

Delivering Renewable Energy Under Devolution

Initial findings summary report, January 2013

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Foreword and acknowledgements

This report provides a summary of the main findings of the research project Delivering Renewable Energy under Devolution. It is a distillation of a more detailed analysis. 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:

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1 *Introduction*

This report summarises 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, never seen before in the UK. 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 territories 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.

2 *What do the renewable energy statistics tell us?*

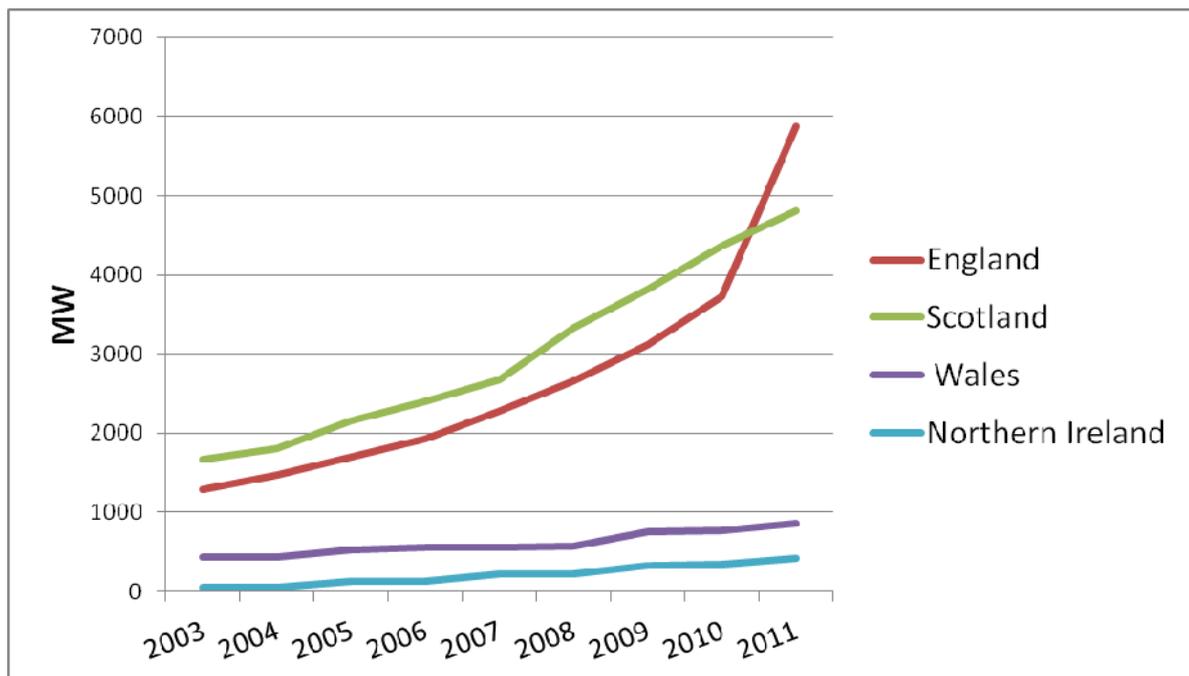
Official renewable energy statistics show the levels of renewable development in each part of the UK, as summarised in Figure 1 below. Other data shows that the level of renewable energy capacity in place prior to devolution in 1998/1999 was low: in general, capacity has expanded most significantly since 2002-2003.

This raises the question of *when* it might be reasonable to expect the devolved governments to begin exerting any effect on renewable energy development? There was political interest in promoting energy development, including renewables, within the 1999-2003 Scottish Parliament; in Northern Ireland however, the devolved Assembly only emerged fully from suspension in 2007.

The statistics on 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 Scotland's renewable energy growth has come from on-shore wind, which grew ten-fold from 308MW in 2003 to 3016MW by 2011, added to c1200MW of hydropower capacity inherited from earlier in the twentieth century. 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.

Measuring megawatts and terawatt-hours is more straightforward than judging performance. If one looks at rates of *increase* in renewable capacity from 2003, then the performance of Northern Ireland looks more dramatic – having achieved a ten-fold increase in capacity between 2003 and 2011 (48MW to 427MW). Looking at renewable energy installed per capita makes the level of development in Scotland look more impressive, and places England – with its higher population – below Northern Ireland and Wales.

Figure 1 Installed renewable energy capacity 2003-2011 (MW)



(Source: RESTATS historic regions data)

An alternative way to judge progress is against the aims and targets for renewable energy that each of the devolved governments has set themselves, *viz.*:

- Scottish Government – matching 100% of Scottish electricity consumption with renewable energy by 2020.
- Welsh Government – an aim to meet the equivalent of twice 2010 electricity consumption in Wales from renewables by 2025.
- Northern Ireland – to source 40% of its electricity consumption from renewable sources by 2020.

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. Scottish Governments have the most sustained record of setting targets above

the UK norm and of meeting them, but renewable energy ambition is a feature of policy and political discourse in all the devolved governments.

However, one cannot easily use the statistical data 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.

3 *Powers and explanations*

The formal position on energy governance in the UK is often summarised as 'energy policy is not devolved'. In practice the devolved governments each possess a different allocation of powers relevant to the shaping of renewable energy development:

- Energy policy is in fact 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, key aspects of energy policy are 'executively devolved', which gives Scottish Ministers full control over major energy consents and planning, onshore and offshore, and operational control over aspects of 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, and enact them across most of the UK.

Although much political debate about devolution focuses on who, at what level, possesses which powers, one cannot neatly read off the achievements of the devolved governments with renewable energy from the powers they do or do not possess. Governing energy typically brings together multiple levels of government (including EU and local government) making inter-governmental relations important, and the devolved governments do engage in debates about renewable energy development with Westminster to shape the development of UK-wide policies.

The critical issue is not just the distribution of powers that may influence the deployment of renewable energy, but those factors which shape the capacity and propensity of government to make use of them, *viz*:

- The way in which the devolved governments approach renewable energy may reflect institutions and cultural practices inherited from the period prior to 1998/1999;
- Policy formulation and implementation is affected by the networks of other actors that make up the wider policy community, and their capacity to exert influence at local, devolved or UK levels;

- Energy pathways are constituted by ‘socio-technological regimes’ - 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 and norms (so called ‘path-dependency’), which may be difficult for government at any level to steer;
- The capacity for realising renewable energy capacity reflects levels of social acceptance, often shaped by the expectations and politics of place which permeate potential renewable energy sites;
- Set against this, one might expect devolved government to have advantages over Westminster, in that it is closer and, potentially, more responsive to the nuances of territory and society, and to key stakeholders.

4 *Causal factors*

In the main part of the report we examine four sets of factors that shape the effect of devolved government on renewable energy, namely: political conditions; market support; planning and consents; the grid.

Political conditions

Given that devolution set out to create new, representative political institutions, one should look for the effects of devolution on the politics surrounding energy development and renewables.

Our main finding is that the political conditions for the large-scale rolling out of renewable energy have been especially conducive in Scotland, which is looked to as a leader of this sector from throughout the UK. This can be attributed partly to the Scottish National Party, which has long regarded energy development as central to the economic future of an independent Scotland. Importantly, however, the expansion of renewable energy is the subject of cross-party support, with key policy developments arising from earlier Labour-led Scottish Governments. Bolstering this political position is the existence within Scotland of major energy businesses: some an echo of the business structures created at electricity privatisation (and before); some linked to offshore oil and gas; which have been brought into the Scottish policy-making process (notably in the Energy Advisory Board), and broadly share the Scottish Government’s aspirations.

There is thus a high level of elite coherence and consistency over energy development in Scotland, which helps legitimise and rationalise assertive use of the powers available, and reinforces – with the political leadership – a sense of commitment. Delivering on earlier renewable energy targets further reinforces government credibility with the sector. Also important is the policy framing of renewable energy, which is seen as central to Scotland’s national economic and environmental future; an emphasis on green jobs and growth from renewables for home consumption and in providing an international competitive advantage. Scottish Government opposition to new nuclear may have helped to focus attention on renewables, but the emphasis on renewable energy is part of a wider energy agenda which also embraces conventional thermal electricity with carbon-capture and storage.

The simplest comparative comment to make is that one cannot find the same level of elite coherence around renewable energy in other governmental arenas. Statements of political support for renewable energy are plentiful, but either serious policy attention was slower to emerge (in Wales and Northern Ireland), or renewables spent periods associated predominantly with environmental goals (as in Wales), or there is a lack of an institutional framework that can give a full integrated expression of the benefits of renewables (in Northern Ireland). Consistent cross-party support is also hard to find: most spectacularly in the case of widespread Conservative MP opposition to on-shore wind (mainly) in England. Even where there is strong consensus in favour of renewables the lack of a clear champion to drive the agenda may be a limiting factor (as in Northern Ireland).

Although landscape and ecological protection is relevant to renewable energy development across the UK, with onshore wind and major new grid projects attracting public opposition in many parts of the realm, amenity and landscape groups have found it harder to exercise influence in Scotland than in Wales or England: partly because they are less well resourced, but also because of the difficulties of challenging a sustained, national economic mission around energy development which enjoys consistent high-level support.

Market support

Systems of market support have been an essential ingredient for boosting the development of renewable energy technologies within network and market conditions that would otherwise advantage conventional power generation technologies. In the UK, such systems are designed in Westminster, and have operated more or less consistently across the UK, with broadly common effects in England, Northern Ireland, Scotland and Wales. Thus, the problems of the Non-Fossil Fuel Obligation resulted in little new renewable energy capacity anywhere in the UK. The switch to the Renewables Obligation (launched in 2002; 2005 in Northern Ireland) stimulated an upturn in renewable energy investment – predominantly on-shore then off-shore wind – observable in all parts of the country. The RO set electricity suppliers an obligation to achieve increasing targets of renewable energy, and suppliers suffered significant financial penalties for every unit of energy they failed to supply towards their target. The Renewables Obligation (RO) was formally broken up into separate mechanisms for England and Wales, Scotland and Northern Ireland. However, the ‘Renewables Obligation Certificates’ (ROCs) which are issued to renewable generators in respect of production of units of electricity can be transferred between the different territorial schemes making the RO operate, for practical purposes, as a single UK market.

So, although the Northern Ireland Executive and Scottish Government have full and operational powers respectively over financial support, any use of these powers may not be the most important factor shaping the overall volumes of renewable energy installed in these countries to date. Each has benefited from being part of a larger, common, UK-wide pool of financial support. Thus Scotland’s rapid development of on-shore wind has been paid for by UK (mostly therefore English) consumers. Northern Ireland has chosen to be part of the UK-wide system for these reasons, too: in isolation, or in collaboration with the Republic of Ireland, there would be less money available.

The Scottish Government has led the way within the UK in using its operational powers to set differential ROC levels to give extra help to emergent technologies in wave and tidal stream power: a move widely felt to have contributed to the growth of commercialisation and testing facilities in

Scotland compared to other parts of the UK. In Northern Ireland the NIRO has a special banding for small-scale renewables (<500kW) and, more recently, farm-scale anaerobic digestion.

The most significant policy development currently on the horizon is Electricity Market Reform (EMR), a process to create a new system of market support, driven by Westminster. This will be more centralised in its operation than the Renewables Obligation, as contracts for difference will be drawn up for the UK as a whole, and there is widespread concern both that this is designed mainly to support new nuclear development and will work against new renewable energy capacity, especially new, smaller entrants. Given its renewable energy ambitions, the Scottish Government was initially very critical of the proposals, but did not sustain its opposition. That it did not do so may reveal the limitations of its bargaining position in the absence of full powers in this area, and the fact that Scotland's energy ambitions embraces large-scale development in technologies other than renewables

That the rapid expansion of renewable energy in Scotland is now recognised by some in Westminster as central to the overall UK decarbonisation goals may have secured the Scottish Government a sympathetic ear. The Scottish Government has succeeded in gaining concessions from Westminster including being paid £103 million in funds in a one-off settlement of a dispute about disbursement of revenues gained from the earlier NFFO mechanism, the acceptance of higher ROC payments for wave and tidal stream technologies, and a settlement for transmission charges that will make it cheaper than before to transmit renewable energy supplies from Scotland to other parts of the UK.

Northern Ireland has also agreed to join the EMR while retaining the right to negotiate a different strike rate to reflect local conditions, but in effect loses much of the autonomy it could have over its own market support initiatives or foster greater links on this issue with the Irish Republic.

In addition to the commentary above, it should be noted that Feed-in Tariffs for smaller scale renewables (less than 5MW capacity) are operated in a consistent way across England, Scotland and Wales, in a process managed by Ofgem.

Planning and consents

The processes of determining planning and other consents for major new electricity generation infrastructure is an important process shaping how much renewable energy potential gets translated into actual output, and how quickly. Planning policy is also important in determining the spatial distribution of renewables and ensuring it maximises local conditions such as wind resource and protection of sensitive habitats and landscapes. Planning is also a sphere in which almost all of the relevant powers are devolved, allowing a four-way comparison between England, Northern Ireland, Scotland and Wales.

If approval rates are taken as 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. This reflects conditions that are not readily replicable elsewhere. Centralisation of planning is one factor - all planning applications for renewable energy in Northern Ireland are determined by the Department of the Environment - but also the main planning guidance for renewables (PPS18) takes a more liberal criteria-based approach than seen elsewhere, while political involvement and local objections are generally low.

The planning regime in Scotland is viewed positively by renewable energy interests, but changes made since devolution are better characterised as evolution than revolution. The Scottish Government has continued to operate Section 36 (generation over 50MW) and Section 37 (grid) consenting regimes for major energy projects, rather than replacing them with new procedures as has happened for England and Wales under the 2008 Planning Act and 2011 Localism Act. While the latter are regarded as 'streamlined', evidence that these procedures are actually swifter than Section 36 is far from clear. Interviewees felt that the Section 36 process allowed more helpful interaction between consenting bodies, developers and stakeholders than the more 'arms length' 2008 Act process.

Other key ingredients in the positive perception of Scottish renewable energy planning are the willingness of the government to work actively with local planning authorities to help them to be facilitative towards renewable energy developments, and the identification of nationally important infrastructure projects in the National Planning Framework.

The most significant planning policy innovation arising from devolution is in Wales, where in 2005 the Welsh Government instigated a national zoning framework to give a spatial steer and supportive policy context for large-scale on-shore wind energy development in seven demarcated areas of upland Wales. The resulting spatial concentration of major windfarm applications, particularly in mid-Wales, and especially the proposed new grid connections, have generated significant and determined public protest. Although the Welsh Government has stuck by their spatial guidance, their reactions to this protest (by capping wind energy generation capacity within the zone), and the fact that many consents for the wind farms will be issued by Westminster not Cardiff (because they are more than 50MW), has made it difficult for the Welsh Government to project the same credibility with the industry as the Scottish Government. Although successive Welsh Governments have pressed Westminster to be given more control over planning consents for major energy infrastructure, they have repeatedly been rebuffed. Doubts that the Welsh Government would be as likely to consent as much on-shore wind capacity as Westminster is a factor here.

That said, the volume of investor interest triggered by the Welsh Government's spatial zoning framework, totalling more than 2000MW of potential installed capacity, exceeds anything achieved in comparable regions of England, where a tepid commitment to regional-scale spatial planning approaches for renewables come to an end in 2010, when the Coalition Government in Westminster abolished the regional planning and development machinery in England.

The other main conclusion on planning is that there is remarkable convergence across the devolved governments that effective decision making for energy – along with other infrastructure – needs centralised, streamlined procedures (in effect, we are seeing 'regional centralism'). This has implications for public engagement in sustainable energy transition, which could ultimately come to define the upper limit for development of particular renewable energy technologies.

Steering the grid

Electricity distribution and transmission networks are widely acknowledged to be a critical factor in shaping the scope for renewable energy development, but our main conclusion is that devolved governments (and government generally) have found it difficult to steer grid development in directions more conducive to renewables. This is because:

- of the massive inherited infrastructures of previous and current energy pathways;
- privatisation of the electricity industry placed much regulation in the hands of arms-length bodies, operating on a Britain-wide basis or, as in Northern Ireland, being charged to give greater attention to consumer prices than production goals;
- grid development is largely market-led i.e. new grid capacity projects only begin solidly to emerge once generation projects are coming forward;
- high voltage, terrestrial grid lines of any length almost invariably attract significant environmental opposition.

Capacity improvement projects linked to renewable energy expansion are coming forward in Northern Ireland (the North-South interconnector), Scotland (Beaully-Denny) and Wales (the mid-Wales interconnectors). Each was deeply conflictual, 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.

For reasons we have already explained, a combination of widely-based political commitment, national strategies and the possession of relevant powers enabled the Scottish Government to sustain confidence that the Beaully-Denny reinforcement would be realised, despite vociferous protest. This is not a message that the Welsh Government has been able to convey so convincingly about the mid-Wales connectors. Northern Ireland faces specific challenges in coordinating consents for key grid investment in a cross-border context.

The devolved governments also engage over strategic grid management debates at a UK level. The Scottish Government had long argued for reforms to transmission charges which would enable Scottish renewable generators to pay lower rates for sending their power south to England. In 2012, OFGEM announced proposals which partly met their demands.

5 *The view offshore*

For the first decade of the 21st century, the uneven development of renewable energy around the UK was largely a story of the uneven development of on-shore wind, which faces a particular set of economic, technological and social conditions. However, a different perspective on progress with renewable energy, and the effects of devolved government, can be obtained by looking at marine renewables - offshore wind and more emergent technologies like wave power and tidal stream.

The two key policy dimensions in marine renewables echo those of other technologies: one is planning consent and the other is financing. Planning is largely devolved, at least to Northern Ireland and Scotland, while financing is largely reserved to Westminster. Key movers in orchestrating the expansion of offshore wind – the most readily available marine technology – have been the UK government (DECC) and the Crown Estate, which organises the leasing of areas of the sea to wind developers. In English waters, the main player in the consenting process to date has been DECC, with the UK government also central in upping the level of support for offshore wind (to two ROCs/MW). To date, only 'Round 1' and 'Round 2' projects have been implemented,

delivering some 2700MWe of offshore wind capacity by the end of 2012, with Round 3 projects further back in the development pipeline.

The Governments in Scotland and Northern Ireland have both been supportive of offshore wind development, and additional leasing tranches in the territorial waters of each government have been organised by The Crown Estate. Northern Ireland may well have started earlier were it not for jurisdictional problems with the Republic of Ireland over who owned the sea bed. With these constraints resolved, the leasing of 800 MW of offshore wind and tidal projects was announced as recently as November 2012. The Scottish Government has taken steps to create a 'one stop shop' consenting agency for marine projects - a more integrated set of arrangements than can readily be achieved for England or Wales - and channelled resources into port developments to support offshore wind.

What is less clear is whether these actions by Northern Ireland and Scotland will change the general pattern of offshore wind development in the near future, which is significantly shaped by the economics and, to some extent, the locational politics of siting. To date, most onshore wind capacity is located in the English North Sea and Liverpool Bay (bridging England and Wales), where the shallow seas have delivered lower development costs, while the fact that these areas have already been 'industrialised' by oil and gas, or are surrounded by coastal communities facing economic problems and glad of the jobs, has helped to quell social opposition. The Scottish and Northern Irish leasing tranches, like Round 3, are further away from installation, for which the prospects of coming forward are also subject to the uncertain level of price support available after Electricity Market Reform.

If progress with offshore wind, to date, has been dominated by Westminster, the promotion of wave and tidal stream power has been given much greater attention by the devolved governments (and, until their abolition, English regional development bodies). 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, as noted above, has led the UK in channelling increased levels of ROC support to these technologies, and offered financial support in various forms. It has provided the biggest share of funding for the European Marine Energy Centre (EMEC), based in the Orkneys, which tests and evaluates marine renewable technologies, and issued leases for several commercial sized schemes in its Pentland Firth marine renewable development zone. Demonstration facilities are also in place around the coast of Northern Ireland (in Strangford Lough) and Wales (in Ramsey Sound). The Scottish Government has also been pro-active in raising the profile of marine renewables in the European Union.

6 Promoting social engagement in renewable energy

To what extent has devolution brought with it moves towards wider public engagement in renewable energy development, either as citizens in the political sphere, or as the owners and developers of renewable energy?

Although the central product of devolution has been the creation of new tiers of elected representatives, electorally accountable to specific geographic and national communities, there is little sign that the devolved governments have actively sought to widen public engagement in energy decision-making. Indeed, if one regards the planning system as the main set of opportunity structures by which public get engaged in decision-making, then the governments in Wales and

Scotland broadly share the emerging Westminster convention that renewable energy constitutes major/nationally important infrastructure, for which consenting regimes should be centralised and streamlined. In Northern Ireland the central government has retained control of consents since the 1970s, and will continue to do so as the Executive 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.

The only (partial) exception to this pattern is that the Welsh and Scottish Governments have shown a greater inclination to use spatialised policies for on-shore energy and other infrastructure than Westminster, in turn giving future national development scenarios greater tangibility and attracting more responses.

Successive governments in Westminster, Scotland and Wales have given support to the development and ownership of renewable energy by communities, and have backed this support with grant schemes and advice. Wales has used European money to support social enterprises in developing sustainable energy projects; the Scottish Government has grants too, plus a new target of obtaining 500MW of community- and locally-owned renewables by 2020. The Department of Enterprise, Trade and Investment in Northern Ireland has recently tendered for a project to investigate the potential for community energy, but tends to be behind on this issue.

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. Community renewables have 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. At the same time, key features of the current broad systems of energy provision, such as market support, including Electricity Market Reform and the availability of finance, tend to favour large, existing businesses.

Devolution has not of itself spawned new voices campaigning for alternative, more community-centred, decentralised patterns of energy development or challenging conventional policy. Of the political parties, Plaid Cymru has presented alternative visions for a more indigenously-based Welsh economy, including energy.

7 Conclusions

We would not conclude that devolution – actions and activities undertaken by the devolved governments – are necessarily the most important factors shaping the development of renewable energy in the UK. This is because devolution is still a relatively new dimension of the system for energy provision. Many of the conditions affecting this sector – the market arrangements, the grid, key incumbent actors and business structures, the broad policy philosophy – were established prior to and during electricity privatisation. Moreover, decisions affecting key drivers for renewable energy investment are still made mainly in Westminster and shape decisions across the UK. In particular, budget discipline exercised through the Treasury on market support has a powerful effect.

Nevertheless, the highly uneven geographical and technological distribution of renewable energy development across the devolved governments suggests that there is a phenomenon to explain,

and that devolution is a factor. In particular, for much of the post-1998 period, rates of renewable energy development in Scotland have been greater than in England; so too, on some measures, are outcomes in Wales and Northern Ireland.

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. Scotland has achieved more, to date, with fewer powers than Northern Ireland and, for some technologies, more than England, to which many of the full powers of Westminster government directly apply.

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.

- The availability of larger, relatively less contested **sites** for on-shore wind in Scotland has also been a factor, and also meant more projects went through central consenting procedures.

From our perspective, this 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 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 have noted the slower rate of renewable energy development in the UK compared to Europe's renewable energy leaders, Germany and Denmark, and the higher cost, and attributed 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. 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.