ECONOMY, ENERGY AND TOURISM COMMITTEE

AGENDA

22nd Meeting, 2008 (Session 3)

Wednesday 12 November 2008

The Committee will meet at 9.30 am in Committee Room 6.

1. **Decision on taking business in private:** The Committee will decide whether to take item 3 in private.

2. **Determining and delivering Scotland’s energy future - the political landscape:** The Committee will take evidence, in a round-table discussion, from—

   Colin Imrie, Head of Energy Markets Division, Scottish Government;

   Robin Presswood, Business and Strategy Manager, Development Services, Fife Council;

   Rob Hastings, Director of Marine Estate, The Crown Estate;

   Alison Kay, Commercial Director - Transmission, The National Grid;

   Audrey Maclver, Head of Energy, Highlands and Islands Enterprise;

   Brian Nixon, Senior Director - Energy, Scottish Enterprise;

   Dave Watson, Scottish Organiser (Policy), UNISONScotland;

   Nicholas Gubbins, Chief Executive, Community Energy Scotland.

3. **Budget process 2009-10 (Stage 2):** The Committee will consider a draft report to the Finance Committee on the Scottish Government’s Draft Budget 2009-10.
The papers for this meeting are as follows—

Note from the clerk EET/S3/08/22/1
Note from the clerk EET/S3/08/22/2
Budget process - additional written submission from the Scottish Government EET/S3/08/22/3
Private Paper - Draft budget report (to follow) EET/S3/08/22/4
Economy, Energy and Tourism Committee

22nd Meeting, 2008 (Session 3), Wednesday, 12 November, 2008

Determining and delivering Scotland’s energy future – First roundtable on the political landscape

Background

1. Following the Committee’s agreement to its approach for its energy inquiry – Determining and delivering Scotland’s energy inquiry – the first in a series of roundtables has been organised as part of phase 1 of the inquiry through to the end of the year. These roundtables supplement the Committee’s forthcoming external fact-finding visits to Scottish Power’s control centre at Kirkintilloch, Longannet power station, Torness power station, Diageo, Fife Energy Park and Scottish and Southern Energy’s windfarm at the Braes of Doune, which are all being organised in the coming weeks.

2. The above will complete the Committee’s work as part of phase 1 of its inquiry. The Committee will then commence phase 2 of its inquiry in the new year with further fact-finding visits as well as detailed evidence-taking sessions held in the Parliament (details of which will be considered by the Committee in January).

3. This first roundtable – on the political and institutional landscape – is being held with some of the key bodies from the public sector or related institutions to identify the roles of each and the key issues that each identify as critical to determining and delivering Scotland’s energy future.

4. In particular, this first roundtable will help the Committee to focus on questions relating to the areas of policy and development which are both reserved and devolved, the corporate versus Government context, regulation, the national grid and local and community initiatives. Additionally, representatives of the Scottish Government will be able to give a further update on policy developments since officials appeared before the Committee earlier in the year.

5. For information, the next two roundtables will focus on:

   - **Scenario planning.** This roundtable would focus on the need to identify current and future demand levels accurately by means of comparable statistics. The Committee will also seek to understand what various organisations consider to be a desirable scenario for Scotland’s energy future.

   - **Imperatives and policy drivers.** This roundtable would focus on the, occasionally competing, imperatives to reduce energy demand, including climate change and environmental protection, commitments to reduce carbon emissions, security of supply and cost to consumers (especially fuel poverty).
Recommendation

6. Members are asked to consider the focus for this first roundtable and take evidence from the witnesses to identify the key issues that the Committee will need to focus on in terms of how to determine and deliver on Scotland’s energy future.

7. Members may wish to note that the submissions of written evidence received from some of today’s witnesses have been reproduced in the annexe to this paper.

Stephen Imrie
Clerk to the Committee
November, 2008
SUBMISSIONS OF WRITTEN EVIDENCE

HIGHLANDS AND ISLANDS ENTERPRISE

The Committee seeks evidence on the following three issues:-

1. **What type of future is needed in Scotland in terms of the production, distribution and more efficient use of energy, given the issues of price, security of supply and sustainable development?**

The Highlands and Islands has a long association with the oil and gas sector, and will continue to exploit the economic opportunities this energy sector brings. It is, however, recognised that the energy mix will change with the need to reduce carbon emissions and the resulting increasing role of renewable energy. The Highlands and Islands area has a major role to play in this respect, providing the greatest concentration of potentially exploitable renewable energy resources in the UK. This offers the businesses and communities of this area a major opportunity, but one which can only be realised if efforts are co-ordinated.

More efficient homes and businesses are needed to reduce energy demand and significant investment in grid infrastructure is required to facilitate the transmission of renewable electricity from generation areas to demand centres.

2. **How can this future be delivered in Scotland and how will we meet all the various targets and obligations?**

- Investor confidence
- Improved planning and consenting
- Grid access and charging
- Supply chain
- Skills and knowledge

3. **What decisions need to be taken, by when and by whom to deliver on Scotland's energy future?**

**Electricity**

To meet the renewable electricity targets, generation of an estimated 8.4GW is required by 2020.

- Current installed is c. 2.8GW
- Further 1GW under construction
- 3.4GW Section 36 applications in the system, with more, smaller projects being considered by local authorities
- Pre application opinions on a further 2GW
Data gathering required: what will the 2020 renewable electricity generation landscape look like? What mix of technologies will deliver 2020 targets? This work is ongoing with industry informing government which is in turn feeding into the National Planning Framework. A definitive view on these issues at the earliest opportunity would bring more clarity to the sector. Further testing and refining of devices in the case of emerging technologies is required from industry to clarify what part they will play in the energy mix.

Heat
Forum for Renewable Energy Development Scotland (FREDS) recommends that the Scottish Government urgently conduct analysis on the size of the heat market to inform target-setting. HIE sits on this group and supports this position as it will help bring some focus and direction to supporting measures. Currently, proposed changes to the Renewables Obligation Order will award Combined Heat & Power (CHP) plants double ROCs for their electricity contribution which will be revised in light of any specific heat incentives introduced in the future.

Transport
- There is a requirement for a balanced debate on biofuels and the potential for enhanced use where fuel is derived from sustainable sources.
- Should biofuels be introduced as a viable supplement to fossil fuels; they will highlight the requirement for significant infrastructure investment in rural Scotland to support their adoption.
- Rail electrification should be considered further as a potential high energy user in areas of high renewable energy resource.

Linked to these three key issues are the following areas of enquiry which HIE welcomes the opportunity to respond to:

1. Which energy sectors offer the best prospects for economic growth and reduced carbon emissions, and how should these be secured?

The Highlands and Islands has a long association with the oil and gas industry, and we recognise that the current buoyancy of this sector will continue to bring growth opportunities for inspection, repair, maintenance, and engineering businesses in the Highlands and Islands.

In terms of economic growth and reducing carbon emissions, however, the renewable energy sector offers significant prospects for the Highlands and Islands. It incorporates activities across a wide range of sectors, including engineering, distribution, manufacturing, project management, transportation, and electrical works. Average wages across these sectors compare well with average for the area as a whole, demonstrating that the renewable energy activity is already having a significant impact on GDP in the Highlands and Islands.
The renewable electricity generating sector is perhaps the most mature, especially electricity generation from wind and hydro. These sectors, therefore, offer the best prospects for immediate growth, with wind energy (on-shore and off-shore) currently thought to offer the largest near term growth prospects. There are also opportunities to export home-grown expertise in these sectors.

Energy efficiency gains are often not technically difficult and offer another major area of near-term carbon reductions.

The marine sector is a key potential growth area, but represents a medium to long term investment rather than near-term carbon savings.

2. What are the hindrances to determining and delivering Scotland’s energy future?

Barriers to renewable electricity:
- The scarcity of available grid capacity
- Transmission charging methodology: the current system discriminates against renewable energy generators in peripheral areas where the bulk of potential for renewables reside.
- In the marine sector, progress is in part a function of the level of investment: continued investment is required if Scotland is to exploit its marine potential from design through supply chain, installation, operation/generation and maintenance.
  - Scottish Government has sent some very strong, clear and welcome signals to industry that Scotland is open for business in marine renewables through initiatives such as the Marine Supply Obligation (MSO) which requires a quota of Renewables Obligation Certificates (ROCs) be derived from marine renewables. This was introduced in a climate of technology neutral ROCs (all renewable generation technologies receive 1 ROC/MWhr of generation) SG and HIE have always advocated that ROC banding is a more appropriate means of support.
  - SG’s Wave and Tidal Energy Scheme (WaTES) has been successful in supporting the development of nine device developers move towards deployment in Scottish waters.
  - DBERR’s Marine Renewables Deployment Fund (MRDF) is welcome but no developers have been able to satisfy the strict entry criteria to date. HIE suggests that the entry criteria should be modified to more accurately reflect the position of the industry and allow the fund to fulfil its intended purpose of accelerating the development of the marine renewables sector.
- Planning permission is a hurdle in the development process and can act as a barrier in the absence of timely decision and clear planning guidance

Barriers to energy efficiency:
- Reducing electricity consumption is not presently rewarded in the same way as the production of a unit of electricity. The measures taken to
date to secure energy savings have been much softer than equivalent measure to mandate production from various energy sources.

- Building energy standards are not high enough and building contractors often have no incentive to reduce the energy bills of subsequent tenants.
- Institutional barriers where centralised production of energy from a relatively small community of generators is seen as easier than finding the means by which millions of households and businesses can secure energy savings.

3. What is needed in the short and medium-term, particularly from the Scottish Parliament and the Scottish, UK and other governments (such as the EU) to deliver Scotland's energy future?

**Electricity Grid**
The Highlands and Islands face massive grid access constraints and the sustainable and economically advantageous development of the renewable energy industry is reliant on these constraints being addressed. If Scotland is to achieve its renewable electricity generation targets by 2020 and become an energy exporter by 2050, substantial investment in grid infrastructure must be consented by the authorities.

The work arising from the Transmission Access Review is valuable in that it will facilitate the best use of existing transmission network capacity, which could mean reallocating and/or sharing the existing capacity, and building more transmission capacity. Implementation of some of the TAR proposals would help bring incremental improvement to a highly constrained system.

The UK’s three transmission network owners are collaborating on a piece of work to plan the investment and upgrades required of the grid to deliver 2020 energy targets. In every scenario the Beauly to Denny upgrade is labelled as ‘pre-requisite’ in that no development can take place in the North of Scotland without it. We suggest that the Committee should give it their full support. There is a key role for government in strategic planning and investment. Specifically in Scotland in the inclusion of grid infrastructure in the Strategic Planning Framework, and helping to provide more information to the public as and when strategic upgrades move from the drawing board to concrete projects. Scottish Government (SG) is already working with industry on some of these issues, and its interest and influence is very helpful and should be maintained to keep abreast of evolving proposals. SG is also taking the initiative though studies on east and west coast interconnections and HIE welcomes the opportunity to input to these studies.

Governments can also help with investment through promotion at the European level of the benefits of strategic upgrades and interconnections, and helping to pull investment which might be well positioned to make early investments on behalf of future projects.
Also underway is a UK government workstream concentrating on 2020-30 targets and some strategic planning for major changes in the makeup and topology of the national grid.

Transmission Charging
HIE believes that the current transmission charging methodology discriminates against renewable energy generators in the Highlands & Islands of Scotland and contravenes EU Directive 2001/77 EC on the promotion of fair transmission and distribution charging for renewable energy generation. There is an identified need for a fair, transparent and timely transmission charging regime. Renewables represent 2% of installed capacity but contribute 16% of transmission charges. The current regime is also highly volatile and uncertainty over charges has a considerable, negative impact on project economics and investor confidence.

SG has lobbied Ofgem repeatedly on this and is leading on the development of an alternative transmission charging methodology proposal to be submitted to National Grid and Ofgem. HIE suggests that the committee should support this categorically.

Energy Efficiency
A recent study commissioned by HIE found that over half of Scotland’s houses do not perform well in energy efficiency terms.¹

Key findings of the study included:- rural areas have a proportionately lower level of energy efficient housing stock; gas centrally heated houses tend to score higher than those using electricity for heating, and substantially more so than those using oil or solid fuels for heating; and urban dwellings score higher than rural dwellings. Based on these findings, it is clear that households in the Highlands and Islands will demonstrate poor thermal efficiency in comparison to many other regions of Scotland.

At the UK level there is a new scheme (Carbon Emission Reduction Target) to replace the energy efficiency commitment, funded by a levy on consumer bills. The CERT will require someone to monitor implementation of the new mechanism and ensure that improvements are realised through working with the supply companies.

The UK government is also implementing the Carbon Reduction Commitment (CRC) for the sectors not currently captured through other energy efficiency schemes, for those organisations where participation costs will be outweighed by the energy savings.

Consideration should be given to support for a stronger energy saving market-based mechanism which promotes energy savings on the basis of a cost-effective means of securing carbon emissions as opposed to the UK government's need for energy savings to be cost-neutral.

¹ HIE, Feb 2008. “Fuel Poverty in Great Britain, Germany, Denmark and Spain – relation to grid charging and renewable energy.”
SG and local authorities can contribute more to energy efficiency through strengthening building standards and funding training programmes for those working in the building sector. New-build building standards in line with Scandinavian countries would also improve through measures that would incentivise the building industry to invest in energy saving measures. Unless the a building is designed and built by the tenant, there are no such incentives and the number one driver is build cost, often at the expense of a tenant's energy bills.

Planning
Implementing the National Planning Framework as a dynamic planning instrument rather than a static document will be helpful for the public to remain appraised of strategic electricity network upgrade plans as they evolve. Regular updates to the framework are planned and welcomed in order to achieve this dynamism. SG has put the onus on and is supporting local authorities to produce supplementary guidance on preferred and constrained areas which should further reduce areas of contention in the planning process.

SG has stated a target of 9 months for consenting (or otherwise) projects that come to them through section 36. This is a bold and welcome move. However, there remains a job to do to change the perception that Scotland’s planning environment is embracing of renewable energy development.

4. How can demand for energy be reduced in Scotland?

The technical means to reduce energy demand are well known. A degree of policy support will be required to ensure these are implemented.

5. How can the energy sector deliver the kind of reductions in greenhouse gas emissions that the Scottish Government wants to see?

The market place is well positioned, through existing technologies to deliver on much of the Scottish Government's targets. Continued private and public sector investment and support for emerging technologies, combined with a streamlined consenting process and upgraded transmission infrastructure are the key requirements of industry to contribute to the balance and to achieve targeted reductions in carbon emissions.

6. How can energy supplies be secured at a price which is affordable?
No definition of affordable has been proffered and there is no evidence that future energy supplies can indeed be secured for any price which the Committee might define as affordable. In practice we have taken this to mean 'not much higher than energy prices would be, if there were no requirements to increase renewable generation and reduce atmospheric emissions'. Continued investment and policy & regulatory support is required to stimulate the development of a broad range of renewable energy generation to the point where they become commercially viable without subsidy. Ofgem has a primary driver of affordability and energy costs to end users and one of the
key issues they flag up with renewable energy development is the constraint costs for existing grid users (chiefly traditional thermo generators but RE generators will become increasingly affected in future years). By encouraging a range of technologies with different inputs and intermittencies; constraint costs for balancing plant can be reduced to minimum levels.

7. How can economic benefits from Scotland's energy industries and the development of clean technologies be maximised?

The renewable energy sector in the Highlands and Islands incorporates activities across a wide range of sectors, including engineering, distribution, manufacturing, project management, transportation and electrical works and involves occupations ranging from production workers, technicians and project managers to research and development.

In the near term, supply chain opportunities are mainly in support of the on-shore wind market. There are already a number of local businesses of international calibre operating in the sector, in civil engineering, craneage, specialised haulage and installation. HIE has made considerable investment in improving facilities at Arnish Point Business Park (on the Isle of Lewis), and in supporting companies such as Vestas Celtic. There also remains opportunities for manufacturing of blades, assembly of turbines, operations and maintenance support and refurbishment as projects come to the end of their life.

Local businesses are also involved in the design and manufacture of several prototype devices for wave and tidal deployment, recognising the potential for future involvement in mass scale production once such devices become proven.

Realising these opportunities will depend on a number of factors. Ensuring a supply of appropriately skilled labour will be essential. It will be important for local agencies and training suppliers, at all levels, to work closely with the Sector Skills Councils and developers to ensure that skills shortages and/or gaps do not delay developments and facilities are available locally to capitalise on opportunities.

Confidence in the market is also key, but very difficult to achieve, due to on-shore and off-shore wind projects being held up because of financial, consenting or technical difficulties, and the cyclical and uncertain nature of the market.

Opportunities exist for communities to derive economic benefit from the siting of energy generation in their area by way of community benefit payments from developers and community ownership of schemes.

8. What are examples of best practice in Scotland and elsewhere, particularly focussing on low-carbon solutions and covering electricity, heat and transport?
Heat
• A District Heating Scheme in Lerwick fed by domestic and commercial waste from Shetland, Orkney and the offshore oil industry. Shetland Heat Energy and Power and Shetland Islands council are now looking into the feasibility of smaller distribution schemes using CHP, wind power and thermal storage. http://www.sheap-ltd.co.uk/

• A district heating scheme in Aviemore supported by the Highlands & Islands Community Energy Company (HICEC) and based on wood chips.

Transport
• There are second and third generation biofuels based on plants or cultures which do not rely on agricultural land – for instance the production of biofuels from algae. These are being researched at the Scottish Association for Marine Science by Oban: http://www.sams.ac.uk/research/research-themes/marine-renewable-energy-research/the-renewables-team?searchterm=algae+biofuel

• The Forestry Commission has trialled up to 100% biodiesel fuels in its vehicles, with local sourcing of vegetable-based fuels from a Findhorn-based supplier. http://www.forestry.gov.uk/forestry/inf6gukz6

• The Environmental Research Institute based in Caithness has conducted research into the use of distillates as liquid fuel for combustion engines. http://www.erionline.co.uk/

• A wind-powered electric car on Westray which can be charged at wind turbines on the island, and via a plug point. The car has a range of approximately 50 miles and a maximum speed of 55mph. http://www.westraypapawestray.co.uk/news_archives/index.php

• A fuel cell car as part of the PURE project on Unst http://www.pure.shetland.co.uk/html/index.html

• A proposed fuel cell car using hydrogen produced from an anaerobic digester as part of the H2 Seed project in the Western Isles http://www.hydrogenhebrides.com/energy_innovation_zone/5,1,14514,1540.html

This submission has been prepared by Highlands and Islands Enterprise in conjunction with the following local authorities:
Shetland Islands Council
Orkney Islands Council
Comhairle Nan Eilean Siar
Highland Council
Moray Council
Argyll & Bute Council
NATIONAL GRID

Introduction

1. National Grid is pleased to have this opportunity to contribute to the Committee’s call for evidence. We are committed to working with the UK Government, the Scottish Government and the Welsh Assembly to develop policies to meet the common objectives of increasing renewable energy generation and reducing emissions.

2. In our role as the electricity System Operator for Great Britain (GBSO) and transmission network owner in England and Wales, we have an interest in both the operational issues associated with the future energy mix and the GB transmission reinforcements that will be required to meet the future energy mix. In this regard, we have been developing scenarios of the potential generation mix in 2020 and beyond and are examining both the operational and transmission reinforcement issues associated with those scenarios.

3. In relation to transmission reinforcements we are working with the Scottish transmission licensees to identify the range of potential transmission reinforcements that would be required across Great Britain under these scenarios. An initial report will be presented to the Electricity Networks Steering Group (jointly chaired by officials from BERR and Ofgem) at the end of October with a final report expected by the end of January 2009.

4. In addition to the technical studies referred to above both National Grid and the Scottish transmission licensees are in discussion with Ofgem to examine new mechanisms to facilitate the timely delivery of transmission investment. Under the current regulatory regime transmission reinforcements, in certain circumstances, are lagging behind the preferred connection dates of renewable generators.

5. Delays in securing planning consent are the most significant block to the timely connection of projects and the development of network capacity. National Grid fully supports the aims of Scottish planning reform process and would urge the Scottish Government to continue down the path of adopting planning reforms contained in the Westminster Planning Bill proposed for England and Wales. We are also actively taking forward reforms to the transmission access regime to help facilitate the connection of renewable generation.

6. Scotland, along with the rest of the UK faces certain shared issues such as declining domestic oil and gas reserves. The UK’s requirement for increased gas imports has resulted in the construction or near completion of numerous import projects. In aggregate the capacity for these far exceeds the UK’s projected import requirements, although capacity may not always reflect operational experience and expectations of future use. An analysis of longer term security suggests a requirement, by about 2015, for new importation projects above those under construction to ensure appropriate security standards. The development of new gas storage facilities will also enhance security of supply.
7. National Grid encourages the production of bio-methane, a renewable energy source with significant potential to supply renewable heat. As a greenhouse gas, methane is twenty-three times more potent than carbon dioxide. Consequently, whilst volumes of biogas may initially be modest, there would be a disproportionate and favourable impact on emissions. There are currently disincentives to introduce the bio-methane into the gas distribution system relative to burning it on-site. This imbalance should be addressed in order that bio-methane can be conveyed to a location where, for example it could be burned in a combined heat and power system.

8. Finally, the work being undertaken by National Grid on future scenarios to meet renewable and emissions targets includes analysis on the potential contribution from both the Heat and Transport sectors as well as electricity. We will be providing a full response to the Government’s UK Renewable Energy Strategy consultation published in June, next month. We believe many of the areas contained in that response will be equally relevant to this call for evidence. It is clear however that increased energy efficiency has a major role to play in meeting the objectives and we see the roll out of smart metering as being integral to securing the necessary improvements in energy efficiency.

Overview of National Grid

9. National Grid is a leading international energy infrastructure business. Our specific role in Scotland is described below.

Gas Transmission

National Grid owns and operates the high pressure gas transmission system in Scotland, England and Wales. National Grid has a duty to develop and maintain an efficient, co-ordinated and economical transmission system for the conveyance of gas and to respond to requests for new gas supplies in certain circumstances. Separate regional companies own and operate the lower pressure gas distribution networks that distribute gas to homes and businesses throughout Scotland.

Electricity Transmission

Scottish and Southern Energy and Scottish Power own and maintain the electricity transmission network in Scotland. They each hold a licence under the Electricity Act 1989, and have a statutory duty to develop and maintain an efficient, co-ordinated and economical transmission system of electricity and to facilitate competition in the supply and generation of electricity. The high voltage transmission network provides electricity supplies from generating stations to local distribution companies.

National Grid operates the electricity transmission network across Great Britain and also owns and maintains the network in England and Wales just as Scottish and Southern Energy and Scottish Power do in Scotland. As the system operator for the transmission network across Great Britain, National Grid’s role includes residual balancing of supply and demand, outage co-ordination and market facilitation. This supports Scottish Power
and Scottish and Southern Energy in delivering their roles and responsibilities as the licence holders in Scotland.

**Delivering Scotland’s energy future**

10. National Grid welcomes and supports Government policies to facilitate investment in renewable energy and to address carbon emissions, and we take a proactive role in contributing to the debate on the subject amongst decision makers. Indeed, in respect of climate change, there are a number of clear targets, set by the European, UK and Scottish Governments. The EU wide target for 20% of all energy to be generated from renewable sources by 2020 is expected to translate to around 15% for the UK. The UK Government has a target of reducing CO2 emissions by 60% in 2050, and the Scottish Government has set an 80% reduction target to be met in the same timescale. In addition, Scotland has a target to generate 50% of the country’s electricity from renewables by 2020, with an interim target of 31% by 2011.

11. The current Great Britain generation mix is heavily reliant on fossil fuels; coal and gas currently provide over 70% of the primary fuel source for electricity generation. Electricity sourced from renewables accounts for only around 2% of total energy (5% of electricity demand); this highlights the magnitude of the challenge ahead.

12. In order to best study how Scotland and the UK can meet these targets, National Grid is developing a number of scenarios. One such scenario is ‘Gone Green’, which describes an energy future which will meet the UK Government’s targets. A scenario is a plausible and self-consistent picture of a chosen future, which can be used to inform forward planning. Specifically, National Grid’s scenarios contain judgements and views that would be inappropriate to include in the Seven Year Statement, which is based solely on the contracted view of generation.

13. National Grid’s ‘Gone Green’ scenario assumes all plausible levers are pulled in the support of renewable generation. This scenario assumes 29GW of transmission connected wind in the UK (onshore and offshore) by 2020 with a contribution of 10.7GW of onshore wind in Scotland. The joint technical studies with the Scottish transmission licensees are also considering lower contributions of wind from Scotland and the impact this would have on meeting the UK targets.

14. The Gone Green scenario also takes into account the closure of 15 GW of oil and coal fired-plant under the Large Combustion Plant Directive and the closure of 7.5 GW of nuclear capacity. Under this UK scenario, ‘the energy gap’ is filled with 11GW of new gas-fired generation and 3GW of new Nuclear stations in England, in addition to the 29GW of wind. The studies also assume 3GW of new coal in England with some CCS.

15. The scenario highlights Scotland’s pivotal role in meeting both the UK and the EU’s climate change targets. To achieve the EU target it is estimated that up to 35% to 40% of the UK’s electricity will need to be generated from renewable sources in the UK by 2020. We estimate in Scotland, 10.7
GW of onshore wind will be required, with up to 18GW of offshore wind in the UK as a whole.

16. It can be seen from the paragraphs above that the scenarios examine the total generation mix, taking into account plant closures as well as new build. It is the total generation mix that will be important in both determining the appropriate transmission reinforcements and understanding the challenges of operating the GB system. Renewables will undoubtedly have a pivotal role to play in Scotland’s future energy mix but there should also be clarity on policies over the future of other sources of electricity such as nuclear, gas and coal. Due to the variability of wind, these other sources of generation will continue to be important in ensuring system reliability and security of supply.

**Challenge for the Scottish Government**

**Planning**

17. Delays in securing planning consent are the most significant block to the timely connection of projects and the development of network capacity to enable this. Of contracted wind projects in Scotland, only 17% have consents. Across Great Britain, only 23% have consents. National Grid supports the Scottish Government’s intention to provide a more proportionate approach for dealing with planning applications, in order to increase efficiency and effectiveness through allocating all developments requiring planning permission into three groups: national development, major development and local development. It is vital that the Scottish Government continue to include ‘grid reinforcements to support renewable energy developments’ in the list of designated national developments to further facilitate the deployment of renewables.

18. Due to the cross-border nature of the gas and electricity transmission assets that we own and operate, National Grid strongly supports the Scottish Government’s commitment to work with the UK Government, the Welsh Assembly and the English regions on spatial planning matters of common interest. However, National Grid is concerned that joint determination of cross-border projects will add complexity and potential delay. National Grid is keen to be involved in working through the practicalities and consequences of joint determination along with all affected parties. Should joint determination remain the most effective solution, National Grid would be happy to provide support in ensuring that this is as simple, clear for all and timely as possible.

19. National Grid fully supports the planning reforms contained in the Westminster Planning Bill and urges the Scottish Government to continue down the path of adopting a similar regime to that proposed in England and Wales.

**Skills**

20. The UK faces a shortage of quality Science, Technology, Engineering and Mathematics (STEM) graduates and post-graduates which must be urgently addressed in order to remain globally competitive. With the dual issues of ensuring security of supply and tackling climate change, the energy sector faces a challenge of acquiring and retaining the skills...
needed in order to (i) extend networks offshore and (ii) balance an energy system with a greater proportion of renewable and low carbon generation.

**National Grid's role in speeding up connection of new low carbon generation**

21. Throughout Great Britain, National Grid is currently managing 17 GW of signed connection contracts for new renewable generation projects – 10 GW of which is in Scotland and 7GW is in England and Wales. In total 50 GW of new generation have signed connection agreements with National Grid which is significant in comparison to the 77GW of generation capacity currently connected to the transmission system.

22. In 2005, the UK Government introduced the British Electricity Transmission and Trading Arrangements (BETTA) to harmonise the different arrangements under which the wholesale market operated in England, Wales and Scotland. The transition to BETTA and in particular, the transition of Scottish connection contracts to the new GB framework agreements resulted in an unprecedented number of speculative applications to connect renewables to the transmission system.

23. Projects are normally offered connection dates on the basis of their application date rather than project status. National Grid has since moved to actively managing applications for connections to ensure that projects that are ready to proceed are not being held back by those without planning permission. National Grid has developed this approach alongside other framework changes. These include:

- Making information about projects and associated transmission works more transparent. This enables generation projects to make decisions on where to connect.

- A new approach for the provision of financial securities to trigger the start of transmission investment in order to allow projects to connect earlier. National Grid is consulting with industry over these proposals during 2008.

- Helping to reduce the upfront costs that individual projects face. By clustering projects together, the cost of triggering network investment can be spread over several projects.

We believe there are now a range of short-term options available that should facilitate the connection of renewable generation in advance of delivering the wider transmission reinforcements. These options are covered in the recently published Transmission Access Review – Final Report.

**Reform of the existing transmission access rights**

24. Transmission access arrangements dictate the transmission capacity available for a generator to use. As wind, in particular, does not require access all the time, National Grid is committed to developing new transmission access arrangements. These improvements will make the
best use of available capacity, and facilitate the connection of additional renewable generation.

25. National Grid is playing a pivotal role in driving this forward with BERR and Ofgem within an industry wide discussion as part of the Transmission Access Review (TAR).

26. In June 2008, Ofgem published their final report on the TAR. The report welcomes changes to the existing arrangements that aim to make the best use of existing capacity while incremental system reinforcements are underway by introducing options and flexibility for generators in the way they connect to the system.

27. National Grid has put forward modifications to several industry codes. Amendment proposals will be delivered to Ofgem for determination by the end of 2008, with the aim of implementing any reforms by April 2010.

**Investment in the transmission system**

28. If the Scottish Government is to achieve its target to generate 50% of Scotland’s electricity from renewables by 2020, and the interim target of 31% by 2011, significant investment will be required to reconfigure the transmission network. In areas where renewables especially wind are most abundant, the network either does not exist or has only been built to serve small amounts of generation, such as the Highlands and Islands of Scotland. The investment will be for, both connection of new generation and upgrading the wider system to accommodate larger flows to demand centres.

29. The potential output of Scotland’s renewable energy resources is considerably greater than current Scottish consumption and therefore the potential for export is substantial – and, as stated earlier, key to meeting the UK and EU targets.

30. National Grid is undertaking a joint study with the Scottish transmission system owners to work out costs and options for achieving the 2020 renewables target. Analysis of required investment discussed in this response is based on the preliminary findings of this ongoing work.

31. Given the current volumes of renewable generation seeking connection to the GB transmission system and projected volumes to meet 2020 targets there is an inescapable requirement for reinforcement of the main interconnected transmission system for the bulk transfer of electrical energy across Great Britain.

32. There is potential for reinforcement of the existing onshore system without new overhead lines or subsea cables; however, in parts of GB, subject to assumptions concerning the disposition of new generation and plant closures, additional circuits are likely to be required to accommodate the levels of renewable generation associated with meeting 2020 targets.

33. Extended subsea cable circuits could play a significant part in the long term future GB of the transmission system and are likely to be required as well as upgrades to the existing onshore system. Previously identified onshore reinforcements and those in planning such as Beaulang-Denny will not therefore be rendered redundant if additional subsea circuits are built.
34. In order to ensure that the infrastructure is in place when new renewables are ready to connect, National Grid is working with Ofgem and BERR to put together an investment model which will allow the company to invest in the network ahead of time.

35. These strategic grid reinforcements will be fundamental in helping to provide the transmission capacity necessary to realise the potential of Scotland’s renewable energy resources, therefore helping to meet the Scottish Government’s target for electricity generated from renewables, to minimise system constraint costs and to maintain long-term security of electricity supply.

Technologies to deliver energy efficiency and energy storage

36. National Grid strongly supports the roll out of smart metering. We believe that smart metering could deliver significant energy efficiency and carbon abatement savings. Smart meters are the next generation of electricity and gas meters. Through remote two-way communication technology, much like that used in mobile phones, they will bring about the end of estimated bills and meter reads, provide the platform for the development of a much greater choice in energy tariffs, and enable consumers to be informed to make choices about how much energy they use. Smart metering can also play a major role in tackling fuel poverty by changing consumer behaviour leading to a reduction in individual consumption which will also help address climate change.

37. National Grid is currently assessing the potential contribution that a range of other smart technologies could make in facilitating renewable generation once smart metering is in place. For example, demand management technologies – that allow electric appliances, such as refrigerators and air conditioning units, to be automatically turned off or down in response to changes in supply and demand - are now becoming available. These technologies could provide a more efficient and lower carbon, solution to the intermittency associated with renewable generation than the current approach of using conventional stand-by generation. Rather than calling on stand-by generation, National Grid could remotely and instantaneously reduce demand from these appliances in order to dynamically balance supply and demand.

Declining Domestic gas reserves

38. Scotland, along with the rest of the UK faces certain shared issues such as declining domestic oil and gas reserves. National Grid in its Gas transmission role consults with the industry on gas supply and demand forecasts. Our forecasts for gas supply this year continue to be built on declining UKCS production and increasing import dependency.

39. The UK’s requirement for increased quantities of imports has resulted in the construction or near completion of numerous import projects to supplement existing importation routes. In aggregate the capacity for these far exceeds the UK’s projected import requirements. To reflect that import capacity may not result in physical flows we have started to report import capacities on a ‘de-rated’ basis to reflect possible use based on
operational experience and expectations of future use rather than nameplate capacity.

40. In terms of assessing longer term security we have analysed the loss of an import source, namely supplies from Norway, the Continent or LNG. The outcome suggests that new importation projects above those under construction are required by about 2015 to ensure appropriate security standards. The development of new storage will also enhance security; however most of these are currently proposals without full planning consents rather than being constructed.

### Role of renewable heat and transport

41. In responding to the UK Government’s Renewable Energy Strategy Consultation, National grid expects to explore in greater detail the initial conclusions from its scenario analysis. As stated earlier, these conclusions are expected to be relevant to all parts of the UK. However, presented here are some of the issues which have begun to emerge.

42. Domestic and commercial heating accounts for nearly 50% of the UK’s total emissions. Policies around the decarbonisation of heat need to be developed in order to continue progress towards the targets. National Grid’s energy scenarios are holistic, and include contributions from the electricity, heat and transport sectors. Our work to date confirms the view that, whilst transmission connected renewable energy plays a significant role, it will still be insufficient to meet the targets on its own. In respect of the 15% renewables target, there must also be a step change in the amount of renewable heat generated and in the contribution from transport.

43. In the existing housing stock, the most effective and economic contribution to mitigating carbon emissions is to reduce the demand for heat by installing appropriate insulation. A recent report by the Department for Communities and Local Government, ordered insulation systems by cost effectiveness. At the top of the list was the lagging of domestic hot water cylinders, followed by cavity wall and loft insulation.

44. A similar ‘no regret’ action to take is to encourage the production of biomethane. This is a renewable energy source with similar properties to natural gas which has significant potential to supply renewable heat and also to support the development of renewable electricity. Biogas, and in some circumstances a high quality fertiliser, is produced by recycling food and other waste via anaerobic digestion or gasification. The biogas process is significantly more environmentally friendly than most incineration or landfill schemes. This is because it captures the methane that would otherwise be released to the atmosphere and converts it to carbon dioxide and water. As a greenhouse gas, methane is twenty three times more potent than carbon dioxide. Consequently, whilst volumes of biogas may initially be modest, there would be a disproportionate and favourable impact on emissions.

45. In the UK, biogas producers are currently incentivised to use biogas to generate electricity locally in order to obtain a subsidy via Renewables
Obligation Certificates (ROCs). In many cases, this disincentivises optimum use of the biogas because there is little need for the heat at the biogas production site. If the gas were injected into the distribution network, it could be used more efficiently; either in a conventional boiler or in a combined heat and power system located where there is a need for both heat and electricity. Therefore it is important that the biogas producer is able to earn at least an equivalent subsidy for introducing biogas into the distribution network, particularly as this would generally represent a more efficient use for the gas.

46. Newer housing stock, subject to current and proposed building regulations, will already be more energy efficient than much of the existing housing stock. There are many technologies, other than highly efficient condensing boilers which can be used to provide heat to these buildings. As mentioned above, district combined heat and power schemes, heat pumps and solar thermal devices may all play a part. Micro-CHP systems, and other microgeneration technologies may also contribute to both heat and renewable electricity. The National Grid scenarios, and the energy networks which are derived from them, will provide the necessary support to allow emerging technologies to contribute to a diverse generation mix. However, as with any energy technology, care must be taken to evaluate the relative carbon emissions and economics before committing either to investment or policy initiatives.

47. Transport (which currently includes emissions from aviation and shipping) accounts for a significant portion of carbon emissions. Renewable alternatives to aviation fuel are probably decades away, which leaves the ‘renewable burden’ to be carried by vehicles partially fuelled by biofuels. However, new technologies, such as electric vehicles (EVs) or plug in hybrid electric vehicles (PHEVs) are of the order of twice as efficient as the petrol counterparts. Our understanding of the societal, network and emissions impacts is still evolving.
THE CROWN ESTATE

THE CROWN ESTATE’S ROLE IN ENERGY

The Crown Estate recognises that it has an important role in delivering Scotland’s renewable energy objectives. As the landowner of almost all the seabed out to 12 nautical miles, and with rights on energy development out to 200 nautical miles we have responsibility for providing site options and leases for consented offshore wind, wave and tidal energy projects around Scotland and indeed the rest of the UK.

We are working with both the Scottish Government and the UK Government in advancing projects that have the potential to deliver significant energy supply such as Round 3 of Offshore Wind – intended to deliver 25GW of energy for the UK - and Scottish Offshore Wind which could deliver further energy from Scottish territorial waters by 2012.

We are also working to support the commercialisation of marine technologies in Scotland and investing in research on the vital improvements to access to the transmission network that would be needed to ensure the targets of the Scottish Government on renewable energy are met.

The Crown Estate welcomes the opportunity to contribute to the Committee’s Inquiry, given the need for strategic planning on how Scotland will meet its future energy needs, in the context of climate change. Our response is designed to inform and show how our activities feed into the future energy plans for Scotland.

ABOUT THE CROWN ESTATE

The Crown Estate in Scotland owns and manages around 50% of the foreshore and beds of tidal rivers, together with almost all the seabed out to the 12 nautical mile limit.

As landowner of the seabed The Crown Estate has a key role in the delivery of offshore wind, wave and tidal generation projects through the granting of site options and leases.

There is approximately £20m of investment proposals in renewable energy in progress across The Crown Estate in Scotland.

In Scotland The Crown Estate has supported innovative energy initiatives, both stimulating and actively investing in the development of offshore renewable and alternative energy for nearly 10 years.

This response addresses aspects of two of the three Key Issues identified by the Committee:

*What type of future is possible in Scotland in terms of the energy production and distribution?*
**How can this future be delivered in Scotland and how will we meet all the various targets and obligations?**

The Crown Estate is committed to sustainable development and to working in Scotland, with the Scottish Parliament and the Scottish Government, to help meet the twin challenges of securing the energy needs of the Scottish people and reduction in greenhouse gas emissions so as to minimise the magnitude and impacts of future climate change. The Crown Estate believes that the ambitions in Scotland to secure future energy supplies, which will inevitably involve an expansion of marine renewable energies and other measures, are compatible with the aspirations for sustainable management and protection of Scotland’s seas, as contained within the consultation on Scotland’s first Marine Bill.

The Crown Estate is active in renewable energy in Scotland across a broad front. This response to the Committee Inquiry is designed to inform and show how these broadly-based activities feed into the future energy plans for Scotland. Progress with and contributions to the development of energy supply and low carbon options is given below against a series of headings relating to energy sectors.

**Offshore Wind Power Generation**

On 10 December 2007, the UK Government announced the commencement of a Strategic Environmental Assessment (SEA) to examine 25GW of additional UK offshore wind energy generation capacity to be installed by 2020. This follows the 8GW planned for Rounds 1 and 2. On 4 June 2008, The Crown Estate announced proposals for the third round of offshore windfarm leasing. Within this process, The Crown Estate is taking a more prominent role, where it will co-invest with developers, combining the technical experience of the offshore wind industry with efficiencies generated by The Crown Estate’s access to resources and stakeholders. The Crown Estate’s role will revolve around programme delivery and zonal contract management; the partners will work with The Crown Estate to identify suitable windfarm sites within each zone and thereafter focus on addressing delivery of specific sites. The Crown Estate will not be involved in the construction or operation of windfarm sites.

Scottish territorial waters are not included within Round 3 although Scottish waters beyond 12 nautical miles are included – two potential development zones have been identified, based on economic potential. The Crown Estate is undertaking a separate process to allocate wind farm sites within Scottish territorial waters – see below.

**Position and Progress on Scottish Offshore Wind Power in Territorial Waters**

To date, two wind farm projects have been allocated within Scottish territorial waters at Robin Rigg in the Solway Firth. These Round 1 projects are adjacent and together have an installed capacity of 60MW. Construction is currently underway and the projects will become operational during 2009.
Discussions with developers and the Scottish Government suggest that scope for wind farm development within Scottish territorial waters may be limited, mainly due to the deep waters encountered close to the shoreline. Scottish territorial waters are therefore not being included in the SEA for Round 3 and The Crown Estate has embarked upon a separate process to allocate sites in Scottish territorial waters on a case by case basis.

The Crown Estate sought initial expressions of interest from potential wind farm developers interested in projects in Scottish territorial waters during May 2008. Application packs were sent to all registered developers during July and completed applications are to be returned to The Crown Estate by October 10th 2008. Site allocations will be made by the end of December 2008. Developers will then need to apply for statutory consents from the Scottish Government and, if successful, the first sites could be operational by 2012.

Transmission Network
A further necessary development will be improving access to the transmission network for new generation. One option that requires close consideration is that of offshore transmission which would help to realise the offshore potential in wave, wind and tidal power as they enter the next phase of commercialisation, whilst minimising the impact of increasing onshore transmission lines. Developing offshore transmission links would allow Scottish renewable energy projects, including those in remote areas such as the Western Isles, to improve access to the wider UK and European markets. These access improvements will be required if the Scottish Government’s targets for renewable energy are to be met.

In 2007, The Crown Estate commissioned research into the feasibility of an East Coast interconnector that would allow energy generated in Shetland and the Western Isles to access markets throughout Scotland, the UK and indeed Europe. The report concluded that such a project could be economically viable and would allow new renewable energy projects to connect to the national grid. Further work would also be required to improve the onshore transmission network.

The core of the system would cost up to £1.7bn, with the total network costing around £4.8bn by 2020. The Stern Review (2006) of the economics of climate change showed that investment in clean energy can repay itself several times over, and the proposed east coast connection could also form part of wider European grid interconnection which is currently under consideration. The connection proposal was designed around projections for substantial renewable generation off the coast of northern Scotland, in the region of 5-10GW by 2020.

Following the successful completion of the East Coast Interconnector feasibility study, The Crown Estate has commissioned a further transmission study to consider options for connection of Round 3 offshore wind farms. The study will consider the size and location of the offshore and onshore generation projects, both planned and forecast. It will seek to connect a network topology with sufficient capacity to accumulate and transmit the
power levels required and establish the financial case for an offshore transmission scheme, as the offshore assets will need to be fully utilised to be deemed economic and efficient.

The target for completion of this study is November 2008.

**Wave and Tidal Power Generation**
The Crown Estate recognises that there is significant potential to advance the commercialisation of this technology in Scotland. We are working with partners to move that agenda forward, initially in the Pentland Firth but with an eye on the growing developer interest elsewhere.

**The Wave and Tidal Resource**
The Pentland Firth and surrounding area contains six of the top ten best sites in the UK for tidal power development. While the main focus of attention is on tidal power the area is also attractive to wave power developers. It already contains the EMEC wave and tidal test centre – the first test centre of its type anywhere in the world – and there is potential for the area to become a world class centre of excellence in wave and tidal power development, research, testing and environmental monitoring.

**Key Partners - Pentland Firth Tidal Energy Project**
In 2007 The Pentland Firth Tidal Energy Project was established and was founded on partnership working between the principal agencies in the area. The project partners are The Crown Estate, Highlands and Islands Enterprise (HIE), Highland Council, the Nuclear Decommissioning Authority (NDA) and the Scottish Government. A key consideration for the partnership is how to counteract the rundown of jobs at the Dounreay nuclear site which is the main employer in the area. The extraction of power from the Pentland Firth is seen as an important key to the future prosperity of the area. The Project team will have to overcome the significant socio-economic, technical and environmental issues that face the area if the project is to be judged a success. Working closely with the partnership, stakeholders and the developer community The Crown Estate is confident that the Pentland Firth will become an example of successful marine renewable developments and a focal point from which the industry can further develop.

**Progress, Timescales and Constraints**
It is envisaged that expressions of interest will be sought towards the end of 2008 with sea bed leases being issued in 2009, following a formal application and evaluation process. Good progress has been made to attract developers into the area and some development companies have already started to undertake sea surveys prior to submission of their consent applications. If these consent applications to the Regulator are successful, it is likely that a number of companies will be in a position to deploy their devices in 2010 and 2011. The aspiration of the project is that more than 1GW of power will be extracted from the Pentland Firth by 2020.
Scotland is widely seen as being amongst the world leaders of this technology which is currently in its embryonic stages. Several initiatives developed by the Scottish Government have helped provide this lead and the Scottish Government’s strong stated desire for the uptake of marine renewables in Scotland is reflected in The Crown Estate’s approach to the issues. Of particular importance is:

- Having a Strategic Environment Assessment for wave and tidal power in place;
- Having a nine month target time to determine consent applications, provided that no local planning inquiry is required;
- The developer community is anticipating that the remuneration for Renewable Obligation Certificates will be set at preferential rates in Scotland for this type of technology; and
- Initiatives such as the Saltire prize which can help to attract developers to Scotland.

However, if this lead is not to be lost and the Scottish Government energy targets are to be met, then it is essential that improved access to the National Grid system is implemented within a reasonably tight timeframe for wave and tidal developers. Failure to deliver improved access will inevitably result in the developer companies taking their technology to other locations, possibly abroad. The Crown Estate has been instrumental in seeking to improve grid access for all offshore renewable energies (see above) and will, in conjunction with others, continue to seek early resolution to this problem. Efforts are also underway to attract high energy users to the area to overcome local grid constraint issues.

**Investment in other areas of Scotland**

The Pentland Firth Tidal Energy Project provides an opportunity to focus investment on an area of significant resource, providing a catalyst to achieving a nationally significant contribution to both Scotland's energy targets and economy. The time, effort and resource invested in the development of the wave and tidal energy industries in Scotland by The Crown Estate is significant and seen as a reflection of the great commercial promise represented by these sectors. To date current efforts have been focused on the Pentland Firth but if successful this will translate into future investments elsewhere and lead to the offer of sea bed leases in other parts of Scotland where there is prime resource such as south west Argyll, the Western Isles and Shetland. Most of the above response has focused on tidal power. The Crown Estate will respond in a similar manner to approaches by offshore wave power developers with robust generation devices.

**Pioneering work on our own Estates – Carbon Reduction and Biofuels**

The Crown Estate is committed to excellence in the stewardship of our estates in the context of sustainable development. In addition to the various marine renewable initiatives described above, we are working to pioneer innovative energy solutions on our estates and believe these are initiatives
that could be replicated across Scotland, particularly in small / isolated communities.

The Royal Commission on Environmental Pollution (RCEP) concluded in 2004 that terrestrial biomass should play an important role in the renewable energy generation mixture. When energy crops are used as fuel the carbon does not contribute to net greenhouse gas emissions. Unlike most other renewable energy sources, biomass can be stored and used on demand to give controllable energy and is therefore free from the problem of intermittency. Also, unlike most other sources of renewable energy, biomass offers a source of heat as well as electricity. In fact in the RCEP review, biomass is considered solely as a source of heat and electricity and not as a potential source of transport fuel. The Crown Estate’s work on biomass has followed this trajectory.

The Rural Estate

Within the Rural Estate we have initiated several micro-renewable energy developments during redevelopment of residential property including installation of solar panels and ground source heat systems on our Fochabers estate as exemplars of what can be achieved in rural areas with the application in Scotland of existing low-carbon generation technologies. The Rural Estate also has an active strategic programme and tactical assessment for the development of appropriate micro renewable energy deployment, in collaboration with business partners and our tenants.

We have installed a wood chip boiler heating system in our offices on the Glenlivet estate with the support of Moray Council as part of a demonstration project to help promote wood energy in the north east. We have proactively participated in several forest felling and wood drying trials to assist research into the development of wood energy supply chains, in partnership with the Forestry Commission and as part of the Northern Periphery Programme Northern Woodheat Project.

On our Applegirth estate we have worked to assist farm tenants to investigate opportunities for supplying Short Rotation Coppice willow energy crops to supply the EON biomass plant at Steven’s Croft in Lockerbie, to which we also supply forest residues, and at Fochabers to develop bio-diesel from waste vegetable oil. We have worked closely with Moray Council and Renewable Power Systems to facilitate the development of a biogas, electricity generating scheme at the Nether Dallachy landfill site near Fochabers due for completion in 2009.

The Crown Estate recognises the opportunities for the development of biomass energy and other forms of micro-renewable energy on its rural estate and will continue to work proactively with tenants, local communities, local authorities, public agencies and the private sector to pioneer the development of renewable energy systems.
The Rural Estate is also working proactively with the Edinburgh Centre for Carbon Management to investigate opportunities for carbon mitigation measures through forest management to help meet the climate change challenge. We have been working jointly with the Macaulay Research Institute and the Cairngorms National Park Authority to conduct research into community attitudes to climate change and renewable energy on our Glenlivet estate.

The Marine Estate

The Marine Estate has examined the feasibility of marine biomass (farmed algae - seaweeds), which has the additional benefit that it can be anaerobically digested to produce methane which, in turn, can be used to generate electricity, for heat or for transport.

Marine algae offer a vast renewable energy source for countries around the world that have a suitable coastline available. They are already farmed on a massive scale in the Far East and to a much lesser extent in Europe, primarily in France, and on a research scale in Scotland. Utilising marine as opposed to terrestrial biomass for energy production circumvents the problem of switching agricultural land from food to fuel production. In addition, the production of marine biomass will not be limited by freshwater supplies, another of the contentious issues of increasing terrestrial biofuel production worldwide. Marine algae perform well against traditional terrestrial biomass and the residues are suitable for use as nutrient supplements for agriculture.

If marine biomass is a serious contender for supplying even a small percentage of our energy needs, and if these seaweeds are to be cultured, rather than harvested from the wild, then it has to be accepted that a larger portion of the seas will be ‘farmed’. While culture operations must be subject to their own environmental impact assessment, seaweed farms offer the possibility of increasing local biodiversity as well as removing a proportion of the nutrients which can lead to environmental damage. There is the potential to improve biomass yield and quality through selective plant breeding and for further mechanisation of the culturing process to streamline production and reduce labour costs. The report of The Crown Estate’s feasibility study concludes with 27 recommendations for future work, including the need for practical, development and demonstration projects to carry forward some of the concepts. The Crown Estate is committed to carrying these recommendations forward to further understand the potential to contribute to Scotland’s energy needs, particularly in local energy supplies for remote coastal communities, which will also provide new jobs.

Future Work

Carbon Capture and Storage

The Energy Bill currently proceeding through the Westminster Parliament will, if enacted as currently proposed, confer upon The Crown Estate the rights to the storage of both natural gas (NGS) and carbon dioxide (CCS) under the
seabed on the UK Continental Shelf. The Crown Estate has been preparing for this development for some time, including playing its part in the outcome of the UK Government’s competition for a demonstration post-generation carbon dioxide (CO2) capture CCS scheme. Scotland has extensive resources of coal and also significant coal-fired generation plant (particularly on the Forth). The Stern Review (2006) showed that CCS has a very substantial and important role in achieving carbon reduction targets. The Crown Estate is very keen to work with the Scottish Parliament, Scottish Government and other stakeholders to facilitate the development of CCS in Scotland, so that Scotland’s reserves of coal may be used for future energy production but in a low-carbon ‘clean’ emission mode. The Crown Estate has already invested in geological studies to identify possible safe storage sites around the UK but further detailed work will be required when specific carbon capture projects from designated sources have been identified. This will need partnership working between The Crown Estate, industry and the Scottish Government.

Secure Gas Supplies

For NGS, The Crown Estate’s role in identifying and facilitating the development of appropriate storage sites will contribute to security of that portion of the energy supply which is derived from imported natural gas. Again, The Crown Estate wishes to work with the Scottish Government to achieve the optimum outcomes for Scotland from this energy source.

Delivering the Future

As well as continuing to invest in and build on the many individual initiatives described above, The Crown Estate believes that delivery of a secure energy future for Scotland, based on major renewable generating capacity, would be greatly assisted by the development of an Energy ‘roadmap’ for Scotland. The ‘roadmap’ should:

- Identify how the many strands of the renewables ‘landscape’ might be integrated into a strategic energy plan for Scotland which will deliver security and control against a planned timescale.
- Provide a realistic assessment of what can actually be delivered with the available infrastructure and technologies.
- Indicate where further development of these is required to deliver additional energy security.

Given The Crown Estate’s extensive involvement in renewable energy, it would be very willing to assist with the development of a ‘roadmap’.

Concluding Remarks

- Energy supplies and distribution are an important part of The Crown Estate’s work in Scotland (and in the UK).
• The Crown Estate is involved in the development and facilitation of a very broad and diverse range of energies, with a strong focus on low-carbon, renewable technologies.

• There are excellent prospects for future energy security and reduced carbon emissions in Scotland, but The Crown Estate believes that more detailed strategic planning would assist conversion of these prospects into actual delivery.

• The Crown Estate wishes to work closely with the Scottish Government, Scottish Parliament and other stakeholders to realise the potential for a secure and low-carbon energy future for Scotland.

We would be happy to provide the Committee with further information on any of the points we have raised or copies of any of the reports referred to above, and indeed provide oral evidence to the Committee if that would be of assistance.
COMMUNITY ENERGY SCOTLAND

Background on Community Energy Scotland

Community Energy Scotland is a new Scottish Charity dedicated to developing confidence, resilience and wealth at community level in Scotland through sustainable energy development. We have taken over the work of the Highlands and Islands Community Energy Company (HICEC) and assist community groups throughout Scotland to develop sustainable energy projects.

Our response below is set out according to the Inquiry’s questions.

- What type of future is needed in Scotland in terms of the production, distribution and more efficient use of energy, given the issues of price, security of supply and sustainable development?

Community Energy Scotland would like to see a future where Scotland’s population have a high knowledge of efficient energy use, and a sense of ownership for the energy generation facilities of Scotland. With the pressures of decreasing supplies and increasing costs of fossil fuels, advancing climate change and scheduled power station closures, it is of paramount importance that a major behavioural change is achieved by Scotland’s residents and businesses regarding their awareness of energy resources and efficient energy use. We would hope this future Scotland would have a high proportion of local renewable and efficient embedded generation so that there is a sense of local ownership for the energy used in daily life. This integration of embedded generation will only happen if there are major changes to the regulation of, and mechanisms for acceptance of new generation on the distribution systems and also in the way the distribution system integrates with the transmission system. Just as important is changing the way we use and consume energy. For example, increased energy efficiency in all sectors of Scotland’s economy is required to help stabilise both CO₂ emissions and our demand for energy.

- How can this future be delivered in Scotland and how will we meet all the various targets and obligations?

An integrated approach needs to be taken within Government to get different departments to work together, in conjunction with the UK government, the regulator and the energy industry to ensure that the delivery of embedded and large scale renewable and clean generation, and increased energy efficiency are progressed successfully and quickly.

- What decisions need to be taken, by when and by whom to deliver on Scotland’s energy future?

Key decisions are required from the Scottish Government in terms of streamlining the planning system for renewable projects, especially for ensuring a better proportionality of assessment requirements for small community owned projects.
Key decisions are required from UK and Scottish Government and with potential changes to the planning system to ensure vital grid infrastructure and upgrades are consented and implemented in a timescale that allows embedded and large scale renewable generation to connect and operate to meet EU and Scottish targets.

Following the publication of the FREDS Renewable Heat strategy a scheme to incentivise or promote renewable heat development should be developed by the Scottish Government.

Stability in the current market for renewable energy (through the ROC scheme) is required to maintain investor confidence in renewable projects. Keeping this as a stable mechanism is key to the delivery of renewable projects and will be an important task for both the Scottish and UK Governments.

Direction is required from the Scottish Government on how Scotland will interact with the current UK government Renewable Energy Strategy, which is currently out to consultation.

Linked to these three key issues are the following—

- Which energy sectors offer the best prospects for economic growth and reduced carbon emissions, and how should these be secured?

As Community Energy Scotland we will concentrate in this response on the prospects for community developed and focused energy projects, which we believe have an important role to play in Scotland’s energy future.

There is a growing movement toward community owned and developed energy generation projects- both heat and electricity at the macro and micro scales. Macro-scale income generating projects can bring valuable monetary resources into the community which can be re-invested in facilities and programmes for the community. This resource can, for example, be targeted at reducing fuel poverty in the locality and improving the energy efficiency of the housing stock. Also, if embedded or distributed electrical generation is increased across Scotland, this will, in the long term, reduce the carbon emissions associated with electricity transfer from source to consumer.

Micro scale renewable energy and heat projects are very effective in targeting actual heat and electrical loads of community facilities. The savings in energy costs for communities can be quite significant, although, owing to the undeveloped state of the market, for many of the technologies this is only economically true if the actual installation and purchase of the equipment is grant assisted. As much of our work to date has concentrated on non-urban based projects due to our funding limitations, we can see that urban community projects may be more complex and less able to utilise renewable resources e.g. capturing wind energy in a city environment would be difficult in terms of locating the technology to capture a productive amount of energy. We see that combined heat and power plants (CHP) could be of great interest.
to urban communities with dense housing networks. An increase in district heating systems linked with CHP could greatly increase energy efficiency.

We also see the need for joined up approaches to other activities such as waste treatment. Given that waste and biodegradable waste in particular is a key player in greenhouse gas emissions, and the EU landfill directive and other environmental legislation is forcing change in the treatment of waste, we feel that Anaerobic Digestion will be an important technology to implement in Scotland. Anaerobic digestion (AD) plants will use energy from biodegradable sources, treat waste and produce heat and electricity for the localities around the plant and for integration onto the national grid. Indeed, other European countries are leading the way with AD - the resultant fuel, biogas, is used in Sweden as a vehicle fuel and injected into the national gas grid in Germany. AD plants developed with community involvement could help deliver such projects successfully – given that many AD plants will involve collection of a community’s waste and locating a plant within the community environs.

- What are the hindrances to determining and developing Scotland’s energy future?

To date the major hindrances have been the lengthy and difficult planning process, and the integration of renewable generation projects onto weak electricity networks. The weak state of many parts of the grid system and the complicated regulation surrounding access and connection to the grid system can prove to be an expensive and complicated barrier to the integration of community projects into Scotland’s energy mix. The planning process is cumbersome and there does not appear to be proportionality to information requirements for small community projects compared to large commercial projects.

- What is needed in the short and medium-term, particularly from the Scottish Parliament and the Scottish, UK and other governments (such as the EU), to deliver

A new and determined approach to the integration of renewables onto the grid system is required. Recent consultations by Ofgem on the prioritised integration of renewables onto the grid system have shown that they are minded not to assist such integration as it might discriminate against other users. This is not going to help achieve UK or EU targets or reduce our emissions of greenhouse gases. Other proposals currently being examined by National Grid may possibly result in increased difficulties for small embedded projects trying to integrate onto the distribution systems due to the impact they may have on operational and technical aspects of the transmission system. There needs to be extensive investment in the distribution and transmission networks to allow connection of embedded projects onto the grid systems, and also better and more innovative management of the systems so that embedded generation can become commonplace.

There needs to be an incentive scheme that works to increase the delivery of renewable heat projects, both for small and large scale installations. The FREDS renewable heat strategy has called for an urgent review of financial incentive mechanisms that would stimulate a renewable heat market in Scotland. The Scottish Government now needs to act on this recommendation.
and work with the UK government to ensure that a co-ordinated approach is taken in developing any such schemes.

There needs to be a UK wide review of the whole environmental assessment process associated with the planning permission of new developments– there should be a thorough process of reviewing energy intensity and consumption, and associated carbon emissions or savings.

The permitted development rights regime for micro-generation should be expanded further - the recent consultation by the Scottish Government was quite restrictive in terms of technology spacing and locations.

- How can demand for energy be reduced in Scotland?

First and foremost increasing the awareness of Scotland’s residents of their energy use, energy supply and how they can reduce energy consumption. Subsidising smart meters would be an important step forward for all consumers, and would enable residents and businesses to play an active role in watching their energy consumption.

Better energy efficient standards for all new buildings are required. Improved energy efficient standards for existing buildings undergoing renovation are required– these could be linked into building control approval.

As mentioned above, by increasing the use of district heating the overall demand for heat energy could be reduced through economies of scale and storage.

Scotland and the UK should lead the way in regulating the electrical appliance market – increasing the energy efficient requirements for all appliances could result in a marked decrease in energy consumption.

By reducing non essential lighting of public buildings a significant amount of energy could be saved. Many public buildings are floodlit all night, with little apparent reason.

By increasing public transport links and frequency the public will be incentivised to use public systems and reduce their private vehicle use.

Congestion charging in cities has been shown to significantly reduce the number of cars on city roads, Scotland should enforce this in its major cities.

- How can the energy sector deliver the kind of reductions in greenhouse gas emissions that the Scottish Government wants to see?

By timely delivery of projects – embedded into local networks, and through innovative management of connections- e.g. demand side management, storage, Registered Power Zones etc.

From the community energy sector acquisition of energy generators and debt finance are the key issues facing consented projects. Community projects are small in nature, often remote and often developed by volunteers so their ability to draw in the best financial solutions and competitive technology prices are sometimes compromised. To ensure the value of such projects is maintained, continued financial support and innovative mechanisms for
delivering competitively priced technologies for communities developing such projects will be required.

- How can energy supplies be secured at a price which is affordable?

By increasing the renewable proportion of Scotland’s energy mix, facilitating long term investment in the distribution and transmission networks and reducing energy demand, Scotland should have a sustainable electricity network that will be less sensitive to the volatile costs of imported energy fuels.

By developing a renewable heat market, increasing the proportion of Scotland’s heat demand supplied by renewables and improving the energy efficiency of its building stock Scotland should be better able to maintain affordable heat supplies.

- How can economic benefits from Scotland's energy industries and the development of clean technologies be maximised?

By ensuring that Scotland is a world leader in terms of renewable and clean technology delivery and innovative grid management Scotland could benefit economically attracting custom from a world market. To stimulate the development of top class industries and research facilities will require investment now, and long term commitment from the Government to ensure that such support lasts longer than election terms. Scotland already has a well recognised and leading centre of research at the Institute of Energy and Environment at Strathclyde and should aim to build upon this success, developing centres and industrial partnerships relevant to the other sectors within the Scottish energy industry.

Also important is the economic benefits that arise from the development of local companies specialising in renewable installations, fuel supply and maintenance. By ensuring that there is overall support for renewable installations local development of service companies will continue.

Facilitating innovative solutions between community projects and industry could lead to mutually beneficial outcomes, especially in terms of pre-commercial projects. Where communities are unable to take on the risk of new technologies themselves, the ability to work with an industry partner to bring a project to fruition by providing the benefits of a test area and local infrastructure could prove very valuable.

- What are examples of best practice in Scotland and elsewhere, particularly focussing on low-carbon solutions and covering electricity, heat and transport?

Wind 2Heat systems are small scale innovative and successful ways of improving heating standards within community facilities by using natural resources. Often this is by direct feed of the electricity generated by a small 5~6kW turbine into a storage heater system inside the building. This model has proved extremely successful in Shetland and Orkney where there are high levels of wind and high levels of heat demand.

Eigg renewable systems – the island of Eigg has recently installed an all-island electricity supply network supplied entirely by renewable sources. By
using a range of different technologies the island now has a secure, renewable, and always on supply of energy for its residents, who previously relied on private diesel generators. This innovative system was developed by the community with technical assistance from UK companies and is a great example of how innovative and progressive community led development can be.
UNISON SCOTLAND

Introduction
UNISON is one of Scotland’s largest trade unions representing over 160,000 members, and is the biggest union in the Scottish power industry. Our members in other sectors including local government also have an interest in energy, particularly fuel poverty. Our wider membership is concerned to ensure that Scotland has a safe, reliable, clean and secure supply of electricity. We welcome the opportunity to respond to Determining and Delivering Scotland’s Energy Future, the Scottish Parliament Economy, Energy and Tourism Committee inquiry into Scotland’s energy future.

Background
The Scottish Parliament’s Energy Committee is conducting this review at a time when energy policy is becoming increasingly controversial. The current energy crisis has seen the price of crude oil double in the past year partly caused by demand in large developing economies led by China and India and partly by speculation in an unregulated global market. Gas and electricity prices for consumers have followed the steep upward trend bringing inflationary problems to the UK economy, causing wages to fall in real terms, raising concerns about increasing fuel poverty and prompting calls for windfall taxes on profits. The crisis has also further highlighted issues of energy security and stability as the UK is increasingly reliant on imported oil and gas and exposed to foreign ownership of key elements of the energy sector. Meanwhile global environmental damage caused by increasing CO2 and other greenhouse emissions continues despite international agreements such as the Kyoto protocol.

Scotland occupies an integral but unique position in the UK energy market. It has been self-sufficient in energy for many years and is a net exporter of electricity to the UK. There remains huge natural energy potential in terms of fossil fuels and renewables. Nevertheless Scotland may face an insecure energy future as oil peaks and declines, current nuclear generating capacity comes to the end of its life, renewable sources remain undelivered and clean coal technology remains unproven.

Therefore the remit of this Scottish Parliament Energy Committee review is apposite, as it seeks to determine:

“What type of future we want in Scotland in terms of the production, distribution and more efficient use of energy, and how and when it can be delivered to meet the Scottish Government’s objectives of increasing renewable energy generation and reducing emissions. It will also consider how energy supplies can be secured at an affordable price and how economic benefits from the energy industries can be maximised.”

This remit resolves into three main questions to which we respond in turn. Issues raised in additional questions are included in these points.
Scotland’s energy future – a balanced energy policy

- What type of future is needed in Scotland in terms of the production, distribution and more efficient use of energy, given the issues of price, security of supply and sustainable development?

UNISON Scotland believes that a sustainable Scottish energy strategy can and should be based on a planned market for energy in order to guarantee security of supply, as well as social, employment and environmental objectives. UNISON Scotland believes that climate change issues must be prioritised and supports the challenging targets for reducing CO2 and other greenhouse emissions adopted by both the UK and Scottish Governments which are in line with international treaty obligations. However, neither the targets on emissions nor the aims of secure and affordable energy will be met by rhetoric about the potential of renewables or by reliance on market forces.

UNISON, along with the other energy unions in the STUC has long called for a balanced energy policy which includes electricity generation from a number of sources. This would minimise volatility and ensure security of supply. We support continuing with gas and coal generation at current levels for the foreseeable future, subject to the introduction of new clean coal technologies. This requires significant government commitment to research and development investment as a matter of urgency.

We support increases in targets for generating electricity from renewable sources. Again, these targets will not be met unless fully supported also by government funding and planning. Wind and wave power offer the most viable medium term options and the necessary transmission infrastructure should be strengthened to support these developments.

Demand for energy should be reduced by promoting and incentivising energy efficiency for individuals, the private and public sectors, with new resources for local government and revised targets including new building standards.

Delivering on targets and obligations

- How can this future be delivered in Scotland and how will we meet all the various targets and obligations?

Joined-up government for a balanced energy policy

Energy policy for Scotland is mainly operated at UK level although numerous related powers are devolved, including the environment, planning, education and training, economic development, and sustainable development. Both the UK and Scottish Governments have commitments to secure energy supplies and also targets for cutting emissions and increasing renewable sources.

The UK Government’s Energy White Paper published in May 2007 (before the oil price shock of the last year took effect) restated its four main energy goals initially identified in 2003. They were to: “cut CO2 emissions by 60% by 2050, with real progress by 2020; maintain the reliability of energy supplies; promote...
competitive markets in the UK and beyond; and ensure that every home is adequately and affordably heated.”

A clear policy difference exists between the Scottish and UK Governments over nuclear power and the potential to replace it by renewables. Scotland’s two remaining operational nuclear power stations at Hunterston and Torness, accounting for between 40-50% of installed generating capacity, are due to close by around 2020. Most of the other UK nuclear capacity has a similar lifespan. The UK Government is committed to a new generation of nuclear power stations. The Scottish Government in contrast is against new nuclear power capacity and has argued that renewable alternatives can make up the energy gap.

The Scottish Government has set out ambitious proposals for a Scottish Climate Change Bill. UNISON Scotland has welcomed the proposed Bill and we support the inclusion within it of: a target of 80% cut in CO2 and other greenhouse gas emissions by 2050; statutory annual reductions of at least 3% per year; inclusion of emissions from international aviation and shipping; and a general duty on public bodies to consider climate change in all decisions and to report on progress annually, with negotiated green workplace agreements. We have called for the Bill to establish a Scottish Commission on Climate Change, modelled on the successful Freedom of Information Commission, with the Commissioner sitting on the UK Committee on Climate Change.

To meet the climate change targets, the Scottish Government is committed to increasing the contribution of renewables in electricity generation to 50% by 2020 (up from the previous Scottish Executive target of 40%). Renewables account for 18% of electricity generating capacity now, which is ahead of the previous Executive’s target to achieve this level by 2010. More than half of that 18% is already existing hydro power and most of the rest is recently installed wind power capacity.

Wind power is the most proven technology amongst the renewables. In terms of installed capacity in Scotland wind power is now on a par with nuclear. However wind power generation is inherently variable. It operates on average at around 30% of capacity, compared with around 80% for nuclear. Wave, tidal and other renewable power sources remain insignificant. The Scottish Government’s decision not to proceed with the large Lewis windfarm proposal and other planning difficulties have cast further doubt over the possibility of achieving significant increases in renewable generating capacity in the short to medium term.

To meet the objective of security of supply it will be necessary to continue with coal and nuclear generation at least for the short and medium term. To meet emissions targets in the medium to long term it will be necessary to make real developments out of what are at present still only potential developments in renewables. Meeting and even exceeding the current emissions targets for 2020 is necessary but already appears unrealistic and will certainly be
impossible without decisive and speedy joined-up government action involving co-operation at both Scottish and UK level.

Network and transmission issues

The British Electricity Trading and Transmission Arrangement (BETTA) which established a single UK national grid and wholesale electricity in 2005 has not resulted in the significant benefits to Scottish consumers which it was claimed would occur from increased competition. Retail price benefits which may have happened would anyway be negligible compared with the price rises faced by consumers in the current energy crisis.

Network access charges discriminate against Scottish generators who have to pay more to get power to the main users in the large English conurbations. The proposal to introduce zonal transmission loss charges would further directly discriminate against energy generation in Scotland, which is by definition further away from the main UK centres of population and electricity demand.

As renewable forms of generation like wind and wave power are in fact located outwith urban areas, the network access charges and proposed transmission loss charges clearly run counter to the aim of increasing renewables. UNISON Scotland believes that the current regulatory regime with its primary emphasis on competition is damaging to the possibility of a balanced energy policy for Scotland and the UK, and should be reviewed.

Fuel poverty

One in three Scottish households are in fuel poverty, which means they have to spend more than 10% of income on energy bills. As domestic fuel prices continue to rise, Scottish Government figures indicate that for every 1% increase in fuel price approximately 8,000 more households enter fuel poverty. These high levels of fuel poverty in Scotland are unacceptable and require action as part of a Scottish energy strategy.

The problem is compounded by the regressive nature of the competitive domestic energy market. The poorest customers are forced into more expensive prepayment arrangements, while richer customers paying by direct debits are rewarded with discounts on their energy costs.

Scottish Government has adopted the previous Executive’s target of abolishing fuel poverty by 2016. However, despite some progress which was made by the Central Heating Programme and Warm Deal in the early years of the strategy, fuel poverty has been on the rise again since 2002. The recent Scottish Fuel Poverty Review (May 2008) admitted that “In a context of rising fuel prices, the extent of the increase in household incomes required to abolish fuel poverty is daunting.” The UK Government’s policy goal that “every home should be adequately and affordably heated” is clearly not met either.
The main factors in fuel poverty are poverty itself which is due to low incomes, and the rising cost of fuel. Short of abolishing poverty, which in itself would be desirable, it is clear that action is required on fuel pricing. UNISON Scotland rejects the idea that price competition alone is sufficient to assist those in greatest need. We believe that UK Government should abandon its mantra of competition and review the Ofgem terms of reference to enable direct intervention on fuel pricing and establish incentives to encourage good practice by suppliers. The Scottish Government also has responsibilities in this field and should properly fund the range of programmes initiated by the last administration.

**Urgent action required**

- *What decisions need to be taken, by when and by whom to deliver on Scotland’s energy future?*

The need for a planned energy policy in Scotland is increasingly urgent, for the many reasons discussed above. In the absence of decisions on replacement or extension of current generating capacity, Scotland faces a large imminent energy gap which can only otherwise be filled by imports and which will undermine the objectives of security of energy supply. A clear planned energy policy including a balance of energy sources is therefore required, with obligations on both Scottish and UK Governments.

The Scottish Government should act to ensure the replacement or extension of existing gas and coal fired generating capacity in the near future. The UK Government needs to authorise investment in clean coal technology and ensure that it is actually implemented in coal burning power stations in Scotland.

The Scottish Government should not object to new or extended nuclear capacity in Scotland. However, with the discriminatory regulatory regime and in the absence of planned energy policy we doubt if commercial power companies would regard Scotland as a priority for nuclear investment.

Renewable energy is not currently a viable alternative to current sources of electricity generation, and we will need both to meet our energy objectives for at least the short and medium terms. Both Scottish and UK Governments must act to encourage development of renewable energy including wind, wave, tidal and other sources of power. This will require investment, support and decisions including on transmission network projects. Most immediately, approval of the proposed Beauly-Denny power line, currently subject to a Public Inquiry, will be essential to link renewable power generation in the Highlands to the grid. The UK Government should review Ofgem’s terms of reference in order to allow a fairer system of access to the national grid for electricity generators large and small.

The UK Government review of Ofgem’s terms of reference should also enable intervention in fuel pricing so as to mitigate fuel poverty. There should also be
a review of the market mechanisms that we believe have contributed to increased energy prices.

A balanced energy policy would also play a vital role in sustaining Scotland’s economy. The existing energy sector is already a major provider of quality employment in Scotland and it is important that this is developed. The upgrading of the transmission and distribution networks and building of new interconnectors if done on the scale required for the balanced energy policy as proposed will provide extensive construction employment for many years. Development of renewable energy sources and associated technologies and international markets will provide economic growth and is vital to deliver on emissions targets. Training and skills development including apprenticeships will be required to meet the demands of these.

The Scottish public sector could lead the way to greener workplaces through a collective workplace environmental agreement in every public body which would benefit not just the environment and the economy but also the quality of people’s working lives.

**Conclusion**

UNISON Scotland has consistently argued the need for a balanced energy policy in Scotland, including a range of sources. The absence of such a policy, and the pursuit of a competitive market at all costs has led us to a position where we now face an imminent energy gap with no plan to replace current power generating capacity and insufficient renewable sources as viable alternatives. In the present energy crisis we also face rising fuel costs and increasing fuel poverty.

We believe that only a planned, balanced energy policy can provide security of supply and meet our targets for addressing climate change. With concerted action in this direction from both Scottish and UK Governments, we can deliver the future we want in Scotland in terms of the production, distribution and more efficient use of energy; meet the Scottish Government’s objectives of increasing renewable energy generation and reducing emissions; secure energy supplies at an affordable price; and maximise economic benefits from the energy industries.

**References: Some recent UNISON Scotland policy documents**

UNISON Scotland has developed a consistent set of policies on energy and climate change in a series of documents which deal in more detail with many of the issues discussed in this response. The most recent of these are:

Scotland’s Energy — Scotland’s Future: a call for action
UNISON Scotland Energy Policy document, 2006
[http://www.unison-scotland.org.uk/energy/energypolicy06.pdf](http://www.unison-scotland.org.uk/energy/energypolicy06.pdf)

Meeting the Energy Challenge - Energy policy
Briefing No. 165 November 2007
Scottish Climate Change Bill: Act now to demand a stronger Bill - 4 key ‘asks’
Briefing No. 181 April 2008
http://www.unison-scotland.org.uk/briefings/climatechangebill.html
Economy, Energy and Tourism Committee

22nd Meeting, 2008 (Session 3), Wednesday, 12 November, 2008

Budget scrutiny – additional written evidence

Background

1. In addition to the information already provided to the Committee from the two enterprise agencies, VisitScotland, Scottish Water and the Scottish Government, the Committee has now received 3 additional items of written evidence, namely:

   • a submission from Scottish Engineering, following the appearance of this organisation’s chief executive on 29 October;

   • a submission from the CBI Scotland;

   • a submission from the Scottish Government following the Committee’s request for additional information subsequent to the Enterprise Minister’s appearance on 5 November.

2. These additional submissions are attached as the annexe to this paper, except for the submission from the Scottish Government, which is provided as a separate paper.

3. Members may wish to note that, in relation to the last of these three submissions, one question posed by the Committee appears not to have been covered in the Scottish Government’s response (by the time of publication of this paper). The clerk has asked for clarification on this matter. Specifically, in addition to the other requests made, the Committee had asked for “Details which outline the budgets for each of the 6-point plan bullets: what cash is associated with these, what is new (either since Nov 07 or mid-Sept 08 time periods) etc. If not new cash, which budget lines have been reduced to cover these sums”.

Recommendation

4. Members are asked to take these additional submissions into account in their deliberations on a draft report during today’s meeting.

Stephen Imrie
Clerk to the Committee
November 2008
ADDITIONAL SUBMISSIONS OF EVIDENCE

SCOTTISH ENGINEERING

Current state of the Scottish Economy, generally and sectorally?

See results from Scottish Engineering Quarterly review published in September.

Also information from District Meetings:

- Construction Sector having a very tough time with significant level of redundancies
- Scottish Engineering Member companies who are serving the Construction Sector are seeing a dramatic drop in overall Order Intake
- Oil and Gas Sector continues to operate at a great pace and those serving that sector remain extremely buoyant
- Some indications of “belt tightening” in other areas where companies are looking over their shoulders and tending to be cautious
- Increase in the number of companies who are planning some level of redundancies but these companies continue to be very much in the minority
- The majority of Engineering Manufacturing companies across Scotland remain positive whilst having some concerns regarding the short to medium term situation with regard to the availability of finance as a result of the current banking difficulties
- The majority of companies are still recruiting and we still have skills shortages in Engineering
- The weakness of Sterling against the Euro and the Dollar will assist our exporters but this is of course dependent on our overseas markets managing to sustain their levels of demand amidst a predicted global recession

Over the past 10 years Scotland’s Manufacturing Exports have averaged approximately £15 billion with some £9 billion of that coming from Engineering. Scotland’s largest exporting sector during that period has been Electrical and Instrument Engineering which incorporates Electronics.

Despite the loss of more than £6 billion per annum since the high of 2000, our Electronics Sector is still our largest Manufacturing Export Sector and on its own is still larger than our very important Drinks Sector.

Over the past 4 full years (2004 to 2007) our total Manufacturing Exports have risen by 8.92%.

Electronics has risen by 4.56%

Engineering, Allied and Metal (including Electronics) has risen by 14.26%
Drink has risen by 21.35%

Engineering Allied and Metal (excluding Electronics) has risen by 33.04%

What particular challenges are being faced by the sector in the short to medium term?

Those in Construction are in a fight for survival, especially those who are closely linked to the private construction sector which has been hardest hit.

Those involved in Oil and Gas are very busy but are having problems recruiting and retaining staff. We also have an aging workforce and the forecast between now and 2020 suggest that there is little sign of improvement with a growth in the number of workers who are continuing to work beyond the normal State Retirement age.

Despite winning price increases for our manufactured goods in both the Home Market and for Exports, we have been finding that margins are under severe pressure, particularly in recent months with dramatic rises in the cost of energy, raw materials and fuel. There has been some very recent moderation in prices for raw materials (steel/aluminium/copper) and for fuel but no sign of any significant drop in energy prices.

The decline in the number of youngsters studying the subjects which are perceived as being difficult gives us some concern, particularly with regard to the STEM Subjects, Science, Technological Studies, Engineering and Mathematics (See data from SQA)

The number of pupils doing Highers in 2007 and 2008 may be indicating a possible reverse in this trend for Mathematics, Physics and Chemistry but not for Tech Studies. However overall numbers are still much lower than those reported for 2000 and 2001.

Failure to study Mathematics combined with either Technological Studies or Physics/Chemistry precludes our youngsters from doing a degree in Engineering.

There is an underlying concern with regard to Energy Policy and the Sector is keen to see a balanced long term, believable, sustainable, affordable policy which will provide security of supply going forward.

The sector believes that Scotland should be making use of all available technologies to ensure our long term security of supply of electricity.

This should include, Onshore and Offshore Wind, Clean Coal, Carbon Capture, Biomass, Hydro, Wave and Tidal Power and of course Nuclear.

For businesses to invest, we need to have a long term period of stability and certainty against which we can plan our operations.
Those involved in the Defence Sector are concerned by the mixed messages that “Scotland doesn’t want Faslane but is keen to build the new Aircraft Carriers”

We have thousands of Scottish jobs which are closely linked to the Defence Industry. It is important that we send out the correct message that “Scotland is open for business”.

We have concerns that there will be a period of instability in the education system for the next 6 years. In 2009 the Curriculum for Excellence will be introduced for those entering 1st year of Secondary School. In 2012/2013 these pupils will be moving on to study for the new qualifications which will be introduced about that time.

Employers will find it difficult to keep up with another set of changes in qualifications and will be unsure of the content of subjects being taught in schools.

What is your view on the measures announced recently by the Scottish Government to help reflate the economy?

We welcome the Government’s announcement that they are bringing forward their public sector spending plans to assist the Construction Sector which has seen the loss of a very significant number of Scottish jobs in recent weeks.

We have concerns about the mixed messages in relation to the proposed takeover of HBOS by Lloyds/TSB. The key requirement is to have an appropriate level of confidence, not only between banks but between banks and their customers.

The Scottish Government’s range of announcements on HBOS/Lloyds and the ongoing saga does not help to generate that level of confidence.

What further steps would you like to see the Scottish Government take, generally and with respect to the Scottish Government’s budget plans for 2009-2010 and future years?

We would welcome a more balanced approach in relation to our overall attitude to developing a balanced sustainable and secure energy policy which ensures that we make the best use of all available technologies, including Nuclear.

Against that background we need to make full use of the very high level of energy expertise which currently exists in our Scottish academic institutions working in conjunction with our forward thinking companies.

We need to make strides with regard to our Transport Infrastructure which is vital if we are to be able to get our goods to market without lengthy delays in miles of traffic.
Meantime, questions are being asked about the advisability of Edinburgh trams or the Borders Rail Link.

Key areas where we need to get moving include work on upgrading our motorways, dual carriageways and bye-passes, the new Forth Road Bridge and links from the city centres to our airports in Edinburgh and Glasgow.

We would welcome ongoing support for the successful Scottish Manufacturing Advisory Service which can undoubtedly help to support further a wide range of companies across Scotland.

We need to have a more appropriate level of support for funding of our Scottish Modern Apprenticeships which still receive significantly less funding than our colleagues in England and Wales.
CBI SCOTLAND

INTRODUCTION

1. CBI Scotland is Scotland’s premier business organisation, representing firms of all sizes and from all industrial and commercial sectors. We welcome the opportunity to respond to the Scottish Government’s consultation on its Draft Budget for 2009/10.

2. Business has a crucial interest in the budget of the devolved government, as funders of government in their own right but also as beneficiaries of many of the spending decisions taken. We published our business manifesto\(^1\) ahead of the 2007 Holyrood elections, setting out our members’ recommendations and aspirations for how the devolved government should prioritise its spending and reform the way it operates.

3. We recognise that all tiers of government are operating within a tighter financial climate, just like businesses, and as such have to cut their cloth accordingly. Nonetheless, their significant remit and budget, and the freedom they have over how that expenditure is deployed, means the Scottish Government has a valuable and pro-active role to play in helping the economy not least through the current economic slowdown which is proving to be very challenging for many businesses.

CBI SCOTLAND RECOMMENDATIONS

General

4. CBI Scotland believes that the devolved government’s budget ought to be a more effective catalyst for growth. The report on ‘Business Growth’ published by Holyrood’s Enterprise Committee demanded a re-balancing of public spending, with a greater proportion of taxpayers’ money used on investment that supports wealth creation, such as skills and infrastructure e.g. transport, ICT. **CBI Scotland endorses this and wants to see the Scottish Government set out a timetable for achieving this goal.**

5. **The Scottish Government should review new policies and spending decisions against a single benchmark: will it aid the economic recovery?** Can we say with confidence that all spending decisions are taken in the context of the devolved administration’s welcome growth objectives? Moreover, each year each devolved government department and public agencies should publish a statement demonstrating their contribution to the economic growth objective and the value for money they have provided.

Specific actions

6. **The devolved government and its agencies should review their own capital expenditure plans, and encourage local authorities to do likewise, to see whether those that can contribute to the productivity of the economy can be accelerated and indeed whether any additional projects can be undertaken which prioritise economic growth.** The Scottish Government’s recent and welcome decision\(^2\) to accelerate £100m from the social housing capital programme, to be spent during 2008/09 and 2009/10, is the model that ought to be used. Once implemented this will help to deliver planned projects more quickly, and provide much needed work for the construction sector, but will also ready the economy for the recovery when it comes. Other opportunities to accelerate the approval of budgeted activity should similarly be explored as a matter of urgency. Those projects identified in the revised National Planning Framework and the Strategic Transport Projects Review should be the starting point. In order to get our transport system fit for purpose in a modern economy, Ministers should also provide a timetabled commitment to upgrading the M8 to a three-lane motorway, start construction of an M8 spur to Edinburgh airport, complete the dualling of the A9 from Perth to Pitlochry with increased passing opportunities north to Inverness, and tackle the growing backlog of local authority road repairs.

7. **Ministers should ensure, while its proposed Scottish Futures Trust funding model continues to be developed, that there are no delays to progressing public sector building projects funded through other mechanisms.** CBI members have voiced concerns that the current hiatus in agreeing what the Scottish Futures Trust will do, and how it will do it, is unhelpful to the construction sector. Many firms made a conscious effort to diversify into PPP/PFI activity, and if there was more certainty then it would help provide some relief to Scotland’s hard-pressed construction industry and help retain much-needed skills in the sector.

8. **Ministers should seek to reduce firms’ costs by cutting business rates, e.g. by fully funding the Small Business Bonus Scheme (SBBS) themselves and eliminating the £18m business rates supplement which firms pay towards the funding of the SBBS.** CBI Scotland welcomed the introduction of the Small Business Bonus Scheme, and the decision to implement it in full in 2009/10, and firms should be encouraged to check their entitlement. We welcomed too the commitment to retain poundage rate parity both during and after the next commercial property revaluation. Ministers should resist the use of the tax-varying power as it would place a costly and complex administrative burden on both businesses and public sector employers alike.

\(^2\) First Minister, August 2008
9. We endorse the UK Government’s new commitment\(^3\) to ensuring that all public agencies pay suppliers within 10 days, and ask that Scottish Ministers ensure a similar commitment is forthcoming from publicly funded bodies and local authorities north of the border. This builds on the principles which underpin the widely adopted ‘CBI prompt payment code’.

10. The Scottish Government should seek to obtain better value for the money it spends by adopting a more coherent approach to public sector reform, involving far greater private sector delivery of public services. Market-based reforms to the provision of public services in Scotland ought to be widened and deepened. The benefits of such an approach are clear, making services more responsive to their users and customers, spurring innovation in service design and working practices, and making services more affordable over the long-term. This is not about removing government involvement, but about modernising the nature of that involvement. The devolved government should retain the critical roles of principal and funder, but should increasingly look to others to provide services, e.g. local authorities have yet to contract-out the management and maintenance of their roads networks as the devolved government has successfully done. Similarly, the proposal to ban commercial firms from providing GP services is a step backwards.

11. The new framework for business support introduced earlier this year needs to be nurtured and supported, and in these challenging economic times the specific support on offer to manufacturers, exporters and tourism must be maximised. Exporters will be crucial to our future success when the recovery comes, and the Scottish Manufacturing Advisory Service should be an early candidate for any expansion of support schemes. Grant schemes should be reviewed to ensure they are easy to apply for and widely known amongst potential beneficiaries.

12. The devolved government should examine the case for introducing Tax Increment Financing and the Local Authority Business Growth Incentive Scheme. The downturn in the house-building sector will mean house-builders are less able to contribute financially in future to the funding of local infrastructure, e.g. school extensions, local roads, play parks etc. TIF (which allows local authorities to borrow against future revenues associated with new development in order to forward fund infrastructure) is one of a range of possible solutions and is worthy of examination. CBI Scotland welcomes Ministerial commitments to reform the planning system, but local authorities and key agencies must be required to give greater

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\(^3\) BERR statement (21 October 2008) on helping firms through the economic slowdown
weight to economic considerations in decisions on planning, to help speed up much needed commercial and public infrastructure investments. Furthermore, LABGIS (which allows local councils to retain any growth in non-domestic rates revenues over and above an agreed threshold) could help incentivise local authorities to support economic development.

13. **The devolved government should privatise Scottish Water, which would free up £182m of devolved government funds each year - as well as provide a useful one-off capital receipt - which could then be used for GDP-enhancing investments.** The lack of any Barnett Formula monies coming to Scotland to fund this annual taxpayer support for Scottish Water, due to the fact that English water authorities are already in the private sector, is an added incentive for moves to either privatise or mutualise the ownership of Scottish Water.

14. **The Education Maintenance Allowance should be reformed to incentivise young people to study science and maths.** The EMA, worth £36.5m next year, should be reformed to incentivise more young people to study science and mathematics in order to sow the seeds of future growth in key industries e.g. electronics, energy, life sciences, aerospace and defence. This would complement the welcome introduction of the Science Baccalaurate. Consideration should also be given to introducing bursaries for those who take up science undergraduate degrees.

15. **All new legislative proposals from parliamentary committees and backbench MSPs should be subject to Business Impact Assessments.** The new regulatory reform agenda, advanced by the industry/government Regulatory Review Group, is to apply to government inspired legislation and regulation. However this should equally apply to proposals emanating from backbenchers and parliamentary committees. The Regulatory Review Group’s annual report should also be debated in Parliament.

16. **The devolved administration should commit to ensuring that any ‘Budget Consequentials’, and any cash windfalls, which emanate from the UK Government should - for the remainder of the Strategic Spending Review period at least - be directed towards GDP-enhancing investments.** While this source of revenue is likely to be much less lucrative than in the past due to the UK public spending deficit, a clear commitment along these lines would reinforce the Scottish Government’s commitment to prioritising the needs of the economy.

17. **Ministers should scrap proposals for a Local Income Tax.** According to the Draft Budget, the LIT is set to cost the Scottish Government £20m in 2010/11 in preparatory and set-up arrangements.

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4 CBI Scotland submission to the Science & Innovation Strategy
5 P25, Scottish Government’s Draft Budget 2009/10
alone. This cash should instead be deployed for GDP-enhancing investments. The strategy of freezing the Council Tax for three years is timely and welcome, and Ministers should also consider removing the barriers which prevent local authorities from providing council tax rebates to those who make their homes more energy efficient.

18. **The devolved government should better stimulate commercial innovation by putting in place a more effective approach to capturing innovation through public procurement**. A new approach and new guidance is required so that the public sector becomes a much more effective procurer of innovative goods and services supplied by businesses. This new approach should be achieved through early business involvement in drawing up tender specifications, and the publication by the Scottish Government of an ‘Innovation Procurement Plan’. Each public authority should be required to identify an ‘innovation champion’ to better embrace and monitor its purchasing of innovative products and services from both large and small companies.

CBI Scotland
October 2008

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<sup>6</sup> CBI Scotland’s submission to the parliament inquiry on “Scotland’s energy future”, September 2008

<sup>7</sup> CBI Scotland’s speech on innovation in public procurement, May 2008
Minister for Enterprise, Energy and Tourism
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Mr Iain Smith MSP
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Scottish Parliament
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Dear Mr Smith

EET COMMITTEE CONSIDERATION OF THE 2009-10 BUDGET

I attach the further information sought during the Committee's consideration of the draft budget yesterday.

A Parliamentary debate on the current economic climate has been scheduled for 12 November and Committee Members will have the opportunity then to discuss the Government's 6 point recovery plan.

SHAUNA CRANNEY
Private Secretary

Enc.
EET COMMITTEE CONSIDERATION OF DRAFT BUDGET 2009-10,
5 NOVEMBER 2008

RESPONSES TO QUESTIONS TABLED BY WENDY ALEXANDER DURING
EVIDENCE SESSION WITH THE MINISTER FOR ENTERPRISE, ENERGY
AND TOURISM

Q. Information (qualitative and quantitative) of the budgetary changes that have
been made in the following two time periods as a result of a desire to tackle some
of the challenges in the economy: (i) the period between the publication of the
proposed draft budget for 09/10 as part of the 3-yr spending review (November
2007) and when the actual Draft Budget proposals for 09/10 were published in
mid-September 2008, and (ii) the period since mid-September 2008 and now.

A. Between the publication of the Spending Review Document in November
2007 and presenting Draft Budget to the Finance Committee on 16
September 2008, the First Minister announced on 19 August that the
Scottish Government had decided to bring forward up to £100 million of
spending in the Affordable Housing Investment Programme into 2008-09
and 2009-10. The resources are being found from other Programmes, as
announced at the time, and will be returned in 2010-11. These changes are
reflected in the Draft Budget document. The Government’s final budgetary
proposals for 2009-10, in the light of consultations with Committees, will be

Q. Details of the capital spending that has been accelerated to support growth
which justifies the statements by the Cabinet Secretary for Finance and
Sustainable Growth in the Draft Budget proposals.

A. The Draft Budget shows accelerated capital spending of £100 million on
the Affordable Housing Investment Programme. Of this, £30 million has
been brought forward from 2010-11 to 2008-09 and £70 million to 2009-10.
The Scottish Government is currently further reviewing its capital spending
budgets and working with key partners to identify any additional scope for
accelerating capital spending.

Q. Details of the requests to HM Treasury to draw down all EYF and also to
change the split between revenue and capital and how this changed. Also, did
this represent a shift in balance? Furthermore, the level of EYF available in FY
07/08 and how it was used and estimates of current level of EYF expected for FY
08/09.

A. The subject of EYF drawdown was raised in the context of the 2007
Spending Review. The amounts negotiated with Treasury for draw down as
EYF over the SR period are £300m/£400m/£174m. The split between
revenue and capital is:

- Revenue – £184m/£163m/£153m
- Capital – £116m/£237m/£21m
In addition, we negotiated drawdown in 2007-08 of £655 million (£225 million in resource and £430 million in capital). It is not possible to attribute the drawdown to particular programmes. We have asked Treasury to release EYF sums of £42 million unspent in 2007-08 to enable us to increase spending in support of the Scottish economy this year. Approval has not been given. Consequently EYF drawdown in 2008-09 remains for the moment at £184 million revenue and £116 million capital as agreed in the Spending Review.

Q. Will there be further acceleration and/or reprofiling of the budget during the remainder of FY 08/09 and if so, details thereof. Also, if so, how is this consistent with parliamentary scrutiny, particularly the role played by committees and our timetables? Likewise, will there be any further announcements on spending as part of the 6-point plan and, if so, details thereof and how is this consistent with parliamentary scrutiny etc?

A. The Scottish Government is currently reviewing the need for further acceleration or re-profiling of the budget in 2008-09. If any changes to the budget are proposed for 2008-09 they will be brought forward at the Spring Budget Revision when there will be an opportunity for them to be scrutinised by the Parliament. New spending may be announced as part of the economic recovery plan, but the plan also concentrates on how the timing and focus of agreed spending can be changed to support the economy. The budget consultation process allows for views to be fed into the detailed proposals which will then be finalised for the Budget Bill.

Q. Details/timetable for implementation of the 2006 Act on planning and whether this has been accelerated and, if so, how so?

A. Implementation of parts of the 2006 Planning Act has already commenced, however the main elements relating to the modernisation of the planning system require supporting secondary legislation. This raft of secondary legislation has been developed, consulted on, and further streamlined in discussion with stakeholders to reduce complexity and provide scope for local solutions wherever possible.

Our new approach to planning goes beyond legislative change. At the 28th October planning summit Mr Swinney announced a series of actions to support and accelerate modernisation. We have secured a shared commitment by the Government, local authorities, key agencies and the development industry for 'Delivering Planning Reform'. It is recognised that some of these actions should feed through quickly into securing system improvements. Others are more structural and longer-term. The Government is looking for a progress report in Spring 2009, and will share that update with Parliament.
Q. Details of how the 6-point plan bullet on energy efficiency is consistent with real terms reductions proposed in coming FYs

A. Within the plan, action on intensifying work on energy efficiency within the EET budget currently includes the following activities:

- Working with the energy companies to increase spend in Scotland under the Carbon Emissions Reduction Target (CERT). Evidence suggests that Scotland is not receiving its fair share of CERT spend. Consequently, the Scottish Government is working in partnership with the energy companies to ensure that households in Scotland receive the fair share of benefits.
- The Energy Saving Scotland Advice Network. This provides a more strategic and streamlined one-stop shop approach to advice for householders on energy efficiency, renewables and personal transport. The Energy Saving Scotland Home Help will also provide tailored and dedicated support to help householders find the appropriate energy solutions.
- Revising and re-launching small business loan scheme with a more proactive and targeted marketing campaign to ensure that businesses are making best use of current schemes.

It is important to note that the EET budget does not reflect the total spend on energy efficiency – efforts to intensify action on energy efficiency will be undertaken across Scottish Government portfolios.

Q. Details of what the Minister was describing in terms of the acceleration/re-profiling of EU funding (ERDF?)

A. This year almost £100 million has been allocated to projects under the European Social Fund programmes (45% of the total allocation) and a further £100 million from European Regional Development Fund programmes. Overall, this represents approximately a third of the total Structural Funds allocation to Scotland.

Future award recommendations will be made by the Programme Monitoring Committees for the Highlands & Islands and Lowlands and Uplands Scotland programmes when they meet in February and March 2009, respectively. They will make recommendations to Ministers on the next annual round of funding.