



Scottish Council for
Development and Industry

POLICY SUBMISSION

IMPROVING GRID ACCESS

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SCDI is an independent and inclusive economic development network which seeks to influence and inspire government and key stakeholders with our ambitious vision to create shared sustainable economic prosperity for Scotland.

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Improving Grid Access

1. SCDI is an independent membership network that strengthens Scotland's competitiveness by influencing Government policies to encourage sustainable economic prosperity. SCDI's membership includes businesses, trades unions, local authorities, educational institutions, the voluntary sector and faith groups.

Introduction

2. In December last year, SCDI published The Future of Electricity Generation in Scotland the first major independent study of the Scottish Government's renewable energy targets which it had commissioned from the independent international energy research consultancy Wood Mackenzie. This concluded that Scotland can hit its target of 50% from renewable sources by 2020 and maintain exporting electricity to England and Northern Ireland. Scotland's electricity sector will, consequentially, produce a third less carbon dioxide. Reaching this Scottish target is essential for the UK's renewable energy and climate change obligations.
3. In Wood Mackenzie's view, onshore wind will provide more than 80 per cent of the increase in Scotland's renewable electricity by 2020, with marine, biomass and hydro expanding at a tenth of the rate of new wind. This is likely to mean a 500 per cent increase in the numbers of wind farms, with Scotland needing around 450 MW of new wind power – more than twice the size of the country's biggest operational wind farm - every year until 2020. Expansion at this rate will mean £10bn of investment in new electricity generation between now and 2020.
4. In total, Scotland has an estimated potential of 36.5 GW of wind and 7.5 GW of tidal power, 25% of the estimated total capacity for the European Union and up to 14 GW of wave power potential, 10% of EU capacity. In the long-term, the renewable electricity generating capacity in Scotland may be 60 GW or more. The majority of this potential is located around the Highlands and Islands where load factors for wind energy are over 40%, much higher than in most of the UK. The Crown Estate has announced that it will be offering exclusivity arrangements to companies and consortia for 10 sites for development of offshore windfarms within Scottish territorial waters. In total, the sites have the potential to generate more than 6GW of offshore wind power. The Crown Estate Round 3 Offshore Wind Farm identifies a further two potential development zones around Scotland. The Crown Estate has invited initial proposals from developers for the UK's first commercial marine power sites in the Pentland Firth and surrounding waters. The aim is to deliver 700MW of new offshore wave and tidal power by 2020.
5. The recently published report by the Electricity Networks Strategy Group (ENSG) sets out three scenarios for the growth of renewable electricity capacity in Scotland by 2020: from a minimum scenario of a 6.6GW of wind generation, a second scenario of 8 GW of wind generation and a third scenario of 11.4 GW. The importance of Scotland to the UK's bid to combat climate change is shown

by the fact that 70% of Ofgem's proposed investment in electricity grid transmission projects in the UK over the next two years is targeted in Scotland.

6. Wood Mackenzie concentrated on the future of electricity generation in Scotland, but this is within the context of its high voltage power transmission network being connected to systems in England and Northern Ireland and, after the introduction of BETTA in 2005, its integration into the wider GB electricity trading market. In Scotland, Wood Mackenzie forecast that onshore wind will increase by 5.5GW, from 1.3GW today to 6.6GW in 2020, towards the upper end of estimates from the Scottish Government. By way of comparisons, it forecasts that only 2.3GW will be added in England and Wales and around 1GW added in Northern Ireland.
7. Wood Mackenzie also highlighted the potential loss of base load generation, specifically nuclear and coalfired plant closures that may occur between 2020 and 2030, and the possibility that this could give rise to a generation shortfall. Wood Mackenzie states that if Scottish demand is to continue to be served by Scottish generation, it is highly likely that new base load capacity will be needed.
8. Power transfers from Scotland to England have been limited by the maximum operating capacity of the cross-border circuits. However, all the generation scenarios for renewables assume significantly increased power transfers from northern to southern Scotland and from Scotland to England. So the UK's renewable energy and climate change targets depend on North-South electricity network reinforcements, like Beaully-Denny and at the Cheviot boundary; and an enduring transmission access and charging regime which supports investment in Scotland at far higher levels of around £1 billion every year in mature renewable technologies, in extending the lives and constructing new power stations to back up variable power from renewable sources and in developing new technologies.

Q1 - Taking into account the need for a timely solution to access delays for new generation projects, and the costs associated with taking action, do you agree with the targeted intervention planned by Government?

9. The current grid connection system was established to allow for the connection of a relatively small number of very large generation projects, often with long lead times available. The recent trend towards renewable generation has seen a much larger number of small projects seek access to the grid, which has contributed to the current backlog. As access is allocated on a 'first come, first served' basis, projects with planning consent can be stuck in the queue behind projects that are less well developed. Renewables projects can currently wait for 10 years for access to the grid and the worst affected areas are often the ones with the biggest renewable resource. For instance, as Argyll and Bute's grid infrastructure is considered effectively "saturated" even very small projects have been refused connections before 2018. These issues have long been a concern to SCDI and it agrees that fundamental changes are required to improve access.
10. SCDI welcomed the interim Connect and Manage regime which has been brought forward by National Grid and approved by Ofgem to reduce delays and

more speedily connect projects before major transmission reinforcements are made by taking advantage of the rapid growth of variable wind generation on the system to increase the potential for greater sharing of existing capacity. It is very encouraged that around 1 GW of renewables projects in Scotland have been identified which could, thus, be brought forward and connected to the grid more quickly. SCDI agrees that there is a need for a timely and enduring solution to access delays for new generation projects, but considers that it is impossible to target transmission access without tackling the barrier of transmission charging.

11. The objective of this intervention should be an appropriate model which stimulates the deployment of renewables and supports improvements to grid infrastructure over the next 7 to 8 years to achieve the 2020 targets. Once the national grid is made fit for purpose, other access models should be considered.

Q2 - Do you have any evidence to indicate that other issues should be considered as part of these access reforms, rather than, for example, through the normal governance procedures?

12. SCDI has consistently made the case that the current system of transmission charging is wrong and unfair. It has resulted in higher and less predictable charges for Scottish based generators and is a particular disadvantage to those companies developing renewable energy projects in the Highlands and Islands where there is the UK's best and the most reliable sources of renewable power. Scottish generation accounts for 12% of the total, but pays roughly 40% of total UK transmission charges – around £100m per annum more than its 'fair share'.
13. As a result, Statkraft UK Ltd announced earlier this year that development of the FSOL Wind Project in Orkney (proposed capacity of up to 125 MW) had been suspended. The estimates for transmission charges for the proposed 550MW Viking Energy wind farm on Shetland are so high that it has sought derogation from GB SQSS to request a single circuit transmission connection to mainland Scotland in order to reduce the costs i.e. it has reduced its security in order to limit its exposure to unpredictable, high and discriminatory transmission charging.
14. These case studies illustrate serious flaws in the current transmission charging regime: significant extra cost, volatility and uncertainty. In island locations, there is further uncertainty over circuit numbers and security requirements which are currently based on annuitised capital costs rather than being based on the National Grid's model and are subject to significant future volatility. The range of transmission charges that developers in the Highlands and Islands must build in to their business plans are significant enough to model project economics that show they are viable one year and unviable the next. This analysis demonstrates that, perversely, the current transmission charging regime disincentivises investment in the areas with the most productive and reliable energy resources.
15. Companies involved in the Scottish inshore and Round 3 offshore wind process and from wave and tidal companies involved in the Round 1 Pentland Firth process face higher and generation costs than established technologies like

onshore wind. They have emphasised that without projects remaining viable they will not proceed and the locational charging regime could destroy their viability.

16. SCDI is supportive of the proposals by the Scottish Government, ScottishPower, Scottish and Southern Energy, and the Scottish Renewables Forum for a new methodology in which there is a level-playing field with generators using the UK transmission network being levied at a uniform rate for each unit of energy that enters the system, irrespective of its location. This would appear a simpler, more predictable and fairer system, which is aligned with Government policy objectives and would not impose extra costs on National Grid or the consumer. The proposed approach would support integration of the European energy market. A majority of European countries use a postal charge, especially on the continent.
17. In its Strategic Energy Review published last November, the European Commission has identified the creation of a European super-grid as the key for European energy security and achieving the decarbonisation of supply. European Directive 2001/77/EC clearly calls for charging regimes to be nondiscriminatory for electricity from renewable sources, including in peripheral areas. This is plainly contravened by the current transmission charging model.
18. SCDI accepts the view that there are a range of important barriers to investment in new generation, renewable or otherwise, such as the present planning regime. But the evidence is that the current transmission charging regime is a significant disincentive and that a more appropriate approach is needed for new challenges. To successfully compete for globally-mobile investment in a prolonged period of financial constraints, Scotland and the UK need a stable and predictable regime which supports the financing of new projects via a fair and transparent approach. In view of the evidence presented, European priorities and the need to target transmission access at the same time as transmission charging, SCDI believes that transmission charging should also be considered as part of these reforms.

Q3 – From what date do you consider the enduring arrangements should apply?

19. No comment.

Q4 - Do you agree with our initial assessment of the impacts of the industry grid access proposals (including on the Fourth Model, which was not formally considered by the industry process)?

20. SCDI notes that the Department for Energy and Climate Change's (DECC) consultants stated in their detailed design and high level impact assessment that the socialised model offers the best chance of meeting Government's objective:

“On balance, the model most likely to result in meeting all of the UK Government's objectives is the Connect and Managed Socialised Cost model. In particular, it best facilitates the accelerated connection of

renewables and still facilitates flexible plant to remain on the system to provide services to the GBSO for maintaining security of supply.”¹

Q5 – Do you agree with our initial view that we should focus on models based on a Connect & Manage approach?

21. Yes. The interim Connect and Manage regime is working well and improving grid access. This suggests that the approach is appropriate for the big challenge over the next 7 to 8 years of delivering the investment necessary for the 2020 targets.

Q6- Do you agree with our initial assessment of the impacts of the different Connect & Manage models?

22. SCDI agrees that a Connect and Manage (Targeted) model would make Scotland, especially the North, less attractive for investment in renewable and other clean generation, such as the proposals for Carbon Capture and Storage at Longannet, which would increase the long-term security of supply risks for Scotland and the UK, and make it more difficult to reduce their CO₂ emissions.

Q7 - Are there any further impacts of these models you consider ought to be borne in mind?

23. A Connect and Manage (Socialised) model would support the integration of the European energy market which would improve security of supply in Europe.

Q8 - What generation mix do you consider these various models would be likely to lead to by 2020?

24. A Connect and Manage (Socialised) model would maximise the percentage of renewable energy in the generation mix and best place the UK to hit its targets.

Q9 - In your view, what impact on overall generation and transmission costs would the various models be likely to lead to and by when?

25. SCDI notes DECC’s initial assessment that the costs to consumers of the Connect and Manage (Socialised) model would be £1 per household per year to 2020. The impact is therefore maximised growth in renewable energy generation and CO₂ reduction with a very small increase to consumer bills. With the planned upgrades to electricity networks, constraint costs should disappear as an issue.

Q10 - Do you have any evidence of any risks or unintended consequences as a result of any elements of these models?

26. No comment.

¹ Detailed design and high level impact assessment for DECC’s two proffered options for GB Transmission Access reform p.15 paragraph 1.

Q11 - Do you agree with the Government's initial view that a model along the lines of Connect & Manage (Hybrid) is likely to best meet our objectives?

27. As no detailed evidence is presented to support the hybrid model, it is impossible to conclude that it is likely to best meet the UK's Government objectives. Information on and objective justification for the proportion of constraint costs which would be targeted will not be available until after this consultation. It is unclear whether the model would reduce overall investment or send signals which shift investment to other parts of the UK. It is possible to say with certainty at this stage only that it will be more complex than a socialised model and that higher cost will inevitably deter some projects which would contribute to UK targets, initially in the areas with the best resources and potentially offshore too.
28. SCDI is concerned that, following the introduction of this new approach, generators in the Highlands and Islands may face even higher constraint costs and disincentives to investment if other southerly boundaries become congested.
29. In contrast, as DECC's consultants concluded, the Connect & Manage (Socialised) model is "most likely to result in meeting all of the UK Government's objectives" and "best facilitates the accelerated connection of renewables". It is the simplest, most timely solution which will enable the investment in new capacity and networks identified in SCDI's and the Electricity Networks Strategy Group's reports. Constraint costs would then become, at most, a minor issue. Socialisation would also ensure that the UK's charging system complies with the EC Directive regarding no discrimination on renewables in peripheral regions.

Detailed questions on the models for consultation:

Q.12 - In relation to the Connect and Manage (Hybrid) model, what balance do you consider to be appropriate between socialisation and targeting of additional constraint costs? How should these costs be recovered? Would a form of locational BSUoS be an appropriate mechanism for targeting a proportion of the additional constraint costs? Should this apply to everyone behind an identified constraint or be targeted solely at new generation opting for a Connect & Manage connection? Are there other means for targeting constraint costs (apart from locational BSUoS) which the Government ought to consider?

30. SCDI supports a Connect and Manage (Socialised) model. It is difficult to comment on an appropriate balance between socialisation and targeting of additional constraint costs in a Hybrid model as DECC has presented very little evidence, but, clearly, SCDI would argue for a balance which does not act as a barrier to investment in renewables projects in the areas with the best resources. Constraint costs should be predictable over a period of years and not be punitive.

Q13 - Do you consider that any element of user commitment beyond existing requirements is necessary as part of the solution? If so, what form should this

take? Should this be for a fixed period (e.g. five years as envisaged in the Shared Cost & Commitment model) or for a flexible period?

31. No comment.

Q14 - Do you consider that some kind of deferred recovery of some element of constraint costs should form part of the solution? If so, what form could this take? What proportion of costs should have deferred recovery and over what length of time?

32. No comment.

Q15 – Do you have views on whether a deferred recovery mechanism would be allowable under International Accounting Standards and if so how this might work?

33. No comment.

Q16 - Are there any other features of the models described which you consider could be amended or improved?

34. No comment.

Q17 – Do you agree with our initial view that the enduring access regime should apply equally to distributed generation in categories (a) and (b)? What would be the benefits and impact, in terms of facilitating access to or efficient use of the transmission system, of applying the new regime to this distributed generation? What interactions do you see between the models set out in this consultation and distributed generation? Do you agree that any further amendments to the treatment of distributed generation should be progressed through the industry - Ofgem governance process?

35. No comment.

Summary questions:

Q18 – Are there any other issues that Government should bear in mind to ensure the sustainable and effective implementation of changes to support the efficient access to and use of the transmission system?

36. The consultation does not provide detail on the transitional arrangements for any of the models. DECC should ensure that any amendments to access and charging arrangements which are currently being taken forward outside this consultation process – such as the CAP 170 proposals on balancing services – are also consistent with the objectives which the Government has set out.

Q19 – Do you have any specific comments on licence and code amendments required to implement these models?

37. No comment.

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