SCOTTISH GOVERNMENT RESPONSE TO CONSULTATION ON ELECTRICITY MARKET REFORM

Overview

1. This document sets out the Scottish Government's formal response to the UK Government's consultation on Electricity Market Reform[1] (EMR).

2. It complements and develops the Initial Response[2] from the Scottish Government published on 16th December 2010. It reflects the views of the Scottish Energy Advisory Board. It has been compiled after extensive engagement with UK Ministers, the Scottish Parliament, Scottish energy sector and business representative bodies, trades unions and other views from across the Scottish civic spectrum of interests.

3. The Scottish Government notes that the UK Department of Energy and Climate Change aim to publish a White Paper on options for change based on the EMR proposals in June 2011, followed by subsequent legislation in a UK Energy Bill in autumn 2011.

4. Given the key role that Scotland will play in delivering the UK's low carbon renewable energy future it is imperative that the Scottish Government is fully involved in the development of the proposals for EMR, up to and beyond the publication of the forthcoming White Paper. The Scottish Government is now working closely with UK colleagues as this work progresses. We will continue to do so.

Context

5. The Scottish Government recognises that since privatisation of the GB energy market and the introduction of the British Electricity Transmission and Trading Arrangements (BETTA) that the electricity industry in Scotland has delivered significantly in terms of high quality of electricity services and security standards, renewed capacity and relatively rapid deployment of renewable energy capacity. The Scottish Government has focused significant and sustained political, policy and practical support on the Energy sector in Scotland and on renewable energy and carbon capture and storage development and delivery.

6. The Scottish Government recognises the significance of the opportunities in accelerating the move to a low carbon generation mix, both in terms of carbon reduction and renewable energy targets, but also delivering sustainable growth and jobs in the electricity sector. We also recognise the challenges the scale of investment needed in new generation, transmission and distribution, of developing new and emerging renewable technologies and CCS, and of meeting future electricity demand, protecting the interests of consumers and ensuring security of existing and future supply.

7. Scotland has some of the best renewable power resources in Europe with as much as a quarter of Europe's offshore renewable energy resource and an estimated 10% of its capacity for wave power. The Offshore Valuation Study published in May 2010 estimates Scotland's practical offshore renewables potential capacity at 206 GW. By harnessing around a third of this resource, installed offshore renewables capacity could reach 68 GW by 2050 – more than ten times our energy need. In Scotland, we are on track to achieve our target of 31% of

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[1] http://www.decc.gov.uk/en/content/cms/consultations/emr/emr.aspx
[2] http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Grid-Connections/EMR-consultation-UK

electricity consumed in Scotland provided by renewable energy, and we are confident of delivering 80% by 2020. Scotland has almost 8 GW of renewables capacity installed, under construction or consented around Scotland and Scottish Ministers have determined a total of 43 energy applications since May 2007.

8. In November 2010, the Scottish Government published its Draft Electricity Generation Policy Statement[3] setting out a clear evidence base for Scotland to meet the 80% renewables target, backed up by new or upgraded thermal plant, progressively fitted with carbon capture and storage by 2030. This also shows clearly that there is no need for new nuclear power stations in Scotland to meet our future electricity demand and that opportunities for onshore and offshore wind, for wave and tidal energy, and for CCS on coal and gas generation are vast in Scotland.

9. The UK has set a Renewable Energy target of 15% of energy from renewables by 2020. This target is equivalent to a seven-fold increase in UK renewable energy consumption from 2008 levels and is the most challenging of any EU Member State. Energy from Scotland is already playing, and will increasingly play a central role in helping meet this target. The Scottish Government is determined that Scotland plays its part at UK level and is working closely with UK Government counterparts to deliver this. For example, UK and Scottish Government worked closely to design and deliver more effective and appropriate grid access arrangements to connect new renewable generation. The resulting "connect and manage" approach introduced in August 2010 for new renewable generation, with socialisation of the associated costs of managing associated system constraints to the grid ahead of necessary reinforcement, was a pragmatic and effective policy driven approach to accelerate the transition to a low carbon generating mix.

10. Scotland has the energy potential to do even more help meet ambitious targets on climate change and renewable energy at both UK and EU level. The Scottish Government is committed to seizing the energy opportunities that Scotland's natural resources can deliver. Through development and deployment of existing and emerging renewable technologies, Scotland can help diversify energy supply, with an emphasis on developing renewable and low carbon technologies and capacity to help ensure future security of energy supply in Scotland, in the UK and in Europe.

Current Market Arrangements

11. The Scottish Government shares the recognition by the UK Government in the EMR that the current market and regulatory approaches delivered by BETTA are no longer fit for purpose to meet these challenges and welcomes this opportunity to reassess the existing UK electricity market. We share the assessment in the consultation paper that there is a compelling case for reform to the existing trading arrangements to make them fit for purpose for the future. The Scottish Government has long argued that the existing market and regulatory frameworks are a barrier to developing Scotland's full energy potential. A shift to an "outcome driven" framework is required; in other words, trading arrangements designed to deliver the secure and sustainable fuel mix which will meet our climate change objectives, facilitate the low carbon economy and make crucial economic development contribution.

[3] http://www.scotland.gov.uk/Publications/2010/11/17094217/0

12. The changes that are required are not limited to those which the consultation addresses. In particular, the key barrier to additional low carbon capacity in Scotland is not a constraint on investment due to risk in the generation market, but the availability of transmission connections at a fair price for new generation. It is therefore important that the outcome of this consultation is brought together in a coherent way with the review of Ofgem and Ofgem's Project Transmit.

13. The existing electricity market and regulatory frameworks are geared towards a market led approach based on a competitive market in generation. This assumes supply and demand will deliver optimal prices and qualities, with light touch trading arrangements and measures to limit market power. It assumes this will deliver the best and cheapest solutions in the design of the transmission and distribution system, based on cost reflective pricing. It is founded on principles of competition in generation and Cost Reflective Pricing in Transmission and Distribution. It assumes the role of Governments is to facilitate the generation market, limit market power, and deliver light touch regulation in transmission. It does not see a role for Governments in choosing the fuel mix, or to use the transmission system to influence the fuel mix.

14. These principles have changed – and changed fundamentally – with renewable energy, carbon reduction and climate change targets set by Government at Scottish, UK and EU level. The EMR consultation marks a decisive, and irreversible, shift towards this Target led approach with the overarching aim of delivering the transition to a low carbon generation mix.

15. The Scottish Government has increasingly argued that the existing market and regulatory frameworks are a barrier to developing Scotland's full energy potential and enabling renewable energy from Scotland to make a major contribution to meeting Scottish, UK and EU renewable energy targets.

16. The EMR has the potential to deliver an energy regulatory framework which provides the regulatory independence, stability and continuity that is key to investor, consumer, and political confidence. Getting the EMR and the other strands of energy market and regulation right, it could be a major step towards an energy regulatory framework better able to deliver low carbon energy potential at both Scottish and UK levels, with the right support mechanisms for renewables and CCS. However, done wrong, the EMR could impact adversely on the renewable energy sector, and could see support for nuclear generation at the expense of renewable energy sources and undermine CCS development in Scotland. Getting it wrong, with little – or no - change in the way Ofgem works, on locational charging and undermining the effectiveness of the Renewables Obligation Certificate (ROC) schemes could, cause an investment hiatus in the development of renewables and CCS, and have significant implications for Scottish energy sector growth, with an associated impact on the contributions these can make to meeting Scottish, UK and EU renewable energy and climate change targets.

17. Based upon the indicative hiatus identified within the EMR impact assessment we would have some concerns that any investment hiatus could reduce our deployment of renewables by around 2-3 GW of capacity by 2020. As DECC will be aware, this could lead to a risk of Scotland failing to deliver our 2020 renewable electricity target solely as a consequence of the bureaucratic complexity this reform could present.

18. More worrying for both Scotland and the UK would be the impact any hiatus could have on the supply chain developments that are needed to support our renewable energy aspirations. Decisions on these supply chain developments are being taken now and a worrying unintended consequence of any deployment hiatus would be the failure to provide the investment security that these developments need both now and in the future. Failure to capitalise upon this obvious and immediate investment opportunity would be a brake on the transition to a low carbon future generation mix and cause the UK to continue to be reliant on fossil fuel and imported supplies for decades to come.

EMR - Overarching Principles to deliver a low carbon generating mix

19. The Scottish Government supports the key principles underpinning the UK Government move towards a Target led approach. These are:

- maintaining the benefits of competitive forces in a vigorous private sector led market;
- doing so within a policy led context where the desired outcome in the generation market and mix are set through targets;
- the desired fuel mix outcome will determine the appropriate trading arrangements rather than trading arrangements driving the outcomes;
- requiring intervention in markets, by a "guiding mind";
- the structure of the transmission system is determined simultaneously with the generation mix, and used as a lever to help deliver the desired fuel mix.

20. We believe the Scottish Government must therefore be closely involved in:

- designing the low carbon targets that will shape the future generation mix;
- designing the mechanisms and interventions that will deliver it;
- designing and developing and maintaining the institutional roles, capacity and accountability structures that will underpin it.

21. The Scottish Government also firmly believes that the EMR needs to be considered closely with two other key strands of market and regulatory reform that are underway. Namely:

- the review by DECC of the role and functions of the GB energy regulator Ofgem[4], to consider the changes needed to energy regulation which will enable Governments to achieve energy and climate change goals. This review will report in Summer 2011;

- the review by Ofgem of the existing locational approach to transmission charging (Project Transmit[5]) which is a key issue for the Scottish Government and which will also report in summer 2011.

22. It is important that views from all stakeholders are taken into account and this consultation is clearly a necessary and useful step on the path to delivering successful reform. In formulating this response, the Scottish Government has undertaken extensive engagement and discussion with a broad range of energy sector, business and wider civic interests in Scotland. It will be important that active engagement with stakeholders continues as the detail

[4] http://www.decc.gov.uk/en/content/cms/consultations/ofgem_review/ofgem_review.aspx

[5] http://www.ofgem.gov.uk/Networks/Trans/PT/Pages/ProjectTransmiT.aspx

of the EMR proposals emerges after 10th March 2011. The Scottish Government will work with UK Government counterparts on this.

23. The Scottish Government is of the overall view that much of the detail on how the various proposals in the EMR would work and their interaction with the review of locational charging and the role of the regulator is still to be developed. Where relevant, this is highlighted in this response. The EMR proposals are also based heavily on modelling by Redpoint with minimal, if any corroborated evidence – there are risks associated with basing proposals for significant reform so heavily on one source, especially where there does not appear to have been a great deal of sensitivity analysis. The lack of consideration of regional impacts is of particular concern to the Scottish Government and officials will continue to liaise separately with the UK Government on this issue.

24. This response has been developed in consultation with industry and key parties; however, it does not specifically address the consultation questions individually, and not does it limit itself to the questions raised – there are a number of crucial areas in which reform are needed which are outwith the scope of this consultation, notably transmission charging.

Scottish Government objectives

25. The Scottish Government's Draft Electricity Generation Policy Statement 2010 highlighted above sets out our commitment "*To decarbonise Scotland's electricity generation sector by 2030, in line with the recommendations of the Committee on Climate Change.*"

26. This is consistent with the requirements for emissions reductions in the UK and Scottish Climate Change Acts. It is matched by commitments to:

- *ensure that Scotland continues to have a secure energy supply throughout the transition to low carbon energy; and*
- to *ensure that Scotland can maximise our economic benefit and competitive advantage from the development of low carbon energy resources such as CCS, offshore wind, marine energy, smart grids and offshore wind.*

27. These commitments align directly with two of the objectives set out in the consultation: security of supply and decarbonisation. The third objective in the consultation is affordability for consumers. It is important that EMR protects the interests of consumers, and ensures affordable electricity. This is particularly important in the context of potential future demand increases or changes in electricity use for transport and heating. In Scotland, there are particular issues where consumers use more energy due to the colder climate, and in the context of Scottish Ministers' commitment to eradicate fuel poverty, where possible, by 2016. Rising energy prices could have a disproportionate impact on those low income consumers – who are already consuming energy at the highest costs through mechanisms such as electricity card meters.

28. There are also significant constitutional issues. The Scottish Parliament recently passed a motion stating that the Scottish Parliament's existing powers with regard to renewables and CCS should, as a minimum, be left intact. The Scottish Government shares the consensus view of the Scottish Parliament that the proposals in the EMR must respect the devolved powers of the Scottish Parliament. The Scottish Government is working to

understand some of the potential impact of the EMR proposals and its relationship to current reserved and devolved powers in the UK and in Scotland.

The EMR proposals for decarbonisation

Carbon Price Support

29. The Scottish Government responded to the HM Treasury and HM Customs and Revenue consultation on Carbon Price Support (CPS) on 10th February 2011. A copy of that response is attached as an annex to this document.

30. The Scottish Government supports the principle of long term price certainty. In principle a CPS mechanism could strengthen price signals for renewable generators and drive action to reduce the level of emissions in the UK.

31. However, it is important that CPS acts with other proposals, to incentivise, rather than hinder development of CCS facilities, and that it does not result in premature closure of existing coal and gas plants before CCS is economically and technically proven. This requires partial and guaranteed relief from the CPS for coal and gas plant developing CCS demonstration facilities and partial CCS retrofit.

32. Similarly, it will be important to understand how partial and guaranteed relief would be applied for Combined Heat and Power (CHP). We oppose an unintended consequence of carbon pricing which would make CHP undeliverable because it does not take account of heat delivered and recycled from unabated coal plant.

33. It is crucial that revenue accrued will be applied for the purpose it is intended – i.e. support for low carbon transition. The UK Government must retain its commitment to funding additional CCS demonstrators 2-4. If there is any suggestion that the original provision for the CCS Levy in the Energy Act 2010 is no longer to be used to support CCS demonstration, then the CPS and proposed reforms to the Climate Change Levy must be capable of providing the necessary level of support.

34. Furthermore, since the CPS will work closely with the EU Emissions Trading System, which is a largely devolved issue – and given that CCS is also a largely devolved policy area – the design of the CPS must respect the devolution settlement, with a clear role for Scottish Ministers in the design and operation of the mechanism.

35. Clearly it will be important that an unintended consequence of the CPS is not to make GB generation or investment in future generation infrastructure uncompetitive relative to generation from outside the GB system. It must not simply result in cheap imports of carbon-generated energy from Europe – or investment capital looking for lower risk, higher return investment opportunities outside the UK. Given the lifespan of the EMR, we do not feel that it is appropriate to simply dismiss this issue due to the currently limited levels of GB-EU interconnection and this needs to be carefully looked at as do the competitiveness implications under the EU treaties.

36. There are a number of other areas where greater detail or further assurances are needed to be confident that the proposal would have the desired effect. The key issues are:

- the level at which such a tax will be applied;
- greater clarity on the anticipated balance of unabated peaking plant and CCS in operation – it is not clear if the intention is for CCS plant to operate at full load as baseload plant or if it could also operate as peaking plant alongside unabated peaking plant;
- assurances on the duration of any tax scheme to avoid possible arbitrary changes to the scheme by future administrations;
- understanding how any such tax will impact on investment planning for existing fossil fuel generating plant;
- that Scotland must also receive a fair and proper share of the tax revenue from any tax on fossil fuels to strengthen carbon price signals;
- HM Treasury track record disbursing funds due to Scotland back to Scotland – with no string attached - not an encouraging one – e.g. of Fossil Fuel Levy.

Feed-in tariffs/Contract-for-Difference

37. The existing Renewables Obligation in Scotland (ROS), made using powers which are devolved to Scottish Ministers, enables Scottish discretion to deliver support for areas where Scotland has particular renewable energy resources and technological strengths. The Scottish Government supports targeted levels of support for offshore wind. The Scottish Parliament has exercised its discretion to deliver levels of support for wave and tidal generation capable of attracting investment into these emerging technologies. The success and effectiveness of the ROS demonstrates that flexible, established and well understood support mechanisms can bring forward investment at a scale and speed needed to meet renewable energy policy aims and ambitions. The success and effectiveness of these support mechanisms has brought forward significant investment and development activity that is developing these technologies in a GB wide system, and is working towards delivering UK wide objectives of low carbon mix and security of supply.

38. The consultation proposes a "Feed-in-tariff with a contract for difference" to replace the Renewables Obligation (RO). The aim is to give long term price certainty for various forms of low carbon generation (not just renewable) to encourage investor confidence and make access to capital cheaper. The consultation further proposes retaining the principle of varying levels of support for different types of generation through feed-in-tariffs (FiT). The longevity of such feed in tariffs is not defined.

39. The Scottish Government supports the objective of long-term price certainty with a view to this facilitating the necessary investment in low carbon energy generation. The Scottish Government supports the effectiveness of differentiating levels of support to target specific types of renewable energy technologies, to recognise higher development costs and encourage technology specific and research and development based development of new and emerging technologies. The high penetration of a range of renewable technologies in an around Scotland, and the scale of development underway in Scotland is important in both the existing and future Scottish and UK low carbon generating mix.

40. However there are significant question marks about whether moving from the RO to a FiT system will achieve this objective. The Scottish Government notes and sympathises with the view, expressed by many stakeholders here and across the UK, that despite the repeated revisions to the RO it is effective, well understood and delivering significant progress

towards our targets; there is no compelling case for its replacement, indeed there is a serious risk that investment in renewables will be delayed or cancelled as a result.

41. If the balance or scale of tariff for particular types of generation (e.g. wave, tidal and offshore wind) gives sufficiently strong market signals, then a new mechanism *could* encourage and sustain meaningful capacity from those technologies. The proposal to make long-term price support available for CCS, for example, is particularly welcome. However, if the signal is not sufficiently strong, it could undermine the viability of particular renewable technologies and undermine investor confidence. It could also have a significant and potentially fundamental impact on supply chain development at a critical time in the development of the renewables and offshore supply chain in Scotland.

42. Two particular issues flow from the above. Firstly, the effect of moving to a feed-in tariff, of whatever design, must be considered carefully. Clearly, any new system must be at least as effective as the current framework of banded ROCs. In Scotland we support enhanced levels of support for offshore wind and these have delivered specific enhanced levels of support for wave and tidal capacity, with positive impacts on these industries and on job creation. The costs of targeting this support to develop new and emerging renewable technologies and sectors are met by all UK consumers. This reflects the significant industry development and business opportunity that targeted support accelerates.

43. In Scotland, ROS support has delivered both private investment and deployment on a scale that is helping – and will continue to help - deliver UK Renewable Energy targets. It also enhances competition in the electricity generation sector, and drives innovation and R&D in emerging technology that in the medium term will deliver a broad base of renewable technologies from different types of sustainable resources. It therefore helps to ensure that consumers across the UK will benefit from the higher concentration and more diverse range of renewable resources available in Scotland. It is the most efficient way for the UK to meet its renewable targets and in the event of a move to a new system, the principle that the costs and benefits of they system of the differential banding system are borne across all UK consumers must be maintained.

44. The second issue relates to Scottish discretion. The Scottish Parliament agreed on 13th January 2011 that the Scottish Parliament's existing powers with regard to renewables and CCS should, as a minimum, be left intact. The reform process has potential to dilute or remove Scottish discretion, and the important ability to deliver Scottish solutions to Scottish sector strengths and opportunities. Scottish Ministers must continue to have full control over, or a formal and meaningful role in the setting and establishment of, any new financial support mechanisms for renewables and CCS.

45. Clearly, the precise design of a FiT is crucial. While a CfD approach has its attractions, it could present particular difficulties for intermittent low-carbon technologies, which may find it more challenging to achieve the average wholesale electricity price. Not only is their power likely to be less attractive to the market, but intermittent generators (e.g. wind) also have limited ability to capture peak prices. Such prices may, of course, actually be caused by low wind. As noted by many in the industry, these difficulties are likely to be still greater for independent generators. All of this leaves aside the difficulty of setting the strike price, and of calculating a robust average wholesale price.

46. It can be argued that the ROC system gives developers a degree of certainty and guarantees on income and revenue levels of a development at commissioning stage, and at an early stage in the development planning phase. This helps developers make informed decision about future project viability. It can be argued that a CfD approach, where the level of CfD is for negotiation with a central body or counterparty at a later, and as yet unspecified stage in the development process, removes that element of certainty for developers. It can be argued that this is an enduring aspect of the CfD approach, rather than a transitional issue. It can also be argued that this additional layer of developer uncertainty could make access to capital more expensive than under a ROC based system.

Transition

47. There is also a risk, acknowledged in the consultation document that– even if justified on the basis of a straight comparison – transition from one scheme to another could lead to an investment hiatus which could hinder the move to a low carbon renewable future. The current levels of support for onshore and offshore wind, and especially for wave and tidal energy in Scottish waters is widely supported in the industry. The views we have taken from industry suggest that its primary wish is to have a stable and predictable regulatory and support framework.

48. The Scottish Government is particularly concerned about the potential impact on emerging technologies and supply chain developments at a point where critical investment decisions are being taken – there is a serious risk of investment being diverted from these areas to support more proven technologies which may be less risky, but which lack the strategic potential and value of our marine renewables resource.

49. If change is to be made, it must be with "no detriment" for renewables in Scotland and with investor confidence maintained, in particular for smaller and new market entrants. The EMR must carefully consider how to retain investor and market confidence during any transition away from the existing ROC system towards any feed in tariff system. There is some recognition of this in the EMR paper.

50. The consultation raises the option of parallel running of support systems over a period of time to avoid undermining investor confidence and creating a renewable energy development hiatus. Consideration must be given to the possible complexities arising from parallel running of support mechanisms including any delay in adoption, as well as the effect that the manner of vintaging could have on the value of ROCs. Clearly removing the obligation element from the support mechanism (thereby making the decision to opt for a CfD/FiT scheme a commercial one, rather than the element of compulsion from the ROC system) may impact on industry behaviour.

Support for CCS

51. The proposal that CCS receives long-term financial support is welcome. However, greater clarity if needed on how the CfD/FiT mechanism will work for CCS – again, the expected role of CCS plant, and assumptions about likely load factors are important. The Scottish Government's Draft Electricity Generation Policy Statement shows that Scotland can achieve its 80% renewables target with 2.5 GW of thermal plant progressively fitted with CCS. This assumes that CCS operates as baseload plant with a high load factor.

52. We would expect the CfD/FiT mechanism to be designed so that CCS plant can be incentivised once it is economically and technically proven (expected by 2020). For the demonstration period, the UK Government needs to clarify whether or not the CfD/FiT mechanism will be available to pay for the CCS demonstration programme (2-4) and if not what financial support will be made available. In addition, there needs to be clarity that once CCS has been demonstrated on a particular plant, that remaining unabated parts of that plant will be eligible for the CfD/FiT mechanism to retrofit. Given the high sunk capital investment in CCS plant, EMR mechanisms which ensure the most efficient return on this investment by ensuring optimum load levels, could avoid the need for unnecessarily high CfD/FiT support. There is a risk that if the CfD/FiT mechanism is not set correctly, that CCS could end up, perversely, being disincentivised, if the load factors cannot be optimised – undermining the economics of investment. The Scottish Government would be very concerned if this was the outcome.

Support for nuclear generation

53. The EMR proposals would deliver a FiT for nuclear generation. In Scotland we have a clear framework to ensure 80% of our electricity demand can be met by renewables by 2020, backed up by 2.5 GW of thermal plant progressively fitted with CCS. The Scottish Government draft Electricity Generation Statement[6] gives the clear evidence for this. It is important that support for nuclear generation does not divert investment from alternative and renewable energy sources.

Auctioning

54. There is significant scepticism in the industry about the appropriateness of auctioning to determine the price(s) for a FiT. This is based partly on previous use of auctions which, in some instances, has led to low bidding and projects not delivered. Including some sort of penalty for non-delivery could help to avoid this but would also deter bidding.

55. There may be particular difficulties in the case of nuclear (where available sites have been identified by Government and are already owned by utilities) and offshore wind (where sites have been awarded). It is difficult to see how the risk of investment hiatus or stranded capacity can be avoided. There may also be particular difficulties where technologies are less mature, and it seems likely that auctioning could deter new entrants.

56. Further concern has been expressed that auctioning may fail to recognise the different financing, operational and investment characteristics of different technologies – for example CCS costs will be technology and location-specific and this could result in complications in a technology or project-neutral auction process. Given all of this, any decision to make use of auctioning should follow clear consideration of what the risks of such an approach would be, and how they might be mitigated.

57. In summary, the key issues are:

- the EMR proposals for long term financial support for carbon capture and storage are welcome;

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[6] http://www.scotland.gov.uk/Publications/2010/11/17094217/0

- introducing a radically different support framework risks an investment hiatus in the industry with any deployment hiatus likely to lead to a significant risk to the further development of associated up and downstream industries;
- the proposals would deliver a feed in tariff for nuclear. This could divert investment from alternative and renewable energy sources;
- there is a risk to Scottish Government's targeted support for the wave and tidal sectors, where the premium arrangements reflect the evidenced decision by Scottish Ministers to support these specific sectors – although there appears to be increasing UK Ministerial support for enhanced support for these technologies;
- the scale of longevity of such feed in tariffs is not known, nor their longevity, nor how the CfD element (*"the strike price"*) might be set;
- the balance or scale of tariff for particular types of generation (e.g. wave, tidal and offshore wind) must give sufficiently strong market signals to attract investment in these renewable technologies;
- any new system must be at least as effective as the current framework of banded ROCs, with levels of support for all renewables capable of delivering capacity and new industries and jobs;
- the current system ensures that the costs of any differential banding are borne across all UK consumers. That principle must be maintained in any new CfD/FIT system;
- there are significant industry concerns about the appropriateness of auctioning to determine the FiT price.

Emissions Performance Standard (EPS)

58. The EMR proposals suggest an EPS will work in parallel – and as a back stop – to the existing environmental planning requirement. The environmental requirements of new power stations are a devolved matter, and the Scottish Government has put in place a requirement that any new coal station would require to be fitted with 300MW of CCS capability from commissioning, moving to full CCS capability over time.

59. The Scottish Government believes that an EPS must ultimately work alongside the other EMR mechanisms to drive overall emissions from electricity generation down towards the Committee on Climate Change's recommendation of a decarbonised power sector by 2030. An EPS must therefore also work with the other EMR mechanisms to incentivise investment in CCS to reduce emissions from both coal and gas plant although we must careful not to be overly burdensome and penalise technology pathfinders. That is why it is essential that clear, long term price support is given to CCS that is also consistent with decarbonisation of both coal and gas by 2030.

60. Since control of emissions is a devolved matter, alongside consenting of electricity generating power stations, the Scottish Government must be closely involved in the design of an EPS to ensure it delivers our 2030 decarbonisation objective, and incentivises higher levels of CCS in Scotland (since we do not support nuclear power), backed by clear long term price support.

61. The design of the EPS must respect the devolution settlement, with a clear role for Scottish Ministers as necessary in the design and operation of the mechanism. It must recognise that the Scottish Environmental Protection Agency is the relevant agency for delivering an EPS in Scotland. This needs to be reflected in any EPS proposals.

62. In summary, the key issues are:

- considering whether the EPS be market-wide and also reduce emissions from gas generation as well as coal. This could ensure levels of emissions reduction necessary to meet the 2030 target and remain within our carbon budgets, but also give regulatory certainty to incentivise investment in CCS across the thermal generation sector;
- must work with the other parts of EMR to incentivise CCS;
- Scottish Ministers have powers in both CCS and for emission control. Need to ensure any EPS design is appropriate for Scotland and enables us to meet our 2030 decarbonisation objective;
- must recognise and incentivise higher levels of renewables penetration and CCS in Scotland.

Options for Market Efficiency and Security of Supply

Capacity Payments

63. The proposal to introduce a market for electricity capacity, with specific payments to electricity generators, is welcome in principle, as it can help ensure security of supply while making the transition to a low carbon generating mix. However it is unclear at which power sources, and where, capacity payments will be directed to balance intermittency from renewables, and at what level such payments will be set, for what timescale and for what purpose (e.g. short term payments for strategic reserve, flexible plant for interim supply, or for long term capacity for more extreme intermittency and demand levels). Again, greater clarity is particularly needed on the expected load factors and relative balance of unabated peaking plant and CCS plant in operation. It can be argued that further capacity payments should not be restricted to existing plant but also be inclusive of storage options including demand side management, smart grids and batteries.

64. In addition, the consultation understates the importance of capacity balancing at sub-national level and in particular within Scotland. Given constraints on the Scotland-England interconnector, and the growth of intermittent wind in Scotland, there may be a need for specific support for types of capacity at regional level. Any thinking on a locational element for capacity payments must avoid the current unfair, and increasingly untenable, locational approach to transmission charging which sees renewable energy in the best areas of resources subject the highest charges for use of the grid system.

65. In summary, the key issues are:

- the consultation understates the importance of capacity balancing at sub-national level and in particular within the Scottish area. Given constraints on Scotland-England interconnector, and the growth of intermittent wind in Scotland, there may be a need for specific support for types of capacity at regional level;
- how and where any payment would be targeted (at minimum) and from which power sources to balance intermittency from renewables;
- any thinking on a locational element for capacity payments must not replicate the current locational approach to transmission charging.

A Central Agency and the role of Ofgem

66. The EMR proposals indicate that a central body will become responsible for the administration and application of any FIT/CfD floor prices or strike prices and monitoring ongoing operation of the electricity market.

67. As discussed in the opening section of this paper, both the energy market and the energy sector have changed fundamentally since privatisation of the gas and electricity markets. The characteristics, focus and nature of the energy sector and the policy context within which the energy sector now operates both today and will operate in the future – have fundamentally changed. Also as highlighted in the opening section, the Scottish Government believes the regulatory framework and powers have not kept pace with these changes.

68. We therefore welcomed the review of the roles and responsibilities of Ofgem announced by DECC on 2nd July 2010. In responding to UK Ministers on the review of Ofgem we argued strongly that regulation of the energy market must facilitate the low carbon transition while also protecting the interests of consumers. We have argued that Ofgem must be an enabler of the change to a low carbon energy future, rather than a barrier to change.

69. This same principle must apply to any central body responsible for FIT/CfD under the EMR proposals. Any such central body must work with Governments to be an enabler of the policy purpose of delivering a low carbon generating mix, including a significant amount of renewable energy from Scotland. It will be important to understand how any central body or counterparty will work with the long direction of the policy of Governments, and its relationship with the electricity sector. It will be important to consider how such a body is compliant with the principles of independence and transparency, and compliant with competition and accountability mechanisms at UK and EU level.

70. In the review of Ofgem we argued that Ofgem needs to be more accountable to Governments for the practical and policy implications of the regulatory approaches it develops and applies. This principle of accountability to Governments must also be the case for any central body that emerges from EMR.

71. We also argued that Ofgem as a GB wide regulator and must appropriately reflect specific needs and opportunities in parts of the network. We continue to believe that Ofgem must have appropriate and effective representation of Scottish interests in systems for influencing and developing market regulation. This must also be the case in respect of any central body for FIT/CFD under EMR.

72. It will also be important to consider the role and relationship between any new central agency or counterparty and Ofgem. The aim should be to clarify regulatory and market roles and responsibilities, rather than duplicate or further complicated regulatory responsibilities.

73. These are important issues – the "institutional capability" to deliver these new tasks is key. Views on the theory behind these developments will be heavily influenced by how they will be put in practice, and by whom. The design of this body and the review of Ofgem is central to how the overall package will operate. It will be vital that any such Central Agency should emphasise the need for accountability of any agency to both the UK Parliament and the Scottish Parliament. The Scottish Government must be fully involved in the development of proposals in these areas.

74. These issues again highlight why the EMR process cannot be considered in isolation from the other strands of reform underway in the Review of Ofgem and Project TrasmiT. Any central body could play a crucial role but there is a lack of clarity about its structure and operation. In particular:

- It is not known who the central body will be.
- It is not known what role or input the Scottish Government will have on this body.
- It is not clear whether this would be a central buying agency.
- It is not clear how long will any strike price be set for or at what level.

Transmission Charging

75. The other main strand of reform which is fundamentally linked to the EMR process is the review of transmission charging in Project TrasmiT. The EMR consultation paper is also almost silent on transmission charging. The Scottish Government believe the key problem which is holding back renewable developments in Scotland is less about risk in the generation market, but more a concern about the availability of transmission connections at fair prices for new generation. The locational transmission charging regime, and the failure to reform the regulatory framework, are inter-related issues to the proposals for market operation and support mechanisms, structures and powers. They cannot – and must not - be considered in isolation and the impact of the wider regulatory, market and economic impacts of charging, support and market performance must be considered in a wider and more holistic context than envisaged by the EMR proposals.

76. In the Project TranmsiT process, a range of conflicting arguments have been put forward, ranging from the proponents of locational charging arguing that extreme locational charging approach should be maintained, to arguments for change to the scale of the variances in the existing locational bandings to smooth our or lessen the scale of the differences generators in parts of the GB system work. There are arguments that support for specific types of generation should be framed in the context of strands of the EMR, rather than in charging mechanisms. There are arguments that both charging and support mechanisms should be coherent and aligned to meet the overarching aims of low carbon generation, security of supply and protecting the interests of consumers. The outcomes of both the EMR and Project TransmiT are closely interrelated. They must not be considered in isolation.

The Role of Interconnection

78. The consultation does not fully account for the role of interconnection. Interconnection provides a two-way electricity flow which in an integrated market is essential to allow trading to take place on a market basis, as well as to strengthen security of supply. Scotland has been a substantial net exporter of electricity for many years and has strong interest in developing interconnection to other parts of the GB network and to Europe. The Scottish Government is concerned at this lack of focus on interconnection at a time when the EU's Third Package for the internal market is encouraging national regulators to ensure better interconnection and calls for a clear approach for infrastructure and European integration.

79. It will be important that an unintended consequence of the EMR proposals in an increasingly more interconnected GB and EU market is not to make GB generation or

investment in future generation infrastructure uncompetitive relative to generation from outside the GB system. While the GB is currently insulated to some extent from EU competition by the relatively low levels of interconnection, this will not be the case throughout the period covered by the EMR. In considering the wider impacts of the EMR proposals, consideration must be given to the balance between the GB system seeking to lead the way in low carbon development and how that will impact on market behaviour in an increasingly interconnected, open and competitive and EU compliant energy market.

Effect on European markets

80. Taxing UK carbon-based generators and introducing an EPS could make UK based generation more expensive relative to generation in other EU Member States, and could risk cheap imports of high carbon-generated energy from Europe. In a competitive and global investment market, it could lead investment capital to look for lower risk, higher return investment opportunities in energy markets outside the UK. This would be a perverse outcome for European-wide efforts to reduce emissions. Clearly, this risk needs to be explored, and if necessary actions taken to mitigate it.

81. It is also not clear what the effect of the proposals would be on the operation of the EU Emissions Trading Scheme at an EU-wide level. Again, stronger unilateral efforts to reduce emissions in the UK could have the unintended consequence of leaving surplus emissions credits available on the EU market, suppressing the EU carbon price and slowing emissions reductions elsewhere in the EU. Far greater clarity is needed on the effect of the EMR proposals on the ETS and what measures can be taken at EU level to mitigate against the unintended consequences.

Regional Flexibility

82. Under the current ROC system, Scotland has flexibility to determine its own banding levels, and the costs of the ROC system (which fall on licensed electricity suppliers) are socialised across the UK. ROC bandings across the UK are currently set at the same level with the exception of wave and tidal technologies. These are emerging technologies, where the level of capacity and thus cost is accordingly very low at the present time. This means that the costs associated with applying different bandings are minimal across all UK consumers.[7]

83. The Scottish Government believes, along with all those involved or investing in the marine renewables sector, that the current ROC levels outwith Scotland are set at a level which will not incentivise and support investment in these technologies. It is vital that targeted support for generation from emerging technologies is maintained, and the costs socialised across the UK. A technology specific, UK wide approach to setting support levels for particular technologies under a new system could provide a robust alternative to the current regional flexibility – but there would be ramifications for the existing powers of the Scottish Parliament which need careful consideration. There would need to be a genuine and meaningful role for Scottish Ministers in agreeing future support mechanisms, and in setting support levels for specific technologies. This could potentially be a legislative role in agreeing technology banding or FIT levels with UK Ministers.

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[7] The latest OFGEM Renewable Obligation Annual Report, reports 18,996,453 ROC certificates issued to accredited generating plant across the UK, including 6,699,848 SROCs. Wave powered generation issued with 44 SROCs in this period.

Large scale biomass

84. The Scottish Government favours biomass deployed in heat-only or CHP schemes, off gas-grid, at a scale appropriate to make best use of both the available heat, and of local supply, rather than large-scale biomass electricity generation or a number of reasons:

- Evidence suggests that the use of biomass for heat-only or CHP use will be essential to meet Scotland's target for renewable heat;
- Use of available heat in heat-only and CHP schemes achieves 80-90% energy efficiency for the former and 50-70% for the latter as opposed to 30% in electricity-only schemes. With a limited resource, maximum efficiency needs to be encouraged;
- The use of biomass first and foremost off the gas-grid ensures the highest carbon savings (given that in most cases it will be displacing oil or coal), and can also make the greatest impact on alleviating fuel poverty;
- It is likely that the larger the proposed scale, the more difficult it will be for the developer to utilise the heat generated and to source supply locally. Hence any development should be scaled appropriately to make efficient use of the available heat and local supply. Large scale developments which do not maximise heat use may also displace supply from our priority of delivering our heat target.

85. While Scottish Minister's continue to have final determination on individual application, introducing support mechanisms that deliver a feed in tariff for large scale biomass could accelerate applications for biomass electricity-only development which could have unintended consequences for Scottish Government policies on biomass, as could removing the scope for regional flexibility in support for renewables.

86. The Scottish Government is committed to reviewing support for biomass, including considering removal of large-scale biomass electricity from the ROS (consultation later this year). This review will be informed by the findings of the Woodfuel Taskforce (due shortly) and also by the evidence gathered by DECC in their development of a UK Bioenergy Strategy (due to be published in July).

87. It is unclear how the emerging findings from DECC's work will be fed into the EMR and the RO Banding Review, and indeed, whether there a willingness to change UK policy should the evidence - on global demand pressures and impact on other sectors – suggest the need.

Opportunity to bring Demand into the Market

88. At present, the energy market operates through bilateral contracts between supply and demand counterparties (generators and suppliers) with a secondary market to provide particular balancing services. Generators have vested interest in being able to sell their output, and the market currently operates such that there is a mix of baseload, mid-merit and peaking plant.

89. In the EMR proposals, capacity payments are proposed as a possible route of providing investment signals that will support new build of generation – where they meet as yet unspecified capacity criteria, stimulating not only investment in development of new

capacity, but also specific technologies. However, it can be argued that capacity payments are all focused on generation technologies.

90. The EMR is an opportunity to bring demand into the market. This could specify technologies eligible for capacity payments or specify storage technologies (batteries, hydrogen etc) or demand side participation (DSP; smart grids, energy efficiency – which can offer load management). Rather than turning down generation where there is excess, storage could fill the gap and recharge/regenerate. If there is intermittent or surplus wind generation, storage can provide a degree of backup. Further consideration would need to be given to explore the loss of load probability and the appropriate generation capacity and storage/DSP mix but it would open up the market to the demand/storage community that would see a commercial incentive to invest and deliver based on a known capacity payment, rather than working one-step removed with the consumer – and constrained by the pricing after the meter.

91. Energy efficiency is an enormous opportunity that we are failing to tackle effectively, and that the EMR proposals do not consider. Changing market rules to incorporate the supply side could incentivise market delivery where it sees the most opportunity and it can be paid for doing so. In this case, it may not be electricity suppliers that be active in the market – it could be the utilities themselves, but also may extend to technology developers/suppliers, Local Authorities or communities, encouraging innovation and delivery at a pace that could have a far greater impact than previously considered. This thinking should be explored further.

Energy Markets Unit
Scottish Government
10th March 2011

ANNEX A

SCOTTISH GOVERNMENT RESPONSE TO CONSULTATION ON CARBON PRICE SUPPORT

Energy and Climate Change
Directorate
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Martin Shaw
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February 2011

Dear Mr Shaw,

Carbon price support

1. I am writing to set out the initial Scottish Government view on the HM Treasury and HM Revenue and Customs consultation document Carbon Price Support.

2. Scotland has some of the best energy resources in Europe with as much as a quarter of Europe's offshore wind and tidal energy resource and an estimated 10% of its capacity for wave power. A major UK Offshore Valuation Study published in partnership with industry and Government colleagues in May 2010 estimated Scotland's practical offshore renewables resource at 206 GW (almost 40% of the overall UK total).

3. In Scotland we have 7 GW of renewable energy capacity installed, under construction or consented. We are on track to hit our Scottish Government target of 31% of electricity consumed in Scotland provided by renewable energy by 2011, and we are confident of delivering 80% by 2020. In the North Sea, Scotland has the largest potential offshore CO_2 storage hub in the European Union. Our Draft Electricity Generation Policy Statement, published in November last year, therefore sets the evidence base for low carbon electricity in Scotland to meet the 80% renewables target, backed up by a minimum of 2.5 GW from new or upgraded thermal plant, progressively fitted with carbon capture and storage by 2030 – and integrating energy efficiency and reducing overall energy demand. It is clear that renewable energy from Scotland will play the crucial role in helping the UK progress towards meeting its renewable energy target and delivering our low carbon renewable energy future.

4. The nature of the UK and EU energy balance, the reliance at UK and European level on imports of energy and the requirement to decarbonise energy provides opportunities for Scotland. The EU North Sea Grid Co-ordinator, Georg Adamowitsch in this 3rd annual report highlights the challenges for a EU wide integrated offshore gird network connection, and highlights renewable energy from Scotland as a resource of EU significance:

> *"Scotland is a fine example of how different offshore technologies (wind parks, wave and tidal technology, onshore potentials, various wind potentials) can be combined to form a coherent approach. To be able to use all these elements as part of a European sustainable energy policy, these Scottish renewables have to be connected to an integrated European grid."*

5. The Scottish Government vision is for Scotland to play its part in developing onshore and offshore grid connections to the rest of the UK and to European partners – to put in place the key building blocks to export energy from Scotland to national electricity grids in the UK and Europe. We are therefore working closely with our UK and EU counterparts, with Ofgem, National Grid and Scottish Transmission System Operators to ensure energy from Scotland plays its part in meeting renewable energy, carbon reduction and climate change targets set by Governments at Scottish and UK level and by the EU.

6. The Scottish Government believes that a carbon price support mechanism could strengthen low carbon price signals for renewable generators. It could also drive action to reduce the level of UK source emissions meaning that UK generators need to purchase fewer EU Emissions Trading System Allowances. The key will be to ensure that market signals for renewables are strong enough and that any carbon price support mechanism is coherent with the other strands of reform proposals set out in DECC's Electricity Market Reform (EMR) consultation published in December 2010 for feed in tariffs, an Emissions Performance Standard and possible capacity payments.

7. We are working with DECC colleagues on the EMR consultation. We are also working closely on the other major strands of regulatory reform that are currently live – namely the DECC-led review of the roles and functions of Ofgem and review transmission charging (Project Transmit) by Ofgem and looking at the long standing issue of locational charging.

8. The issue of a carbon price support mechanism is inextricably linked to this wider suite of reforms. The lack of specificity at this stage in the EMR consultation (including on carbon price support) makes it difficult to consider exactly how a carbon price support mechanism would work in practice.

9. I will therefore limit my response to a number of areas of principle and we will provide a more detailed and holistic response to the EMR consultation in due course.

A clear price support mechanism for carbon

10. We welcome the principle of delivering support and certainty for low-carbon electricity investment and encouraging investment in low-carbon electricity generation through a clear and transparent price mechanism. Delivering the right GB electricity market, with the right regulatory framework and a clear carbon price support mechanism, are the key

to maximising Scotland's energy potential, with the right support mechanisms for renewables and Carbon Capture and Storage.

11. In principle, the Scottish Government supports long term price certainty in the context of a regulatory framework in the UK market that facilitates, rather than acts as a barrier to low carbon energy in the areas of highest resource. The level at which any carbon tax is set will be crucial.

12. It will be important to ensure that revenue accrued from a carbon price support mechanism is applied for the purpose it is intended – i.e. to support for low carbon transition. It will also be important that assurances are given on the longevity or duration of any such taxation scheme, to avoid possible arbitrary changes to the scheme by future administrations that could undermine its effectiveness or impact on sector confidence.

13. The transition to any carbon price support mechanism will be crucial. It will be important to assess and fully understand how any such tax will impact on investment planning for existing fossil fuel generating plant. We would be concerned if an unintended consequence were to accelerate closure of existing plant, without proper regard to implications for security of electricity supplies.

Implications for Combined Heat and Power plant and for Carbon Capture and Storage

14. For us, it will be particularly important to understand and mitigate any potential implications for Combined Heat and Power plant and for Carbon Capture and Storage development and deployment. Unless provision in made in any carbon price support mechanisms to take account of heat delivered and recycled from unabated coal plant, carbon pricing could make CHP undeliverable.

15. It will also be important to ensure partial and guaranteed relief from a proposed carbon price support levy for coal and gas plant developing CCS demonstration facilities and partial CCS retrofit. The mechanism also needs to be designed to complement the proposed capacity payment for non-CCS fitted peaking plant. It is unclear at present how such plants will be treated under the EMR proposals.

Revenue distribution

16. It will be imperative for Scotland to receive a fair and proper share of taxation revenue from any tax on fossil fuels to strengthen carbon price signals. As you will be aware Scottish Government Ministers have longstanding and deeply held views about HM Treasury willingness to disburse funds to Scotland. Scottish Ministers continue to argue for Fossil Fuel Levy funds to be made immediately available to Scotland, and in full, to accelerate renewables development in Scotland.

17. The implementation mechanism for a carbon price support mechanism is unclear. The DECC Electricity Market Reform (EMR) feed in tariff/contact for difference proposals could introduce an additional administrative and regulatory body. It is not clear how such a body would operate, particularly in terms of factors such as the redistribution of revenues from electricity prices and/or carbon price support tax. Clarity on the detail and remit of any central body or alternative mechanisms for redistribution of carbon price support funds is necessary. The Scottish Government would expect to be included in the consideration of the

remit for any central body to ensure all revenues are distributed in a way that does not discriminate against Scotland or Scottish consumers, and in a manner that is consistent with our powers under the devolution settlement.

Unintended consequences

18. There is the possibility that the EMR may be used by the UK to demonstrate EU-wide leadership. But taxing UK carbon based generators and over selling of Emissions Performance Standards permits could make UK based generation more expensive relative to generation in other EU Member States. An unintended consequence of a carbon price support mechanism could be to risk cheap imports of carbon generated energy from Europe. In a competitive and global investment market, it could lead investment capital to look for lower risk, higher return investment opportunities in energy markets outside the UK. This would need to be carefully considered, as will the competitiveness implications under the EU treaties.

Leadership in its climate change objectives - EU Emissions Trading Scheme

19. On climate change, the Scottish Government is committed to playing a leading role in global actions to reduce emissions, both capturing the economic benefits of the move to a low carbon economy, and helping to avoid dangerous climate change. We therefore recognise and strongly support the move to low carbon generation in the UK (although we do not see a need to include nuclear power in the long term future generating mix in Scotland).

20. The Scottish and UK Government share a common position on the need for the EU to show international leadership in its climate change objectives, and a willingness to work together to get the messages over to our key contacts in a coordinated way. Getting the EU to move to a 30% target for emissions reductions, and tightening the EU Emissions Trading Scheme (ETS) cap accordingly would show that leadership, and aid Scotland and the UK in achieving our climate change objectives.

21. We support the principles and mechanisms of the EU ETS and see it as a keystone in incentivising the move to low carbon generation. Using the ETS would have the advantage of avoiding any competition issues within the EU. The limits placed on EU ETS allowances should be commensurate with a temperature rise of no more than 2° Celsius (issuing fewer allowances at EU level could avoid the need to introduce a further specific UK generation 'tax').

22. Like the UK Government the Scottish Government remains committed to supporting a move in the EU to adopt a 30% emission reduction target. This will demonstrate leadership in the effort to limit the global temperature rise.

23. That said, we recognise that the circumstances faced by the UK and the need to provide greater certainty for a smooth transition of the UK power sector to a low carbon base, and further that this need extends out beyond the current limits of the ETS timetable. Acknowledging current EU ETS prices, should the UK see the need to impose additional generating levies to provide greater certainty to stimulate investment in low carbon generation we are clear that these incentives should not unfairly favour one generation type over another – i.e. nuclear.

24. And finally, any impact from such measures on the ETS, as a largely devolved matter, should be discussed between Whitehall and Scottish Government officials, commensurate with the Protocol we have agreed with Treasury and DECC.

25. I trust these comments are helpful. I would be happy to discuss them in more detail if this would assist. We will be providing a more detailed response to the DECC EMR consultation in due course.