DEPARTMENT OF ENERGY & CLIMATE CHANGE

Call for Evidence on Renewable Energy Trading

26th April 2012

Call for Evidence on Renewable Energy Trading

This document is a Call for Evidence on the possibility of the UK utilising the flexibility mechanisms laid out in the Renewable Energy Directive (2009/28/EC).

The Call for Evidence will close on 11th June 2012. Please send your responses to tradingresponses@decc.gsi.gov.uk from Monday April 30th. Your response will be most useful if it is framed in direct response to the questions posed and the specific calls for evidence invited, though further comments and evidence are also welcome. Reasoning and evidence to support your answers will be particularly helpful

Confidentiality and data protection

Information provided in response to this Call for Evidence which is clearly identified as commercially sensitive or confidential, and personal information, will not be published by us except in accordance with the access to information legislation (primarily the Freedom of Information Act 2000, the Data Protection Act 1998 and the Environmental Information Regulations 2004).

If you want information that you provide to be treated as confidential please say so clearly in writing when you send your submission. It would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.

Introduction

1.1 The Coalition Government is committed to increasing the amount of renewable energy deployed in the UK. This will help us regain our energy independence, protect consumers from fossil fuel price fluctuations, drive investment in new renewable energy sector jobs and businesses, as well as keep us on track to meet our carbon reduction objectives for the coming decades. Renewable energy will play a key role in decarbonisation of the power sector, alongside nuclear, carbon capture, and energy efficiency.

1.2 Recent analysis demonstrates that the UK has the capacity to deliver our legal obligation of 15% renewable energy through domestic action. Independent analysis carried out by the Committee on Climate Change (CCC) and DECC's own bottom-up analysis, developed with industry, both confirm that markets are able to scale up at the rate necessary to deliver the required amount of generation necessary for 2020. The UK Renewable Energy Roadmap, published last summer, set out our programme of action to deliver this aim.

Benefits of Renewable Energy Deployment

Investment into the UK renewables sector and job creation. From April 2011, over £4.7bn of new investments in UK renewable energy projects have been announced, with the potential to support over 15,000 new renewable energy sector jobs across the country.

Greater energy security and energy independence. Meeting our ambitions will reduce our reliance on imported fossil fuels.

Move toward a decarbonised energy system and a decrease in emissions. By 2020 we expect to save around 190MT carbon and 755MT carbon by 2030

1.3 Alongside domestic action, the Roadmap also recognised the potential to work with our European partners on renewable energy deployment. The reasons for this were three-fold:

- **Cost-effectiveness:** We are taking steps now to maximise cost effectiveness of renewable energy deployment and minimise bill impacts for consumers. However, should domestic costs not come down sufficiently, and alternative, cheaper opportunities arise in other countries, we could 'trade' renewable energy to safeguard UK consumers.

- **Commercial opportunity:** We have some of the best offshore wind resources in the world and could 'export' energy generated in UK waters to neighbouring countries. As a result we could see offshore wind projects connected across the British Isles and to mainland Europe, providing new manufacturing and jobs in the renewable energy sector in the UK to 2020 and beyond.

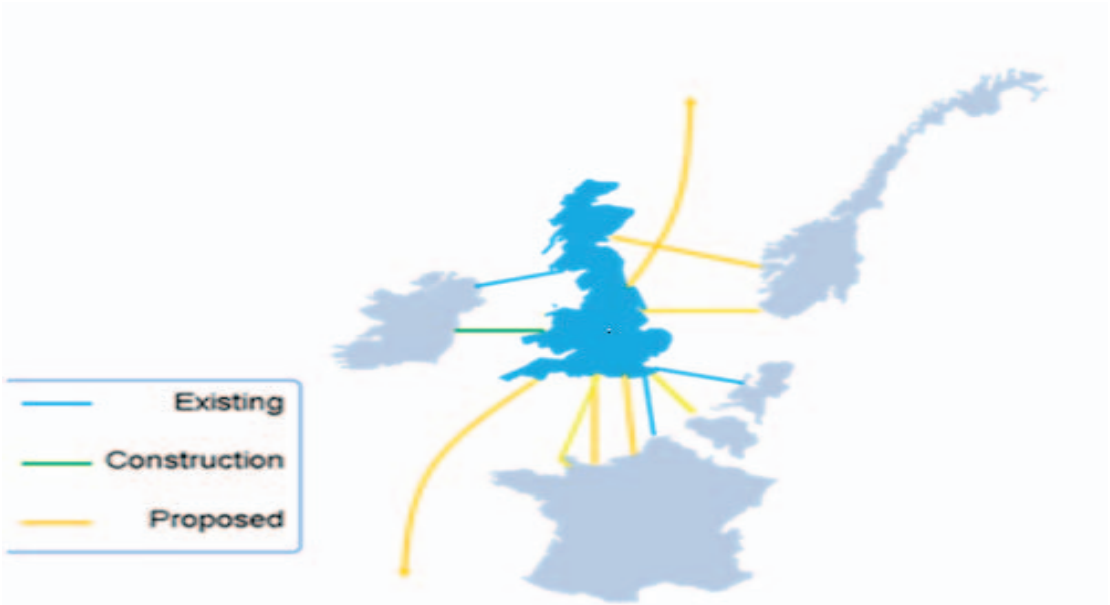
- **Contingency:** We expect increasing, but variable, deployment through the decade as infrastructure projects come forward in waves. There is also ongoing uncertainty on the level of energy demand, availability of sustainable biofuels and wider impacts of certain technologies. A mechanism to 'import' renewable energy could help the UK manage these risks, ensure compliance, reduce negative impacts and avoid infraction costs.

1.4 The Roadmap set out our intention to enable both the export and import of renewable energy under the flexibility mechanisms in the Renewable Energy Directive (the Directive) to secure the greatest benefit to the UK.

1.5 In addition, our approach to using the flexibility mechanisms should also be seen within the context of wider work to integrate the EU energy market. For example, the existing EU energy market legislation, particularly the Third Package adopted in 2009, contains detailed rules on unbundling of networks, as well as the further rules on energy market integration which are under development. Our approach to trading will also consider the import and export of power, including renewables, that already takes place .

Existing Connections in Great Britain

Trading of energy, including renewables, is not new. The GB electricity network is connected to the systems in France, Northern Ireland and the Netherlands through 'interconnectors', with others under construction or planned (shown in the figure below). Britain already imports and exports electricity, including renewable electricity, and in 2011, exports and imports accounted for around 3-4TWh of the electricity supplied.



1.6 But the thinking on trading - under the terms of the Directive - is at an early stage across the EU. It is currently unclear how it might work, how much potential 'surplus' credit there is to trade across Europe to 2020 and beyond, and how much it might cost to buy or sell. While the Renewable Energy Directive contains provisions to enable cooperation across Europe, the detailed practical arrangements – which are largely left to Member States to determine - are not yet worked out. In addition, analysis of the National Renewable Energy Action Plans submitted to the Commission in 2010 show that only a limited number of Member States expect to need to trade either because they have a surplus or because they predict a deficit.

Target Requirements of the Renewable Energy Directive

Mandatory target of a 20% share of energy from renewable sources in overall Community energy consumption by 2020, including a mandatory 10 % minimum target to be achieved by all Member States for the share of renewables in transport consumption by 2020.

The starting point, the renewable energy potential and the energy mix of each Member State vary. It is therefore necessary to translate the Community 20% target into individual targets for each Member State, with due regard to a fair and adequate allocation taking account of Member States' different starting points and potentials, including the existing level of energy from renewable sources and the energy mix.

On this basis, the target set for the UK is a 15% share of energy consumption to come from renewables by 2020. Indicative interim targets are also set for end 2012, 2014, 2016 and 2018 so that progress can be assessed.

1.7 The purpose of this Call for Evidence is to help understand how trading might work, the potential for imports and exports of renewable energy to or from the UK, and the costs and benefits. DECC is keen to understand views from a wide range of stakeholders at this early stage and this Call for Evidence from interested parties is to inform our work on how we may use the flexibility mechanisms and what would be required to enable their use.

Specifically the aim of this Call for Evidence is to:

- Understand the availability and potential for trading renewable effort with other Member States and third countries, including the potential to export renewable energy and credits.
- Understand the potential costs, benefits and risks to the UK of making use of the flexibility mechanisms to trade renewables.
- Understand the issues and barriers which will need to be addressed to enable renewables trading.

1.8 In the sections which follow we have provided definitions for each of the flexibility mechanisms together with an update on the work we are undertaking, before providing examples of how each mechanism could be used and a series of questions to which DECC invites your response. We are particularly interested in better understanding the potential opportunities for renewables joint projects outside of the UK and would therefore ask you to

provide the location of projects, technology type, potential generating capacity and likely capital and operating costs, if possible.

Flexibility Mechanisms

2.1 The Directive sets out a methodology for allocating the EU renewables target between individual Member States. This methodology does not account for differences in the cost of renewable technologies between Member States. Instead, the directive allows for some flexibility in meeting the target though 'flexibility mechanisms', designed to allow those Member States with lower renewable generation potential or higher costs to partially fulfil their renewables targets in or with other countries.

Background to the flexibility mechanisms

2.2 There are three broad types of flexibility mechanism set out in the Directive. These are *statistical transfers*, *joint projects* and *joint support schemes*. Each of these are explained in turn below and discussed in more detail in Section 3 of this Call for Evidence.

2.3 The flexibility mechanisms included within the Directive are as follows:

- **Statistical transfers** (Article 6): whereby one Member State with an expected surplus of renewable energy can trade it statistically to another Member State. This form of trade may take place without any accompanying physical flows of energy, i.e. only the 'renewable value' of the energy is transferred.

- **Joint projects** (Articles 7 – 10): whereby a new offshore or onshore renewable energy project in one Member State can be co-financed by another Member State and the 'renewable value' of the energy can be shared between the two. This form of trade between Member States may take place with or without any accompanying physical flows of energy, but if there was no physical flow then it would likely take the form of a statistical transfer. Joint projects for renewable electricity can also occur between a Member State and a third country (including Crown Dependencies), but only if the energy produced in the third country is imported into the EU.

- **Joint support schemes** (Article 11): whereby two or more Member States agree to cooperate on all or part of their support schemes for developing renewable energy and share out the renewable value by agreement between them.

2.4 The Directive does not set out the detailed framework by which these mechanisms will operate. While the Directive enables trading through the mechanisms above, the detailed practical arrangements for implementing the provisions are the responsibility of the involved Member States and are yet to be clarified.

2.5 In addition, while some Member States have shown an interest, there are not yet any real examples of statistical transfer or joint projects that have taken place, therefore considerable uncertainty exists about how the mechanisms might work in practice. There is however emerging evidence from a joint support scheme between Sweden and Norway which started in January 2012. The UK also has experience of renewable electricity trading across the UK through the 3 existing Renewables Obligations (in which energy generated in, for example, England, can be used by a supplier to meet their obligation in Scotland).

2.6 The flexibility mechanisms cannot be used to meet the 10% renewable transport sub-target. Sustainable biofuels, which will provide the majority of the Member State contributions to the transport sub-target, are already a globally traded commodity. However, if the contribution from renewable transport involves the use of multipliers[1], which only count towards the sub-target, any shortfall against the overall target can be made up using the flexibility mechanisms.

2.7 The cost to the UK of any potential renewable credits is uncertain, will be a negotiated price that will be determined by a number of factors, including the cost of supplying the electricity, but may also reflect the overall level of supply and demand of credits across the EU. This call for evidence aims to gain clearer evidence as to whether this will be able to deliver net savings to the UK.

2.8 The UK is currently involved in a number of strands of work with other Member States, the British Irish Council, and through the North Seas Countries' Offshore Grid Initiative, to better understand how the flexibility mechanisms could work in practice.

What are we doing to better understand the flexibility mechanisms

EU Concerted Action Programme

The Commission established a Concerted Action Programme for Member States to work together to implement the Renewable Energy Directive and share best practice in policies to increase use of renewables. As part of that programme we, together with other Member States, are working to establish how the flexibility mechanisms could work in practice. A review of the December 2011 progress reports submitted to date by Member States to the Commission shows only one use of the flexibility mechanisms with Sweden and Norway having launched a joint financial support scheme at the start of 2012.

British Irish Council

The UK, Irish Republic, Channel Islands, and the Isle of Man agreed to work together to exploit the major renewable resources and to better co-ordinate interconnectivity. Such an "All Islands Approach" could facilitate the cost-effective exploitation of the renewable energy resources available, increase integration between energy markets, and improve security of supply. Officials are now working together to develop a number of desk studies to help identify the potential benefits of such an approach. The desk studies will also consider the complex financial, legal and regulatory barriers which would need to be overcome to enable more cross-border renewables trading and greater interconnection.

[1] The Renewable Energy Directive includes multipliers for the calculation of the transport sub-target to encourage production of more sustainable renewable transport (e.g. electric vehicles, second generation biofuels and biofuels produced from waste materials) .

North Seas Countries Grid Initiative

This Initiative was launched in December 2010 by the Governments of 10 countries (UK, Germany, France, Belgium, Netherlands, Sweden, Ireland, Luxembourg, Denmark and Norway). The aim is for Governments to work together, with energy regulators, the Commission and industry, to identify the costs and benefits of, and tackle the technical, regulatory, market and planning barriers to, different approaches to co-ordinated development of offshore grids in the North, Irish and Baltic Seas.

The Initiative has a two year programme of work which is focusing on the following three areas: Grid configuration and integration; market and regulatory issues; planning and authorisation procedures.

One of the deliverables of the workstream on market and regulatory issues is to develop proposals for market mechanisms to facilitate the penetration of renewable generation, taking into account the impact of national renewables support schemes. This work is very relevant to the subject of this Call for Evidence. Final recommendations are expected at the end of 2012.

Your views on the use of the flexibility mechanisms to import or export renewable energy

Consultation Question	
1.	**Should the UK make use of one or more of these mechanisms, and for what reasons?**
2.	**What do you consider to be the potential costs, benefits and risks to the UK of making use of each of these mechanisms to import and export renewable energy?** • Statistical transfers • Joint Projects • Joint Support Schemes

Potential Use of the Flexibility Mechanisms

3.1 In the following sections we have set out the definition for each mechanism, developing thoughts on how the mechanisms might be used, and set out questions seeking your response.

Statistical Transfers

Definition

3.2 Article 6 of the Directive states that: *Member States may agree on and may make arrangements for the statistical transfer of a specified amount of energy from renewable sources from one Member State to another Member State.*

3.3 A statistical transfer allows a Member State to buy or sell a unit of renewable energy credit from or to another Member State without having to physically transfer that unit of energy. Similar types of mechanisms, involving virtual credits although not specifically for renewable energy, are already in operation – with trading taking place under the Emissions Trading Scheme and Clean Development Mechanism. Under the Renewable Energy Directive, the Member State selling the credit would be expected to demonstrate that the transfer will not affect the achievement of its own domestic renewable energy target. The UK could therefore either purchase or sell credits.

How it may work in practice

3.4 Implementation of a statistical transfer is likely to be relatively straightforward. It will require an agreement or Memorandum of Understanding between two or more Member States to buy or sell their “renewable credits”, and will not involve the private sector. There is no need for an accompanying transfer of the renewable energy. The statistical transfer arrangement could be for one or more years and has to be notified to the Commission, along with details of the quantity and price of the energy involved. Statistical transfers may be particularly helpful in covering short term delivery risks against the targets and may be an effective way of recovering some costs of production if the Member State is in a position to export surplus credit.

3.5 There is no market or platform, at present, for Member States to trade renewables ‘credits’. A small number of Member States have declared their need to conclude transfers, and others have indicated that they expect to have surpluses against the targets. We expect the reporting in 2013 against the first interim target to act as a potential trigger for Member States to begin considering trading more seriously and expect the potential market to become clearer.

3.6 It remains to be seen whether the statistical transfer mechanism will develop into a buyers or sellers market. If there is an overall shortfall across Europe the exporting Member State may be in a position to ask for a price above that of producing the energy, whereas the opposite may be

true if there is a significant surplus of renewable energy across Europe. Possible price setting mechanisms could include; individually negotiated contracts, a European trading platform similar to carbon emissions trading or based on a transparent price rule.

3.7 A disadvantage of using statistical transfer would be the associated risk of non-compliance. If the seller country was unable to deliver the promised renewable energy generation then the buying or selling Member State would potentially be in breach of the targets. A clause in the agreement may be necessary to allocate this risk, and would be part of the individual negotiation.

Your views on the UK's use of the statistical transfer mechanism to buy or sell renewable energy

Consultation Questions	
3.	**What do you consider to be the potential across Europe, for the UK to make use of the statistical transfer mechanism to buy or sell renewable 'credits' with other Member States in the next few years and the period approaching 2020?**
4.	**Do you consider there to be a role for the private sector in implementing the statistical transfer mechanism and, if so, how would that work?**
5.	**What do you consider to be the potential costs, benefits and risks to the UK of making use of the statistical transfer mechanism?**
6.	**Do you consider there to be any financial or non-financial barriers to the UK's use of the statistical transfer mechanism, and how could these be addressed?**
7.	**How do you think the market for statistical transfers could develop in Europe and how would Member State Governments, the private sector and others work together to put an agreement in place?**

Joint Projects

Definition

3.8 Article 7 of the Directive states that: *Two or more Member States may cooperate on all types of joint projects relating to the production of electricity, heating or cooling from renewable energy sources. That cooperation may involve private operators.*

3.9 Article 9 states that: *One or more Member States may cooperate with one or more third countries on all types of joint projects regarding the production of electricity from renewable energy sources. Such cooperation may involve private operators.*

3.10 The Renewable Energy Directive assumes that the Member State within which renewable energy generation takes place owns the renewable 'credit' attached to that generation so that it counts towards the achievement of their target (even if the energy is consumed elsewhere). However, under this flexibility mechanism and as stated in Article 9 above, a Member State could undertake to support either:

a) A specific renewable electricity, heat or cooling project in another Member State (or European Economic Area country) or;
b) a specific renewable electricity project in a third country (which would include Crown Dependencies in the case of the UK),

3.11 Both of these are providing that the energy related to that project, or an equivalent amount, is deemed to have been received into and consumed in the EU. The joint project mechanism can only be used for renewable energy projects that become operational after 25 June 2009.

How it may work in practice

3.12 Joint projects will be more complex than statistical transfers and are likely to be used for longer term agreements between Member States or Member States and third countries. The country with the most favourable conditions (resource and/or cost of deployment) will host the project, with the other countries benefiting from production in terms of either energy and/or renewables credits. In contrast to statistical transfer there is likely to be a role for the private sector in delivering joint projects.

3.13 The joint projects themselves may take multiple different forms and may be used for imports and/or exports of renewable energy and the associated credits:

- Projects outside the UK that are directly and exclusively connected to the GB or NI grid and not the grid of the host country. These would be suitable for imports only.
- Projects outside the UK that are directly but not exclusively connected to the GB or NI grid. These have a physical energy flow to GB or NI but are also connected to another country's grid. These would be suitable for imports only.
- Projects outside the UK that are not connected to the UK but where the renewable energy is consumed within the host country or supplied to and consumed within the energy market of another Member State. These would be suitable for imports only.
- Projects that are hosted within the UK but that are not connected to the GB or NI grid. Suitable for exports only.
- Projects that are hosted in the UK and are connected to the GB or NI grid. Suitable for exports and imports.

3.14 In the case of joint projects with a third country (a country not part of the EU or signed up to the Renewable Energy Directive) the UK would agree with that third country to acquire all (or part) of the renewable credit attached to that project to count towards our renewables target. In this instance, an equivalent amount of energy produced by the project, or produced elsewhere in the third country, must 'land' somewhere in the EU. In addition, the amount of electricity generated by the project which counts towards the renewables targets must not have received support from the third country (except for investment aid).

3.15 For each of these potential types of joint projects there are legal and regulatory issues. Issues include agreement on the applicable regulatory regime, rules for the audit of renewable energy generation/consumption, and the potential for over-compensation of state aid. These will vary according to the location of the joint project, the renewable technology concerned and whether the energy is consumed within the host country or whether it is connected to and consumed within the importing state or whether it is shared.

3.16 Joint projects could be designed on a case-by-case basis or a framework could be developed within which joint project agreements are constructed. The country hosting the joint project may or may not ask for compensation depending on the local mix of costs and benefits. Compensation may be in the form of a percentage of produced renewable energy.

Your views on the UK's use of the Joint Project mechanism to import or export renewable energy

Consultation Question	
8.	**Do you know of specific Joint Project opportunities which may exist for the:** • **import of renewable energy from another territory;** • **export of renewable energy generated in the UK to another territory** • **generation of renewable energy in another territory, where the energy can be consumed in another Member State?**
9.	**What are the costs, benefits and risks of this specific project – we would ask you to provide a high-level summary using Annex A, or if possible, more detailed information using the spreadsheet in Annex B.**
10.	**How do you consider the market for Joint Projects could develop in Europe and how would Member State Governments, the private sector and others work together to put in place the framework to develop such projects?**
11.	**Do you think there is a role for the European Commission to facilitate and administer renewables Joint Projects?**

Regulatory Issues

3.17 We know that further work is required to better align the respective regulatory regimes in areas such as:

- the regulatory arrangements applying to interconnectors and connection for offshore or onshore generation.
- the processes required for developers to apply for the consents, permits and licences required for a specific development project

Your views on the barriers to Joint Projects to import and export renewable energy

Consultation Question	
12.	**What do you consider to be the financial and non-financial barriers (including any technical issues) which will need to be addressed to enable the Joint Project opportunity to a) import renewable energy and b) export renewable energy to proceed, and how could these be resolved?**

Joint Support Schemes

3.18 The Government believes that it is important to retain control over the domestic support mechanisms for renewable generation. This is particularly important as they are partially funded by UK consumers through taxation or levies on energy bills. Given this we do not believe that a joint support scheme is appropriate at the current time. Therefore, the Call for Evidence focuses on how statistical transfer and joint projects might be applied.

Next Steps

4.1 Following the close of this Call for Evidence on 11th June 2012, DECC will carefully consider the responses received and will use them to come to a final policy decision on which flexibility mechanisms might be enabled and how they should be designed for use.

4.2 DECC will then look to make any primary or secondary legislation necessary as soon as possible and will continue to work with counterparts across the EU to monitor the market as it develops. Timetables are subject to parliamentary time being available and the will of Parliament.

Annex A: Response Form for Project Developers

In order to get the maximum benefit from your responses, there is specific information it would be helpful for us to gain about specific proposed projects. Please use approximates if exact information is unavailable. **An Excel spreadsheet template is also available below**

High-level summary of specific renewables Joint Project opportunity

Note: where possible please provide undiscounted figures in 2010 prices. Alternatively please provide the assumptions underpinning your estimates (including price base year or inflation assumptions, discount rate used etc...)

What financial support would be required, if any, to enable the Joint Project and how do you consider that might best be provided?

When would the availability of financial support, if available, need to be a) confirmed and b) in place to enable the completion of the project by 2020?

Background

Name of project:

Generating location:

Location where energy will be consumed:

Anticipated date of financial closure for the project:

Anticipated date of commercial operation:

Anticipated project lifetime (in years):

Scale of project

Generating capacity (by end 2020):(MW)

Expected load factor:(%)

Expected generation (each year to 2020): (GWh)

Forecast project costs

Capital cost of generating plant:

Cost of connection to the UK:

Operating costs over lifetime of the project:

Forecast project revenues

Revenue from energy supplied:

Levy Exemption Certificates:

Renewable Energy financial support:

The Internal rate of return you require to proceed with the development (%)

Annex B: Spreadsheet

Available as a separate document on the DECC website

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