

# RENEWABLES OBLIGATION (SCOTLAND)

## INTRODUCTION OF BANDING

## STATUTORY CONSULTATION

SEPTEMBER 2008

### Background

i) The Renewables Obligation (Scotland), or ROS, came into force on 1 April 2002, and is the key means through which the Scottish Government is pursuing its renewable energy objectives. It operates by obliging electricity suppliers to ensure that a specified proportion of any electricity which they supply to customers in Scotland comes from eligible renewable resources.

ii) The ROS works alongside almost identical Obligations (although see paragraph iii below) covering suppliers in England and Wales, and in Northern Ireland, all of which act to create a UK market for renewable electricity and ROCs. The Scottish Government works closely with colleagues in the Department of Business, Enterprise and Regulatory Reform (BERR) and the Department of Enterprise, Trade and Investment in Northern Ireland (DETINI) on matters relating to the UK Obligations.

iii) Since this legislation was first introduced, we have conducted a number of consultative reviews with stakeholders examining the ways in which the ROS is structured and the effectiveness of its performance. In the main, these reviews have led to a series of relatively minor amendments to the ROS.

iv) This document deals with the introduction of banding to the ROS. **The powers to deliver a banded ROS depend on a number of changes being made to the primary legislation.** A draft Energy Bill delivering new powers in these areas is currently before the UK Parliament; should that Bill receive Royal Assent, then these amended powers will be transferred to Scottish Ministers using an Order under the Scotland Act.

v) In April this year, we published a preliminary consultation which set out the Scottish Government's intention to introduce banding to the ROS. We also sought views on areas where the ROS might differ potentially from the Obligations in place elsewhere in the United Kingdom – chiefly in terms of support for wave and tidal

power in Scotland, although we also asked for views upon and any evidence supporting a different approach with regard to energy from waste and island wind generation. A summary of the responses received is available here / on our website.

vi) This statutory consultation sets out our final decisions and proposals following on from that preliminary exercise, based on the responses we received and upon the outcomes of the study conducted for us by SQW energy, which examined the effects of and case for change in a number of areas. That study is available [here](#). The statutory instrument and provisions which will deliver a banded RO are still being finalised – again, we will distribute a draft Order to consultees and stakeholders as soon as possible.

vii) As with previous consultations on the ROS, this paper focuses on areas where the Scottish Government is proposing to take (or has considered adopting) a different approach to that proposed by BERR and DETINI for the rest of the UK. **This means that, outwith the proposals contained within this consultation, the Scottish Government intends to introduce the same changes proposed within (and which emerge from) the statutory consultation document published by BERR in June 2008** (available [here](#)). However, the Scottish Government continues to seek feedback from consultees on these issues, and is willing to consider evidence which supports clearly any further difference of approach within Scotland.

viii) Responses to this consultation paper should be sent by **Friday 12th December** to the following address:

**Neal D Rafferty**

Renewables and Consents Policy Unit  
2nd Floor  
Meridian Court  
5 Cadogan Street  
GLASGOW  
G2 6AT

Telephone: 0141-242-5894

Email: [Neal.Rafferty@scotland.gsi.gov.uk](mailto:Neal.Rafferty@scotland.gsi.gov.uk)

ix) We recognise that there is a great deal of interest in these proposals, and a number of questions which recipients may wish to discuss with us directly. We plan to engage as fully and as openly as possible with all our stakeholders during this consultation period, and are happy to be approached directly at any time.

x) We would be grateful if you could indicate clearly in your response which questions or parts of the consultation paper you are responding to as this will aid our analysis of the responses received. This consultation, and all other Scottish Government consultation exercises, can be viewed online on the consultation web pages of the Scottish Government website at <http://www.scotland.gov.uk/consultations>. You can telephone Freephone 0800 77 1234 to find out where your nearest public internet access point is.

### Handling your response

xi) We need to know how you wish your response to be handled and, in particular, whether you are happy for your response to be made public. Please complete and return the [Respondent Information Form](#) as this will ensure that we treat your response appropriately. If you ask for your response not to be published we will regard it as confidential, and we will treat it accordingly.

xii) All respondents should be aware that the Scottish Government are subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under the Act for information relating to responses made to this consultation exercise.

### Next steps in the process

xiii) Where respondents have given permission for their response to be made public (see Annex A), these will be made available to the public in the Scottish Government Library and on the Scottish Government consultation web pages. We will check all responses where agreement to publish has been given for any potentially defamatory material before logging them in the library or placing them on the website. You can make arrangements to view responses by contacting the SG Library on 0131 244 4565. Responses can be copied and sent to you, but a charge may be made for this service.

### What happens next?

xiv) Following the closing date, all responses will be analysed and considered along with any other available evidence to help us reach a final position on the proposal identified within this paper. This will lead to the laying of an amended ROS before the Scottish Parliament early in 2009, with the intention that a banded Order come into force on 1 April 2009.

### State Aid Position

xv) In accordance with State aid rules, the current UK renewables obligation scheme was notified to the European Commission in July 2000 for its approval. A State Aid is defined under Article 87(1) of the EC Treaty as any public resource given selectively to an undertaking that could potentially affect competition and intra-community trade.

xvi) The Commission considered that the redistribution of buy-out funds to electricity suppliers, as under the Obligations at present, constituted State aid to electricity producers and potentially also to electricity suppliers. However, as the scheme met the criteria for green certificate schemes set out in the Commission's environmental guidelines, it was approved: **United Kingdom Renewables Obligation and Capital Grants for Renewable Technologies - N504/2000**. A number of amendments have since been made to the scheme, all of which have been notified to and approved by the Commission.

xvii) The proposals set out in this document, plus the related and wider changes proposed in BERR's statutory consultation, are likely to require the approval of the Commission. **We are taking steps to ensure that the Commission has the information that it needs to make such a decision.**

#### **Comments and complaints**

xviii) If you have any comments about how this consultation exercise has been conducted, please direct them to us using the contact details at paragraph viii).

## SECTION 1

### INTRODUCTION / BACKGROUND

1.1 Scotland's potential for the production of electricity from renewable sources is huge. [Earlier studies](#) have quantified this potential at around 60 GW, which is several times the peak domestic demand for power. Alongside existing, established hydro generating capacity, the main areas of potential are in onshore and offshore wind, wave and tidal power, plus (to a lesser extent) biomass and energy from waste.

1.2 The Scottish Government is committed to promoting as wide a range as possible of renewable energy sources. Ministers announced last year the adoption of a new target - 50% of electricity generated in Scotland (as a proportion of whole demand) to come from renewable sources by 2020, with an interim target of 31% by 2011. As well as reducing emissions and thus helping to mitigate climate change, increased generation from renewable sources to meet demand both at home and abroad could lead to significant economic benefits for Scotland - particularly if emerging technologies like wave and tidal can be successfully developed.

1.3 In 2006, Scotland generated around 16% of the electricity required to meet whole domestic demand from renewable sources. Our initial estimate is that around 8 GW of installed renewables capacity will be necessary to meet the 2020 target (the figure currently stands at around 2.6 GW). While we expect that much of the additional capacity will come from onshore and offshore wind, Ministers are determined to provide sufficient support to wave, tidal and biomass to enable them to make as large a contribution as possible.

#### **The Renewables Obligation (Scotland)**

1.4 The ROS was first introduced in 2002, alongside an equivalent and identical Order covering England and Wales, and is the main policy instrument for promoting renewables in Scotland. There is no question that the ROS has been instrumental in pushing up installed capacity and output from renewables in Scotland during the past few years, and that it will be equally fundamental in moving Scotland towards the ambitious target that Ministers have set for 2020.

1.5 The ROS has been subject to review several times since its introduction. In the main, the resulting changes have been limited in scope and effect, often technical in nature and not amounting to any fundamental change to the way in which the Obligation works. More importantly, the ROS has always remained virtually identical to the Obligation covering England and Wales (and more recently, the Obligation covering Northern Ireland).

1.6 This changed with the introduction to the ROS in April 2007 of a Marine Supply Obligation (MSO). The result of [detailed consultation](#), and brought into force with the consent of the Scottish Parliament and European Commission, the MSO was introduced to provide the required level of support for wave and tidal generation located in Scottish waters.

1.7 It does so by requiring suppliers to meet a fixed proportion of their Obligation by securing energy from wave and tidal devices or by paying a suitably higher buy-out price (set at £105/MWh for tidal and £175/MWh for wave). In the event, and in line with our commitment not to activate the measure unless there was eligible capacity available which would enable suppliers to meet it, the MSO is currently set at zero.

### **Preliminary Consultation**

1.8 Our preliminary consultation earlier this year established the Scottish Government's agreement with the principle of banding, and established Ministers' support for its introduction across all UK Obligations. However, and while recognising the importance placed by many stakeholders upon maintaining consistency between the UK Obligations, the paper pointed to the current divergence embodied by the MSO, and to the existence of executive devolved powers from which the MSO is derived.

1.9 These powers enable Scottish Ministers to take a different approach where they feel that that is justified and where the evidence supports such an approach. Building on this principle, the Scottish Government asked for views in relation to three specific areas:

- **Support for wave and tidal power in Scotland under a banded RO;**
- **Eligibility of Energy from Waste (EfW); and**
- **Support for island wind energy.**

Our proposals elicited a strong and welcome response from consultees (see the summary at section 7), which, in tandem with the results of SQW's study and further discussion with a range of stakeholders, has led to the decisions and proposals set out in the following sections.

## SECTION 2

### SUPPORT FOR WAVE AND TIDAL POWER UNDER A BANDED ROS

2.1 Our preliminary consultation reiterated the potential strategic, economic and environmental value and importance of wave and tidal power to Scotland – as well as to the rest of the UK. It summarised the genesis and reasons behind the introduction of the MSO in 2007, a mechanism which has led already to the advancement of plans for investment in small scale wave and tidal development in Scottish waters.

2.2 The Scottish Government proposed that the MSO be discontinued upon the introduction of banding and asked for views upon its replacement with a suitable band and ROC multiple. However, the Scottish Government also made clear its intention that any such measure would need to provide continuity for investors – meaning that the ROC multiple selected for wave and tidal power would need to maintain equivalence with the support available under the MSO.

2.3 As section 6 indicates, a majority of respondents favoured retiring the MSO and moving instead to a higher ROC multiple. Some respondents provided their own calculations regarding the level at which this multiple should be set, while others called for a level equivalent to the rest of the UK but accompanied by the availability of capital grants at a suitable level.

**2.4 Having taken fully into account the consultation outcome and its discussions with stakeholders, the Scottish Government is proposing to discontinue the MSO and to replace it with an equivalent ROC multiple. Based upon the work carried out for us by SQW energy, this will mean a multiple of 5 ROCs for wave generation and 3 ROCs for tidal generation.**

2.5 These higher multiples will be available on the same basis as the MSO, meaning that in order to be eligible, generating stations must:

- Accord with the definition of wave or tidal stream as set out in the ROS;
- Be situated in Scottish waters or in the Scottish area of the Renewable Energy Zone;
- Be connected directly to a transmission and distribution network in Scotland; and
- Have received no support under the existing capital and revenue support schemes for wave and tidal stream energy operated by either the Scottish Government or BERR.

2.6 The latter criterion is particularly important. The situation at present is that all available funding under the Scottish Government's Wave and Tidal Energy Scheme (WATES) is committed in full, whilst there has yet to be any payment made under BERR's Marine Renewable Deployment Fund (MRDF). It is possible that the introduction and availability of new funding in Scotland, or future changes to the eligibility criteria under the MRDF, will provide developers with wider access to capital support. Projects in receipt of such support would be eligible then for the 2 ROCs proposed by BERR under its emerging technology band.

## Effects of Higher Multiples in Scotland

2.7 The Scottish Government recognises that many consultees will have some concerns about the potential effects of this proposal. We asked our consultants to forecast the effects that a switch to a higher ROC multiple might have upon a range of key factors – including costs to consumers, ROC numbers and output. Their conclusions are as follows:

- The maximum impact of a change from the MSO to a higher ROC multiple on average annual UK domestic electricity bills in 2015/16 would be under 40p – less than 0.1% of the average annual bill.
- Under a worst case scenario, the maximum impact of a change from the MSO to a higher multiple would be a reduction in the UK ROC price of up to 1.5% or a reduction in renewable output of up to 1.3% in a given year.
- However, the actual impact on renewable generation and thus carbon emissions is likely to be much smaller. This is because the forecast above is based on an optimistic marine output scenario (80 MW of installed capacity by 2014/15) and extremely pessimistic forecasts of ROC output from other technologies (which maximises the impact of any additional marine ROCs).
- Under other scenarios, the impact could be positive, encouraging additional renewable generation and thus reducing carbon emissions.

2.8 The Scottish Government believes that these outcomes, based on pessimistic forecasts and representing worst case scenarios, are de minimis and that the RO as a whole will not be adversely affected by their introduction. Moreover, it bears repeating that the higher ROC multiples proposed for these technologies in Scottish waters simply extend a situation and differential which already exists under the MSO.

## Impacts and Effectiveness – Monitoring and Review

2.9 The Scottish Government agrees with colleagues in BERR and DETINI that future decisions on necessary ROC multiples and band setting should be based on robust and independent advice. It is acknowledged that there remains a deal of uncertainty at the moment regarding the operating costs of wave and tidal energy technologies. It is the Scottish Government's intention to commission independent expert analysis of such costs to inform any future review of support for wave and tidal generation in Scotland.

2.10 This will be mirrored in our wider approach to the setting of bands as a whole, a process as part of which the Scottish Government proposes that its Forum for Renewable Energy Development in Scotland (FREDS) play a formal reviewing role – although we will continue to liaise with colleagues in the other UK administrations and to take account of similar and related studies on cost.

2.11 The Scottish Government proposes also to follow the same timetable for review of bands. This means that the higher wave and tidal bands proposed here would remain in place until 2013, with the process of review (as for all bands) beginning in October 2010.



2.12 Similarly, however, it would be the Scottish Government's intention to review these bands within that period in the event of a particular trigger or event taking place. For bands within the ROS as a whole, it is the Scottish Government's intention to adopt the defined circumstances as proposed by BERR and set out in paragraphs 8.71 to 8.77 of its statutory consultation.

2.13 However, the Scottish Government proposes in addition to review its bands for wave and tidal power in the context of the same capacity threshold as proposed under the MSO. This means in effect that support at the higher multiples proposed in this document would be available, as would have been the case under the MSO which this support level is designed to replace, for only up to the first 75 MW of installed capacity. In the event that installed wave and tidal capacity plus formal applications for Electricity Act or equivalent consent to construct new such capacity breach this threshold, then the Scottish Government would initiate an emergency review of the support levels in place.

### **State Aid**

2.14 The changes necessary to introduce banding have been notified formally to the Commission by the UK Government. The Scottish Government is liaising with BERR and the Commission regarding the issue of our proposed support for wave and tidal power under a banded RO. This is being conducted in the context of the Commission's approval for the Scottish Government's MSO two years ago, and the fact that this proposal seeks to establish and maintain support equivalent to that level through a different mechanism.

### **Conclusion**

2.15 **We would be grateful for views upon:**

- **The proposed switch to a higher ROC multiple (5 ROCs and 3 ROCs respectively) for unsupported wave and tidal generation in Scottish waters;**
- **The proposed multiples, their likely effectiveness and wider effects; and**
- **The proposals for review.**

## SECTION 3

### ENERGY FROM WASTE – ADVANCED CONVERSION TECHNOLOGIES

3.1 As the summary of responses in section 6 highlights, our preliminary consultation elicited greater opposition than support for a requirement within the ROS regarding a specific and universal efficiency requirement for plants using advanced conversion technologies (ACTs) – defined within the ROS as those using gasification, pyrolysis and anaerobic digestion. Those against the proposition offered a number of reasons, including the creation of a perverse incentive to site projects in and transfer fuel outwith Scotland, where the rewards would be potentially higher.

3.2 It was also argued that the setting of a specific threshold or requirement within the legislation, which would apply across the board from the outset of a project, could hamper the development of these technologies and rule out projects which may in time find a heat customer or otherwise increase the efficiency of their operation – meaning that a case by case approach should be adopted, rather than a universal solution imposed.

#### **Proposal**

3.3 The Scottish Government has considered this issue carefully, and accepts that a “one size fits all” approach regarding efficiency / CHP with regard to such generating stations would fail to take sufficient account of the different circumstances and requirements which would apply to different facilities, and could lead to some good projects being prevented from going ahead.

3.4 Continued support for these technologies maintains the opportunity for their development and to achieve greater efficiencies and cost reductions over time. It also enables them to prove that they represent an efficient alternative to the straight incineration of waste, and their potential contribution in terms of the treatment of a number of different fuel streams, such as energy crops, where local synergies between wastes materials and energy crops may lead to more viable developments.

3.5 The Scottish Government wishes also to avoid the scenario where waste material is transported from Scotland across the border on the grounds that operators there are able to pay a higher fee for the fuel stream in question.

3.6 At the same time, however, the Scottish Government is keen to ensure as much consistency as possible between the ROS and wider policy within Scotland on the use and treatment of waste.

**3.7 Following internal discussion and consideration, the Scottish Government is proposing a requirement within the ROS that operators of ACT plants in Scotland should have their eligibility for ROCs linked to regard for the guidelines on the Thermal Treatment of waste as published by the Scottish Environment Protection Agency (SEPA) with respect to such plant.**

3.8 This could be achieved via a requirement within the ROS for operators of ACT plant to guarantee, as part of their annual declaration to Ofgem, that discussions with SEPA in relation to the application of their published guidelines to the plant in question had taken place.

3.9 This would be fully consistent with the Scottish Government's wider policy on the treatment of waste, and in a way that doesn't introduce further unnecessary variances with the UK ROC system.

3.10 It is the Scottish Government's intention, in the context of this proposal, to ensure that the guidelines, which have been consulted upon and which are due to be published shortly, are appropriate for all ACTs, including Anaerobic Digestion (AD) plants. The Scottish Government is aware that there is considerable interest in AD at the moment, and does not want to constrain development in this area.

3.11 The Scottish Government plans also, in the context of future planned and scheduled reviews, to examine the levels of efficiency being achieved by ACTs developed in the interim.

## **Conclusion**

**3.12 We would be grateful for views on the proposal in paragraphs 3.7 and 3.8 that ACT plant should have their eligibility (for 2 ROCs as part of the proposed emerging technology band) linked to regard for the relevant guidelines with respect to such plant in Scotland.**

## **SECTION 4**

### **ISLAND WIND**

4.1 The UK Government has proposed that offshore wind be classified as a post-demonstration technology and that, in recognition of the higher development and capital costs involved, it should be awarded 1.5 ROCs per unit of power.

4.2 The Scottish Government has received representations from some stakeholders claiming that the higher costs of developing wind projects on the Scottish islands, and in particular the costs of establishing the necessary grid connections, meant that such projects should be treated as “offshore” wind, thus receiving 1.5 ROCs per unit.

4.3 The Scottish Government’s consultation document asked for wider views on this proposition, and on its potential costs and benefits. In particular, we asked for evidence to support the view that a higher band was necessary.

### **Consultation Outcome**

4.4 There was more opposition than support for the proposition that island wind be awarded more ROCs for their output. Several respondents pointed to the recent outcome of a study conducted by IPA Energy for the UK Government, which argues against the need for transmission capping across much of the Scottish isles, as evidence against the need for a higher band.

4.5 Others argued that a higher band was unnecessary, and that significantly higher capacity factors for wind farms in these regions meant that 1 ROC was sufficient – quoting in evidence the fact that several existing development proposals are already in the system based on the return of 1 ROC per unit.

4.6 It was also argued that the costs of developing projects and installing large turbines on land, whether or not that land is outwith the mainland, are significantly less than for offshore wind.

4.7 Those in favour argued that the costs involved (grid connection and reinforcement, capital and operating costs) were still sufficiently high to warrant additional support.

### **Conclusion**

4.8 It is evident that developing wind farms on the Scottish islands is proving challenging, for a number of reasons. However, the Scottish Government has received no evidence, nor has the report produced by our consultants identified any, to suggest that the higher costs of development are an insurmountable barrier to project development in all cases. The fact that large developments are in or have made their way through the planning system in these areas seems at least to lend support to the suggestion that the current incentive under the RO is sufficient in itself.

4.9 There is also a concern that the availability of a higher band would risk flooding the market with additional ROCs and thus reduce the effectiveness and impact of banding as a whole – including the higher bands which the Scottish Government proposes to introduce for unsupported wave and tidal power.

4.10 However, the Scottish Government wishes to place this decision firmly in the context of its wider view of and actions relating to transmission charging, in particular the recent announcement by the UK Government that it is minded not to introduce a cap on grid transmission charges for projects in the Scottish islands.

**4.11 The Scottish Government remains firmly opposed to the current transmission charging model as proposed by National Grid and continues to make representations to National Grid, Ofgem and the UK Government on this issue. The Scottish Government has developed, in conjunction with generating companies and the renewables sector in Scotland, an alternative charging methodology and has presented it to National Grid and Ofgem. Further discussions on this issue are ongoing.**

## **SECTION 5**

### **BIOMASS / OTHER TECHNOLOGIES**

#### **Background**

5.1 The Scottish Government's preliminary consultation asked for views upon (and evidence supporting) the case for change in relation to variations in support in Scotland relative to the rest of the UK for other renewable technologies. Consultants SQW were asked also to comment on this aspect with regard to a number of technologies.

5.2 While the consultation did elicit a few calls for greater or lesser support, there was no convincing evidence offered in support of these. SQW's report for the Scottish Government, which investigated and considered the case for different bands in particular areas, found similarly that there is no compelling case from the evidence available to justify further variations in Scotland outwith those necessary to translate the MSO into higher bands for wave and tidal power.

#### **Biomass**

5.3 The Scottish Government did receive a suggestion with regard to the levels of support for biomass only and biomass CHP stations. The UK Government's proposals for the introduction of banding set out that biomass stations producing electricity only should receive 1.5 ROCs for each unit of output, whilst biomass stations fitted with good quality combined heat and power (CHP) should receive 2 ROCs. Our preliminary consultation did not propose that Scotland should adopt a different approach.

5.4 However, it was put to the Scottish Government that the additional incentive for CHP might not be sufficient under certain circumstances – for example, biomass plants over a certain size might not be swayed sufficiently by the availability of an additional 0.5 ROCs per unit to include and fit CHP to their project. This could result in supplies of woody biomass, a finite resource for which there are several competing users, being burnt in less efficient plants than might otherwise have been the case.

#### **Consideration**

5.5 The Scottish Government has considered this proposal carefully, and taken some initial soundings on the proposal that biomass plants generating electricity only should have their eligibility to receive 1.5 ROCs made subject to a capacity threshold – e.g. stations of over 10 MW in size might receive only 1 ROC, thereby increasing significantly the incentive to fit good quality CHP.

5.6 It has been put to the Scottish Government that such a change at this stage would threaten investment in biomass plant already in train. Another factor to consider is the UK Government's proposal that existing biomass stations, i.e. those currently operational, should be banded up to the same level as new build, thus receiving 1.5 ROCs.

5.7 **After careful consideration, the Scottish Government is proposing no change in this area.** Whilst the argument that incentives for the most efficient use of scarce resources is compelling, there are wider considerations.

5.8 Such a change would risk creating a perverse incentive for biomass material to be exported to generating stations outwith Scotland. Moreover, the Scottish Government is aware of the value that the baseload generation offered by biomass capacity can provide, and does not wish such generation in Scotland to receive less support relative to the rest of the UK.

5.9 However, the Scottish Government agrees that such plant should make the most efficient use of resources and that the heat generated should be captured and used wherever that is possible.

5.10 Discussions continue to take place around the development of a stand alone mechanism to support renewable and low carbon heat. This would be entirely consistent with work that the Scottish Government has undertaken on development of a renewable heat action plan, and strengthens the argument that thermal renewable electricity plant developed in response to a banded RO will have a significant and separate additional incentive in the near term to capture and use any heat produced.

## **Conclusion**

5.11 **The Scottish Government invites views on its decision to propose no further variations in support in Scotland relative to the rest of the UK. At the same time, consultees are urged as before to produce evidence supporting their belief that any such variation is justified.**

## SECTION 6

### PRELIMINARY CONSULTATION – SUMMARY OF RESPONSES

#### Overview

6.1 There were 45 responses to the consultation, comprising major utilities, suppliers and generators of electricity, trade associations, environmental organisations, public sector bodies and individuals.

6.2 The response to the key issues consulted upon was as follows:

a) **Support for Wave and Tidal Power**

12 respondents in favour of offering higher ROC multiple than proposed by UK Government.

7 respondents in favour of consistent approach across UK.

3 respondents explicitly in favour of retaining Marine Supply Obligation rather than offering higher ROC multiple.

b) **Energy from Waste**

7 respondents in favour of linking higher ROC multiples for waste plants using advanced conversion technologies (ACTs) to greater plant efficiency / installation of combined heat and power (CHP)

12 respondents opposed to introduction of such a link.

c) **Higher ROC Multiple for Island Wind Projects**

6 respondents in favour of higher ROC multiple for wind projects on Scottish islands.

10 respondents opposed to higher multiple.

6.3 More information on the responses in these areas, plus some of the explicit comments received, is contained in the following pages. There is also a brief summary of the more general comments received in response to the consultation.



## **SUPPORT FOR WAVE AND TIDAL POWER**

### Summary

- **12 respondents in favour of offering higher ROC multiple than proposed by UK Government.**
- **7 respondents in favour of consistent approach across UK.**
- **3 respondents explicitly in favour of retaining Marine Supply Obligation (MSO) rather than offering higher ROC multiple.**

### Comments from Consultees

- Several respondents made the point that cost estimates for wave and tidal generation are too low and that cost estimates need to be revisited.
- The availability of grant funding at the right level both within Scotland and across the UK, alongside a consistent 2 ROCs for wave / tidal output, would deliver the best outcome – higher ROC multiple / MSO approach without grant funding is too risky.
- There should be a capacity ceiling set on the availability of higher ROCs in order to maintain stability within the ROC market.
- Concerns were expressed about the potential delay to replacement of MSO with higher band that State Aids clearance might entail.
- A feed-in tariff should be introduced for marine generation in preference to the RO mechanism.
- Questions were raised regarding the implications for tradability of wave / tidal ROCs between Scotland and the rest of the UK.
- Projects in planning should be grandfathered at the current MSO level.
- MSO should be amended to reflect inflation in construction costs.
- Multiple ROCs not as stable as the “MSO with headroom” approach.
- Grid / Crown Estate leasing issues still need to be addressed.
- Funding into environmental impacts and monitoring of wave and tidal generation needs to be introduced and maintained.

## ENERGY FROM WASTE (EfW)

### Summary

- **7 respondents in favour of linking higher ROC multiples for waste plants using advanced conversion technologies (ACTs) to greater plant efficiency / installation of combined heat and power (CHP)**
- **12 respondents opposed introduction of such a link.**

### Comments from Consultees

- The Renewables Obligation exists to incentivise the generation of renewable electricity – it is not its function to deliver increases in heat or policy objectives associated with waste management.
- Creates perverse incentive to site projects and transfer fuel outwith Scotland.
- Not one ROC yet issued to gasification / pyrolysis plant in history of RO – changes must not be made which will damage investor confidence.
- Projects already have a natural incentive to make processes as efficient as possible – CHP feasibility will only ever apply on site by site basis.
- Setting an efficiency threshold or requirement for CHP that some projects or technologies can't meet will seriously hamper development of these technologies in Scotland.
- The potential for major strategic developments could be threatened by this requirement.
- Heat customers are unlikely to sign the long-term contracts necessary for project finance to be secured.
- Uncertainty about precise way in which efficiency will be defined / measured will it be “range”, or “over the line”?
- Support the technologies now (with multiple ROCs) and then the heat networks / customers may develop around them.
- Sustainable Development Commission report specifically recommended excluding ACTs from higher efficiency level recommended for energy from waste in general.
- Focus should be on CO<sub>2</sub> / greenhouse gas savings.
- ACTs generally small scale – potential disbenefit to communities if this is applied.
- If not “efficient”, would plant be totally ineligible or simply receive fewer ROCs?
- Why should electricity generators (and not heat customers) shoulder society's joint responsibility to use heat sensibly?
- Perverse to award more ROCs to low efficient ACTs than highly efficient EfW.

## **SUPPORT FOR ISLAND WIND PROJECTS**

### Summary

- **6 respondents in favour of higher ROC multiple for wind projects on Scottish islands.**
- **10 respondents opposed to higher multiple.**

### Comments from Consultees

- Outcome of recent IPA study for BERR suggests that more support is not justified by available evidence (although suggestions from some that IPA analysis is flawed).
- Focus should remain on dealing with transmission charging issue and achieving sensible solution for Scotland – these charges affect more than simply wind projects.
- Change would add more complication and risk to RO.
- Island costs significantly less than for offshore wind.
- Change based on lack of evidence could flood market with ROCs and affect development of number of technologies.
- Higher band would create perverse incentive to locate away from more efficient areas.
- Change needs to be based on clear evidence, and on thorough and transparent cost / benefit analysis.
- Case for change undermined by fact that developers have been working on such projects for some time now, suggesting that current RO incentive is already sufficient.
- Higher connection and reinforcement charges, higher capital and operating costs, coupled with transmission charges means more support needed.
- Capacity factors for wind output in Scottish islands is often exaggerated.

## GENERAL COMMENTS

### Biomass / Energy Crops

- Biomass projects under 10 MW in size often face higher costs and should qualify for 2 ROCs, to help encourage technology and fuel supply chain.
- Current data on available wood fuel data across UK is badly flawed, and in need of urgent and rigorous update.
- Support for biomass projects needs to recognise that competing users for the resource can't compete with heavily subsidised generators – more should be done to encourage use of contaminated waste wood for energy projects.
- Higher support for energy crops may lead to insensitive / inappropriate use of land.
- Definition of energy crops should be widened.
- Scottish Government forestry policy should ensure that all new woodland planting must be appropriately located and designed / managed to enhance biodiversity.
- Additional support for “electricity only” projects should be capped at a set capacity threshold, in order to strengthen the incentive to build CHP into biomass plants.

### Others

- Banding likely to encourage inefficient investment, increasing the costs and complexity of the RO.
- Support microgeneration creates incentive to limit size of small hydro plant to 50 kW – should consider awarding 2 ROCs for output related to first 50 kW for plants up to a certain size.
- Question of additional support for small hydro needs to await completion of work being carried out by FREDS and the British Hydro Association.
- Projects under 5 MW in size are facing higher costs and should receive more ROCs – additional support for developments beneath this threshold would encourage community projects.
- There should be a higher band created for community projects.
- More should be done to encourage and support the injection of biogas to the gas network.
- 0.25 ROCs is insufficient to support new landfill gas projects.
- Need clarity on number of ROCs attributable to output from food wastes when mixed with sewage within an anaerobic digestion plant.
- Scottish Government should clarify its view on use of feed-in tariffs as an alternative to or alongside the RO.
- Scottish Government needs to confirm that it is committed to the RO for the long-term, and that current proposals will not be amended post-2009.
- The proposal to reclaim research and development grants from certain projects is unfair, and amounts to “double jeopardy”.
- Question on award of ROCs to plant burning both “regular” biomass and energy crops.

## SECTION 7 TECHNOLOGY DEFINITIONS AND PROPOSED BANDS

Generation type	Definition	Level of support ROCs/MWh	No of MWh to be generated for issue of one ROC
Hydro-electric	<p>Electricity generated by a hydro generating station.</p> <p>A “hydro generating station” means a generating station which is wholly or mainly driven by water (other than a generating station driven by tidal flows, waves, ocean currents, geothermal sources or using a difference in tidal levels) and the “generating station” extends to all turbines supplied by the same civil works, except that any turbine driven by a compensation flow supplied by those civil works where there is a statutory obligation to maintain such compensation flow in a natural water course shall be regarded as a separate hydro generating station.</p> <p>NB The current restrictions on pre-existing hydro above 20 MW in capacity will continue to apply.</p>	1.0	1
Onshore Wind	Electricity generated from wind by a generating station that is not offshore (see offshore definition below).	1.0	1
Offshore Wind	<p>Electricity generated from wind by a generating station that is offshore.</p> <p>A generating station is offshore if:-</p> <ul style="list-style-type: none"> <li>(i) its turbines are situated wholly or mainly in offshore waters, and</li> <li>(ii) it is not connected with dry land by means of a permanent structure which provides access to land above the mean low water mark.</li> </ul>	1.5	$\frac{2}{3}$

Wave	Electricity generated from capture of the energy created from the motion of waves on the sea.	2.0	$\frac{1}{2}$
	<i>In Scottish waters, where operator not in receipt of Scottish or UK Government grant</i>	<b>5.0</b>	<b><math>\frac{1}{5}</math></b>
Tidal Stream	Electricity generated from the capture of the energy created from the motion of tidal currents in the sea.	2.0	$\frac{1}{2}$
	<i>In Scottish waters, where operator not in receipt of Scottish or UK Government grant</i>	<b>3.0</b>	<b><math>\frac{1}{3}</math></b>
Tidal Impoundment – Tidal Barrage	Electricity generated by a generating station driven by the release of water impounded behind a barrier using the difference in tidal levels and that barrier is connected to both banks of a river and is less than 1GW declared net capacity.	2.0	$\frac{1}{2}$
Tidal Impoundment - Tidal Lagoon	Electricity generated by a generating station driven by the release of water impounded behind a barrier using the difference in tidal levels and which is not a tidal barrage and is less than 1GW declared net capacity.	2.0	$\frac{1}{2}$
Solar Photovoltaic	Electricity generated from the direct conversion of sunlight to electricity.	2.0	$\frac{1}{2}$
Geothermal	Electricity generated using naturally occurring subterranean heat.	2.0	$\frac{1}{2}$
Geopressure	Electricity generated using naturally occurring subterranean pressure.	1.0	1

Landfill Gas	<p>Electricity generated from the gas formed by the anaerobic digestion of material in a landfill.</p> <p>“Landfill” has the meaning given in article 2(g) of the Landfill Directive (1999/31/EC).”</p>	0.25	4
Sewage Gas	Electricity generated from the gas formed by the anaerobic digestion of sewage.	0.5	2
Energy from Waste with CHP	Electricity generated from the combustion of waste in a qualifying combined heat and power generating station.	1.0	1
Gasification / Pyrolysis	<p>Electricity generated from the conversion of waste or biomass into a liquid or gaseous fuel, or both, for use in a generator, by the processes of gasification or pyrolysis or any combination thereof, and; in which the gross calorific value of the produced fuel, or fuels, at the inlet to the generator and as measured at 15 deg C and 1 atmosphere pressure is at least 4.4 MJ/M<sup>3</sup> for gaseous fuels or 10 MJ/kg for liquid fuels. This band does not, however, include electricity generated from such fuels in a calendar month in which the generating station has generated electricity partly from fossil fuel.</p> <p>“Pyrolysis” is the thermal degradation of a substance in the absence of any oxidising agent (other than that which forms part of the substance itself) to produce char and one or both of gas and liquid.</p> <p>“Gasification” is the substoichiometric oxidation or steam reformation of a substance to produce a gaseous mixture containing two or all of the following: oxides of carbon, methane and hydrogen.</p>	2.0	1/2

Anaerobic Digestion	<p>Electricity generated from the gas formed by anaerobic digestion of material which is neither sewage nor landfill. This band does not, however, include electricity generated from such fuels in a calendar month in which the generating station has generated electricity partly from fossil fuel.</p> <p>“Anaerobic digestion” is the bacterial fermentation of organic material in the absence of free oxygen.</p>	2.0	1/2
Co-firing of Biomass	Electricity generated from biomass by a generating station in a calendar month in which it has generated electricity partly from fossil fuel and partly from biomass.	0.5	2
Co-firing of Energy Crops	<p>Electricity generated from energy crops by a generating station in a calendar month in which it has generated electricity partly from fossil fuel and partly from energy crops.</p> <p>“Energy crop” means a plant crop planted after 31st December 1989 which is grown primarily for the purpose of being used as fuel or which is one of the following:</p> <p>(a) miscanthus giganteus;  (b) salix (also known as short rotation coppice willow); or  (c) populus (also known as short rotation coppice poplar).</p>	1.0	1
Co-firing of Biomass with CHP	Electricity generated from biomass by a qualifying combined heat and power generating station in a calendar month in which it has generated electricity partly from fossil fuel and partly from biomass, and where the fossil fuel and biomass have been burned in separate boilers.	1.0	1



<p>Co-firing of Energy Crop with CHP</p>	<p>Electricity generated from energy crops by a qualifying combined heat and power generating station in a calendar month in which it has generated electricity partly from fossil fuel and partly from energy crops, and where the fossil fuel and energy crops have been burned in separate boilers.</p> <p>“Energy crop” means a plant crop planted after 31st December 1989 which is grown primarily for the purpose of being used as fuel or which is one of the following:</p> <p>(a) miscanthus giganteus;  (b) salix (also known as short rotation coppice willow); or  (c) populus (also known as short rotation coppice poplar).</p>	<p>1.5</p>	<p><math>\frac{2}{3}</math></p>
<p>Dedicated Biomass</p>	<p>Electricity generated from biomass, except for electricity generated by a generating station in a calendar month in which it has generated electricity partly from fossil fuel and partly from biomass.</p>	<p>1.5</p>	<p><math>\frac{2}{3}</math></p>
<p>Dedicated Energy Crops</p>	<p>Electricity generated from energy crops, except for electricity generated by a generating station in a calendar month in which it has generated electricity partly from fossil fuel and partly from energy crops.</p> <p>“Energy crop” means a plant crop planted after 31st December 1989 which is grown primarily for the purpose of being used as fuel or which is one of the following:</p> <p>(a) miscanthus giganteus;  (b) salix (also known as short rotation coppice willow); or  (c) populus (also known as short rotation coppice poplar).</p>	<p>2.0</p>	<p><math>\frac{1}{2}</math></p>

Dedicated Biomass with CHP	Electricity generated from biomass by a qualifying combined heat and power generating station in a calendar month in which it is fuelled wholly by biomass.	2.0	1/2
Dedicated Energy Crops with CHP	<p>Electricity generated from energy crops by a qualifying combined heat and power generating station in a calendar month in which it is fuelled wholly by energy crops.</p> <p>“Energy crop” means a plant crop planted after 31st December 1989 which is grown primarily for the purpose of being used as fuel or which is one of the following:</p> <p>(a) miscanthus giganteus;  (b) salix (also known as short rotation coppice willow); or  (c) populus (also known as short rotation coppice poplar).</p>	2.0	1/2