial decision-making has become the norm for major power stations consents, as it has been generally for the last sixty years.

<sup>98</sup> Welsh Assembly Government (2005) *Technical Advice Note 8 (TAN 8): Renewable Energy*, Welsh Assembly Government: Cardiff; Welsh Assembly Government (2012) *Planning Policy Wales*, Edition 5, November 2012.

<sup>99</sup> John Griffiths AM, answers to questions in plenary, Devolution of Energy policy, 27<sup>th</sup> June 2012.

<sup>100</sup> At same time, majority of on-shore wind farms due to come before IPC and successor, ironically, are in Wales.

<sup>101</sup> Interviews Wales5, Wales17.

<sup>102</sup> From application to consent took 37 months. There are signs that were the Welsh Government to acquire consent powers that they might construct their own equivalent structures and processes to those operating in England.

<sup>103</sup> Interview Wales19.

<sup>104</sup> See for example Interview NI6.

<sup>105</sup> First Minister, Carwyn Jones, questions in plenary, National Opposition to Windfarms in Mid Wales, 24<sup>th</sup> April 2012, referring to the Infrastructure Planning Commission.

<sup>106</sup> See the Written Statement by the Welsh Government, by the First Minister (Carwyn Jones 17<sup>th</sup> June 2011).

<sup>107</sup> In the Pen y Cymoedd Section 36 consent, TAN8 was integral to the Secretary of State's judgements that the site and cumulative effects of such a large wind farm were acceptable.

<sup>108</sup> Source: Scottish Renewables: <http://www.scottishrenewables.com/scottish-renewable-energy-statistics-glance/#chart1>

<sup>109</sup> Jay, S. (2012). From Laggard to World Leader: The United Kingdom's Adoption of Marine Wind Energy, Chapter 5 in Szarka, J., Cowell, R., Ellis, G., Strachan, P.A. and Warren, C. *Learning from Wind Power: Governance, Societal and Policy Perspectives on Sustainable Energy*, Routledge, London<sup>109</sup>

<sup>110</sup> The strategic search areas were defined by the Welsh Government without significant local authority input.

<sup>111</sup> <http://www.euractiv.com/energy/eu-clinches-deal-speed-grid-pipe-news-516338>.

<sup>112</sup> Laffin, M. (2004) 'Is regional centralism inevitable? The case of the Welsh Assembly', *Regional Studies*, 38(2), 213-223.

<sup>113</sup> To date renewable energy development in England has placed less pressure on the existing grid and new onshore connections for offshore wind power have been less problematic to realise.

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<sup>114</sup> Interview Eng19.

<sup>115</sup> Interviewees did refer us to the Electricity Network Strategy Group, of which the devolved governments are members alongside Ofgem, the UK government and the transmission companies. Discussions about possible investment scenarios tend to be very high level.

<sup>116</sup> The difficulties of achieving integrated assessment has been noted in the context of Environmental Impact Assessment for more than twenty years.

<sup>117</sup> This is Project TransmiT. See letter from Alex Salmond to Alastair Buchanan (OFGEM) on 12<sup>th</sup> February 2012, <http://www.ofgem.gov.uk/Networks/Trans/PT/Documents1/Scottish%20Government%20TransmiT%20con%20resp.pdf>; Interview Eng8.

<sup>118</sup> Described in the guidance as Strategic Search Areas.

<sup>119</sup> One might add that the former Section 37 consenting process for grid lines might have enabled central government officers to play a mediating role, whereas the 2008 and 2011 Act reforms have required the decision-makers to be more hands off.

<sup>120</sup> Whereas the Welsh Government initially made the policy decision in TAN8, as issued in 2005, that the Strategic Search Areas should accommodate 800MW of new onshore wind capacity, the volume of the cap instigated in June/July 2011 (statements by the First Minister then the Environment Minister) suggest a cap of 1700MW of new capacity, about half of it in mid-Wales.

<sup>121</sup> This division between national decisions for the networks but local planning consent for the substations is not a product of devolution, however. Devolution gave the role of addressing appeals or inquiries to the Welsh Government.

<sup>122</sup> See [http://ec.europa.eu/energy/infrastructure/strategy/2020\\_en.htm](http://ec.europa.eu/energy/infrastructure/strategy/2020_en.htm).

<sup>123</sup> We recognise therefore that our choice of technology will affect the message we present. A focus on anaerobic digestion would place activities in Northern Ireland, and the links to the rural economy, in a more prominent position. A focus on micro-generation might lead to a focus on Westminster/England and the use of FIT for solar photovoltaics.

<sup>124</sup> Taking into account interview data from Scotland about approaching 'saturation point'; comments from prominent coalition government politicians on restricting future wind power in England, and the explicit spatial containment planning policy adopted by the Welsh Government.

<sup>125</sup> Despite some early research and development work on on-shore wind turbines taking place in the UK in the late 1980s and early 1990s (notably in Wales), by and large the on-shore wind revolution was supplied by imported technology.

<sup>126</sup> Established in 2003, EMEC was set up by a grouping of public sector organisations following a recommendation by the House of Commons Science and Technology Committee in 2001. The UK Government and European Union are among other organisations providing funding.

<sup>127</sup> WAG (2011), Marine Renewable Energy Strategic Framework, <http://mresf.rpsgroup.com/resources/Documents/SPP%20and%20Public%20Documents/Public%20Resources/Stage%203/Approach%20to%20Sustainable%20Development/MRESF%20Stage%203%20-%20Approach%20to%20Sustainable%20Development%20March%202011.pdf>

<sup>128</sup> See for example, Ellis, G., Barry, J., Robinson, C. (2007) Many ways to say 'no', different ways to say 'yes': Applying Q-Methodology to understand public acceptance of wind farm proposals *Journal of Environmental Planning and Management*, 50: 4 July, pp. 517 – 551

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<sup>129</sup> NIDTI (2009) *OFFSHORE WIND AND MARINE RENEWABLE ENERGY IN NORTHERN IRELAND STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)*, Northern Ireland Department of Trade and Industry [http://www.offshoreenergy.co.uk/Data/NTS\\_FINAL\\_DEC\\_09.pdf](http://www.offshoreenergy.co.uk/Data/NTS_FINAL_DEC_09.pdf)

<sup>130</sup> Wüstenhagen, R., Wolsink, M., & Bürer, M. J. (2007). Social acceptance of renewable energy innovation: An introduction to the concept. *Energy Policy*, 35(5), 2683-2691.

<sup>131</sup> Wolsink, M. (2012). Discourses on the implementation of wind power: Stakeholder views on public engagement. In Devine-Wright, P. (Ed.). *Renewable Energy and the Public: from NIMBY to Participation*. Routledge.

<sup>132</sup> Welsh Government (2012) *Energy Wales: A Low Carbon Transition*, [www.cymru.gov.uk](http://www.cymru.gov.uk), accessed 1<sup>st</sup> October 2012, p.12.

<sup>133</sup> But also additional baseload capacity at fossil fuel power station sites and a new power station at Hunterston (see Marshall, T. (2013) *Planning Major Infrastructure: A Critical Analysis*, Routledge, London), for which the leading project has been coal. Renewable energy generation sites are not directly given.

<sup>134</sup> Or indeed more generally.

<sup>135</sup> The North-East was the main exception, as discussed in the section on planning, above. Note – the NPPF now endorses this.

<sup>136</sup> Interview Eng4, Eng3, Eng18.

<sup>137</sup> This may be a major factor explaining why the NPS on Energy attracted 2500 responses, with the spatial dimension of the policy also facilitating consultation events near the locations potentially affected.

<sup>138</sup> See also Marshall, T. (2012) *Planning Major Infrastructure: A Critical Analysis*, Routledge: London.

<sup>139</sup> With policy-makers reluctant to promote spatial approaches where – with pressure from industry – it is felt that spatial approaches will not assist delivery.

<sup>140</sup> Marshall, T. (2013) *Planning Major Infrastructure: A Critical Analysis*, Routledge: London.

<sup>141</sup> Szarka, J. (2007) *Wind Power in Europe. Politics, Business and Society*. Palgrave Macmillan, Basingstoke.

<sup>142</sup> Little more than 20MW in total in Scotland by 2011, according to Harnmeijer, A., Harnmeijer, J., McEwen, N., Bhopal, V. (2012) *A Report on Community Renewable Energy in Scotland*, May, SCENE Connect, Edinburgh.

<sup>143</sup> Walker, G. *et al.* (2010) 'Trust and community: exploring the meanings, contexts and dynamics of community renewable energy', *Energy Policy*, 38 (6), 2655-2663; also Turcu, C., Rydin, Y. (2012) 'Planning for change in urban energy systems', *Town and Country Planning*, May, 227-232.

<sup>144</sup> See discussion in Park, J. (2012) 'Fostering community energy and equal opportunities between communities', *Local Environment*, 17, 387-408.

<sup>145</sup> See supportive remarks in DTI (Department of Trade and Industry) (2003) *Our Energy Future*, <http://webarchive.nationalarchives.gov.uk/+http://www.berr.gov.uk/files/file10719.pdf> (Accessed 12th September 2012).

<sup>146</sup> Scottish Government (2011a) Routemap for Renewable Energy in Scotland, <http://www.scotland.gov.uk/Publications/2011/08/04110353/0> (Accessed 12th September 2012). Though the 2009 Renewable Energy Action Plan for the UK anticipated that 20% of the 30% of electricity from renewable sources required to meet the EU Renewable Energy Directive would come from 'small scale sources'.

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<sup>147</sup> Scottish Government (2011b) CARES Initiatives, <http://www.scotland.gov.uk/Publications/2011/08/04110353/0> (Accessed 12 September 2012).

<sup>148</sup> Which, for many of whom, complete dependence on diesel electricity generators has been a problem. See Murphy, J. (2010) *At the Edge: Community Ownership, Climate Change and Energy in Scotland*, A Briefing Paper for JRF: York; Warren, C.R., McFadyen, M. (2010) Does community ownership affect public attitudes to wind energy? A case study from south-west Scotland, *Land Use Policy*, 27, 204-213.

<sup>149</sup> Gubbins, N. (2010) The Role of Community Energy Schemes in Supporting Community Resilience, JRF briefing paper on Community Assets, JRF, York.

<sup>150</sup> We are setting aside here the increased permitted development rights for micro-renewables and Merton-Rule type policies. The National Planning Policy Framework has, very recently, set a more supportive tone for community-led initiatives for renewable or low-carbon energy projects in England (DCLG 2012, para 97).

<sup>151</sup> We are not saying that political parties should be seen as the main bearers of a more community-oriented, decentralised energy future, merely that given the effects of devolution on representative democracy, party platforms are a reasonable sphere to assess. Important questions arise about the capacity of civil society to organise in ways which can grow from individual, local community energy projects to a wider agenda of change (see Seyfang, G., Haxeltine, A. (2012) Growing grassroots innovations: exploring the role of community-based initiatives in governing sustainable energy transitions, *Environment and Planning C: Government and Policy*, 30, 381-400). Joining Community Energy Scotland (CES), 2012 saw the formation of a new body, Community Energy Wales, designed on similar lines. With a more cross-UK remit, the Community Energy Coalition (CEC) was formed in 2012 from an alliance of banks and NGOs. Generally speaking, CES has not sought to challenge the broad thrust of Scottish energy policy but to help communities get involved; it remains to be seen whether Community Energy Wales or CEC take on a more expansive agenda to challenge overarching policy frameworks, and push them to be more conducive to smaller new entrants.

<sup>152</sup> Westminster, too has been an active player, as well as some of the regional agencies in England, but mainly in the provision of guidance and advice.

<sup>153</sup> SSE establishes new £90 million onshore wind community investment plan, 1<sup>st</sup> December 2011, <http://www.mynewsdesk.com/uk/view/pressrelease/sse-establishes-new-ps90-million-onshore-wind-community-investment-plan-710967>

<sup>154</sup> Not just in absolute terms, but also in terms of kW per capita.

<sup>155</sup> See the analyses by Szarka (2007) and Lauber (2012)

<sup>156</sup> Other devolution references mention this: devolved governments are just not pressure groups.

<sup>157</sup> Much of the Scottish Government energy team is based in Glasgow.