The energy dimension to
A sustainable recovery pathway

Overview – a Green New Energy Deal

The pathway to recovery from this economic downturn must take us in a new direction, not return to the unsustainable model of the late 20th century. Extreme energy price volatility, climatic disasters and an unsustainable financial system have led to the present crisis and shown what we need to avoid in future.

That is why experts like Professor Lord Stern have called[1] for at least 20% of the economic stimulus packages now being put forward to be deployed on 'green' initiatives. Analysis[2] shows that President Obama's recent package delivers about 12%, the Asia Pacific region led by China achieves 23% while France and Germany average 15%.

To match these aspirations, the emerging UK package requires a green stimulus component around £10bn. A major part should be deployed in the energy sector, led by energy efficiency. We can improve competitiveness, jobs and prospects for a sustainable recovery by investing a modest amount in renewable energy. Our immediate proposals total £695m in the four areas summarised below.

Decentralised energy

- ☆ Rebalance, refinance and extend the Low Carbon Buildings Programme to 2011 with an additional £230m, creating some 10,000 jobs and establishing a trajectory to make DECC's 2020 target of 7m sustainable homes realistic.
- ☆ Provide an additional £130m in Bioenergy Capital Grants to stimulate new biomass heat projects and anaerobic digestion facilities.

Bulk energy supply and transport energy

- ☆ Interim increase of the multiple for offshore wind in the Renewables Obligation to 2 ROC's per MWh, with a corresponding adjustment to the buy-out price.
- ☆ A £60m package for demonstration heat networks, biogas injection into the grid and bioenergy fuels and vehicles. Supplemented by policy and regulatory reform to accelerate consenting and strategic investment.

Energy infrastructure

- ☆ Systematic smart metering roll-out trials, initial development of intelligent distribution networks and related services, supported by regulatory reform to permit strategic investment and funded with £165m.

Skills, training and awareness

- ☆ A total of £110m to provide skills training and jobs for workers in the energy, building services and bio-energy sectors.

Further details mapping these proposals into a longer term recovery plan follow.

Access to capital

We support the proposal of a Green Bond issue to fund this public investment, which should leverage a further £2bn in private capital. However, this sector faces the same credit squeeze as other industries, so it is crucial for government to:

- ☆ Ensure that the credit being made available to industry actually flows rapidly to companies in this strategically important sector.
- ☆ Provide guarantees on finance for renewables and energy efficiency projects.

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1 *An outline of the case for a 'green' stimulus;* Alex Bowen, Nicholas Stern et al.; February 2009

2 *A Climate of Recovery? The Green Dimension to Economic Stimulus Plans;* HSBC; February 2009

Policy context

The following outline puts the immediate investment proposals in the context of a longer term recovery and growth plan, against timeframes described as follows:

- Short term: The next two years or so, in the depth of the recession, while additional stimulus is required. A prime opportunity to make important strategic quantum changes while economic progress is slowed.
- Medium term: The period to 2020 exemplified hopefully by economic recovery along a new and more sustainable pathway.
- Long term: The period after 2020.

Energy policy needs to recognise that the long term objective is a sustainable energy production and interconnection system. In this context energy efficiency is paramount, measures like carbon capture and storage may be interim solutions, but the long-run trend will be to an ever more renewable energy mix.

Centralised power and fuel production and distribution will continue to provide a substantial contribution, but this system will also involve a much higher proportion of decentralised energy. Policy measures need to evolve rapidly to accommodate energy users as well as suppliers, and to achieve a coherent balance between the two. These twin approaches are reviewed individually below.

Decentralised energy

The Energy Act has created for the first time a platform which enables decentralised energy to be addressed, by introducing innovative tariffs for heat and biomethane, and by stimulating energy users to adopt renewable electricity alongside the incentive the RO gives to energy suppliers.

Long term objectives

To fully decarbonise the energy use of the nation's building stock by 2035.

Medium term goals

Recent government strategy announcements plan for energy upgrades in 7 million homes by 2020 – and we would propose that be increased to 12 million. We must also ensure that the zero carbon standards to which new buildings will be constructed are robust and make full use of renewable energy incident on the site. Similar measures are needed in the non-residential building stock.

The introduction of effective renewable heat and electricity tariffs in 2010 and strong legislative measures supporting energy efficiency will enable the bulk of the required investment to come from building owners and occupiers, with funding from the financial sector. Government support will be needed as a market catalyst and for the social and rented sector and fuel poverty alleviation.

Short term opportunities

The electricity and heat tariffs will be the primary driver towards the target above and ideally both should be introduced together by the start of 2010. Alternatively, there is an opportunity to prepare the market for their introduction through extending and refinancing the Low Carbon Buildings Programme until 2011.

Expanding the LCBP to deliver 70,000 systems in 2010 would put us on course for the cumulative 2020 target of 7m upgraded homes. The non-domestic phase of the programme should be extended too. The following adjustments will enable the programme to achieve this growth:

- Open up Phase 2 to competition from all suppliers and to new products
- Reverse the funding limits imposed on Phase 1 in Nov 2006 and March 2007
- Remove the 45kW cap on heat projects (to match the future tariffs)

The additional funding required for this extension would be £230m. Indicatively this would safeguard and create a total of nearly 10,000 jobs[3], many of them in the building services industry. Failure to prepare for the introduction of the tariffs will suck in imports and undermine UK competitiveness.

☆ To prevent hiatus, the government must make an immediate announcement that new installations installed before the tariffs start will be eligible.

Government should also facilitate, as described below, EIB funding for a national roll-out of the Re-Charge scheme pioneered in Kirklees.

It should lift restrictions in the CERT to enable rapid replacement of the 4 million band G boilers still in service, supported by additional £100m funding annually[4].

Decentralised energy also offers strong job creation opportunities in the rural economy, which should be pump-primed too. We propose that the Bioenergy Capital Grant Scheme is expanded with a further £130m for biomass heat installations, advanced biofuels, biogas plants and biomethane injection.

Centralised and transport energy

Long term objectives

The government can provide more certainty by setting firm dates for secure, zero carbon electricity, gas and liquid fuels supplies. We support the 2030 date proposed by the Committee on Climate Change for decarbonising electricity.

Medium term goals

These 2020 milestones towards a sustainable energy infrastructure should be set:

- An internal target for 20% contribution of renewables to total energy (this would safeguard the probability of meeting the legally binding 15% EU goal).
- Investment in the UK supply chain especially advanced technologies like wind turbines, photovoltaics and marine renewables.
- A coherent framework linking policies on waste management and energy.
- RD&D on complementary storage approaches including load management and interactions with the future vehicle fleet.
- Active support for R&D and commercialisation of second generation biofuels technology to enable a significant contribution to existing EU targets.
- The capture and distribution of heat used in existing power plant, where feasible, and the requirement that any new traditional generating capacity is able to productively use its surplus heat and fit CCS (assuming it is proven).

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[3] A recent survey of members by the REA shows that companies in the decentralised renewables market employ on average 10 people for every £1m of turnover. They project incremental employment of 7 for every £1m of new turnover. Based on analysis elsewhere in the economy these figures can be multiplied by between 2 and 3 to account for employment up the supply chain.

[4] Not included in the totals on page 1, as this is primarily an energy efficiency measure.

The majority of the investment for these developments will come from traditional sources, provided that the regulatory regime is appropriate, clear and stable.

Offshore wind is expected to show the highest growth in contributing to the centralised renewable electricity contribution for 2020. The targets will be at risk if early acceleration in this sub-sector were unduly hampered by the recession. The recommendations on investment and project finance in the final section below will be crucial for many such sub-sectors.

Short term opportunities in bulk heat and power

Immediate short term actions to accelerate activity in this area are:

- Extend guarantee of support for RO-eligible plant from 17 to at least 20 years.
- Interim increase in the ROC multiple[5] for offshore wind projects commissioned after April 2009 to 2 ROCs per MWh until the first timetabled review of ROC banding in 2013 (when the multiple would be expected to revert to 1.5), combined with:-
- An interim (for the same period) increase in the ROC buy-out price or quotas[5], if required, to neutralise the impact of the above change on the ROC market price and so ensure that other technologies are not disadvantaged.
- Streamlined consenting both for generation projects and related infrastructure.
- Review of the terms of the Marine Renewables Deployment fund and other measures required to bridge tidal and wave energy generation from 'proof of concept' to commercial deployment.
- Installing at least five demonstrator heat networks, one supplied by a suitable existing (biomass co-firing) power station.
- Part-funding the installation of one demonstration large scale advanced waste gasification plant.

Short term opportunities in transport

- Reverse the decision to slow down the annual quotas in the Renewable Transport Fuels Obligation.
- Implement the Renewable Energy and Fuel Quality Directives so as to maximise GHG savings by introducing 'carbon linkage', in a way that also stimulates high quality biofuels unsuitable for blending (such as pure plant oil) and UK development of 'second generation' biofuels.
- Convert 500 buses to operate on biomethane and biofuels for use at the 2012 Olympics[6].
- Plan a nationwide infrastructure for future proven low carbon transport options, including fuel chains for high blend biofuels (and in due course hydrogen) and renewable electricity charging stations.

Many of these are policy actions rather than tangible investments, as bulk energy is inherently less susceptible to short-term measures. The combined new cost to the government stimulus package would therefore be £60m.

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[5] The REA has always called for stability in the Renewables Obligation and discouraged 'tinkering'. We support this BWEA proposal now as an expressly defined interim measure in exceptional circumstances (under the 'emergency review' provisions). We would not advocate future changes of this type as a matter of routine.

[6] At present there is a risk that London will reverse the trend towards sustainability established by previous Olympic Games and revert to fossil fuel powered transport

Energy infrastructure

Long term objectives

Our aging energy infrastructure needs upgrading, to accommodate more decentralised energy and changes to the bulk energy market including the potential development of a hydrogen network. These should be strategically planned and implemented to coincide with advances in the overall energy system.

Medium term goals

Some of the major medium term requirements are:

- The development of a strategic on- and off-shore transmission grid to ensure capacity for new generation capacity and improve international connectivity.
- To enable rapid development of the decentralised energy sector the distribution infrastructure also needs upgrading from passive to intelligent networks.
- Future-proofing the user interfaces through the use of smart meters and interactive load management.

Short term opportunities

These early actions will accelerate activity and create employment:

- Provisions for the gas network to accept biomethane from renewable sources and early injection system demonstrators in four different regions.
- Representations to the European Union to increase the funding for offshore transmission infrastructure or the proportion of the existing package[7] accessible by the UK.
- Intensive targeted smart metering roll-out trials in four local areas, potentially in conjunction with CESP projects.
- Revision to the transmission regulation regime to enable strategic planning and investment in coordinated electricity networks both on- and off-shore.
- Revision to the distribution regulation regime to permit strategic network reinforcement in advance of proven consumer need.
- Upgrades to low rated switchgear and urban substations and reinforcement of distribution networks to enable connection of more decentralised systems.
- Trials of 'intelligent grid' approaches: Active Voltage Management, autonomous control, demand-side management, dynamic ratings and associated controls.
- Full funding of the Centre for Sustainable Electricity and Distributed Generation and the Electricity Networks Strategy Group so they can meet their objectives.

The combined investment in these activities is estimated at £165m.

Skills, training and awareness

Long term objectives

This new industry sector is expected to be the major energy provider in the long term and to contribute more in 2020 to the UK mix than either coal or nuclear energy. It is also a sector where the opportunity still exists to establish an early mover advantage and become a significant player on the world stage.

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[7] Of the package of €3.5bn for energy projects proposed in January 2009, €500m is for offshore wind infrastructure, of which just €150m relates to the North Sea grid.

Medium term goals

Some medium term requirements are:

- A major increase to the training and educational facilities reflecting the modern sustainable energy technologies, which will be adopted.
- Research and development programmes co-ordinated between industry, academia and the various government departments and agencies involved.
- A far higher level of awareness of the requirements for a sustainable economy including the implications of a sustainable energy system.

Short term opportunities

Action here will support employment through re-skilling, especially in the hard-hit construction sector. We propose that government provides £110m for:

- Sustainable energy skills development in the energy sector.
- Training programmes in energy efficiency and renewables installation skills for 10,000, including 10% of the 60,000 heating engineers.
- Installation of advanced sustainable energy equipment on offices and homes (perhaps unsold show homes) in all regions to provide on-the-job training and demonstrators of retrofit technologies (and to enhance their saleability).
- Create 5,000 bio-energy jobs linked to environmentally sound agriculture and or environmental conservation through a 33% two-year grant for each post.

Access to capital and fiscal measures

This sector of the new economy is not immune to the present credit squeeze, and it is vital that this situation is rectified to safeguard existing plans and to leverage the additional £2bn of private sector expenditure these proposals would attract.

- The government must ensure that the steps it has taken to free up credit actually feed through to manufacturing and other companies in the sector, perhaps based on the Irish model
- It should provide 100% guarantees on renewable energy project finance and backing for leases and mortgage for sustainable energy installations
- It should ensure that a UK bank is prepared to manage European Investment Bank funding for the proposed nationwide Re-Charge scheme

The sector could also benefit from new sustainable financing approaches, such as those recently proposed by others. In particular we support:

- ☆ Establishing a Green Infrastructure Bank to catalyse private sector investment through the effective and efficient use of public finance to implement low carbon infrastructure investment.
- ☆ Raising new finance through 'Green Bonds' for both institutional and retail investors to fund low carbon infrastructure and energy efficiency programmes.

Finally the fiscal system should be used to support the sustainable energy infrastructure through such measures as:

- Reinstating 100% capital allowances for leased renewable energy infrastructure and generation assets.
- Application of Enhanced Capital Allowances for all renewable energy equipment.
- Adjustments to the commercial rating calculation methodology to ensure that energy users are not penalised for installing renewable energy systems.