

JULY/2010

SHOWING LEADERSHIP

ENERGY ACTION PLAN, 2010 – 2013



The
manufacturers'
organisation

Introduction

Energy is integral to most aspects of modern life from transport and communications to the lighting, heating and cooling of our buildings. Manufacturing is no different. Despite significant increases in energy efficiency in recent years, manufacturing remains more energy intensive than most other parts of the economy.

The availability of secure and competitively priced energy is vital to the future of the sector and by extension the new government's aspiration to rebalance the economy. A strong manufacturing sector can make a major contribution to paying our way in the world through exports, spreading wealth and opportunities more evenly around the country and avoiding overreliance on any one industry for economic growth.

However, the UK faces an unprecedented and widely acknowledged combination of energy challenges over the next decade – replacing a significant proportion of our ageing energy infrastructure, managing the risks associated with increasing reliance on imports for one of our most widely used fuels, natural gas, and renewable energy targets which are amongst the most costly and ambitious in the world. To meet these challenges the UK energy sector will need to make around £200bn¹ worth of investment.

Without reform, energy security could be undermined within five years.

Recent assessments of the ability of current energy policy and market arrangements to meet these challenges paint starkly different pictures. In February 2010, Ofgem published the findings of its year-long investigation into the issue - Project Discovery². The regulator warned that continuing with the current arrangements would not be in the best interests of consumers. Without reform, energy security could be undermined within as little as five years and hard-pressed consumers risk paying significantly more than is necessary to meet environmental objectives. In contrast the previous government's March 2010 "Energy Market Assessment" expressed confidence that current arrangements would continue to deliver over the next decade³.

Early signs from the new government are mixed⁴. A commitment to deliver market reforms to enhance energy security and facilitate investment suggests they share the concerns of the regulator. However, plans to expand renewable energy further and faster than the previous government suggest that they also see existing targets as far from stretching and believe the level of investment required over the next

decade can be stepped up even further.

One thing is clear, time is of the essence. Given the long-lead time for investment in energy assets, there is a very limited window of opportunity to implement new policies and institute market reforms. Ofgem believes that the timescales required to secure finance, mobilise supply chains and deliver infrastructure will mean that the energy industry will need to start making far-reaching and long-lasting investment decisions as early as 2012.

It is vital that government can demonstrate to manufacturers that it has a credible plan to address the energy challenges that we face.

With manufacturing now emerging from a deep recession, companies are starting to review their investment plans. For some, this will involve a decision about whether to make that investment in the UK or abroad. It is therefore vital that government can demonstrate to manufacturers that it has a credible plan to address the energy challenges that we face. This will require strong leadership on a range of fronts.

For example, it must provide clarity on its priorities for our energy mix, in particular the role that nuclear power should play. In addition, at a time when public finances are under pressure and raising funds from the private sector is still difficult, it must ensure that its approach to expanding renewable energy is cost effective. In particular, it should not commit to increasing the renewable target until it has thoroughly reviewed the feasibility and cost effectiveness of the current approach. Finally, it must be relentless in fighting to overcome the obstacles in the way of transforming our energy supply. With this in mind' our planning system must not undermine the urgent investments required.

In this action plan, EEF sets out the key actions we believe the government needs to take over the next three years, and by when, to keep energy policy on track to meet the challenges ahead. The focus is on four areas: market reform, renewables, nuclear and carbon capture and storage (CCS).

Market reforms

Key actions needed:

- Consult on (Q3 2010), legislate for (Q2 2011) and deliver market reforms (Q1 2011 onwards)
- Consult (Q3 2011) on and deliver measures to enhance gas security (2012) and introduce a carbon levy (2012 or 2013)

The government has recognised the urgent need for market reforms by committing to consult on proposals later in the year⁵. Changes must be introduced swiftly to minimise uncertainty for investors and ensure reforms are in place in time to influence their decisions. A consultation on detailed options should be launched in Q3 2010. This would provide enough time to issue a White Paper Q1 2011 before introducing enabling legislation in Q2 2011.

The UK's dependence on gas imports is forecast to double to 70% by 2018...yet the UK only has 16 days worth of gas storage capacity.

The government has already identified and committed to introduce two specific changes – regulations to safeguard gas security and a floor price for carbon to encourage greater investment in low-carbon technologies⁶. Whilst both reforms are essential, the details of each should only be developed once the overall design of the market and policy framework has been established.

The interactions between policy objectives, market design, security of supply arrangements, carbon pricing and support for renewable energy need to be considered before designing individual measures. Following a White Paper and enabling legislation, detailed consultations on gas security arrangements and carbon pricing should be launched by Q3 2011 at the latest.

Any reform must address the growing risks associated with the combination of rapidly increasing dependence on imported gas and limited storage capacity for the fuel. Dependence on imports is forecast to double to 70% by 2018⁷, increasing exposure to longer and more complicated supply chains.

Yet the UK only has 16 days worth of gas storage capacity compared to 99 in Germany and 122 in France. Even more alarmingly for the management of disruptions to supply or spikes in demand, the maximum drawn down rate as a percentage of average daily consumption in the UK is less than 1/5 of that in France, 1/4 of that in

Spain and a 1/3 of that in Germany⁸.

In February the Conservative Party committed to introduce an obligation on gas suppliers to encourage more investment in storage facilities⁹. Following a detailed consultation, an obligation or equivalent measure should be introduced in 2012 to provide an early incentive to invest in storage facilities which historically have had difficulties gaining planning approval.

A stable, consistent carbon price would reduce uncertainty for investors and create a level playing field for low-carbon energy technologies.

Reforming carbon pricing is essential to encouraging investment in cost-effective low-carbon energy technologies. The current mechanisms generate a range of prices, the most important of which – the EU ETS – has demonstrated considerable volatility since it was introduced. A more stable and consistent carbon price would reduce uncertainty over returns for investors and create a level playing field amongst low-carbon energy technologies.

This can be achieved in a number of ways – e.g. introducing a floor price for carbon, converting the Climate Change Levy (CCL) into a carbon tax that treats fuels consistently or a combination of the two. The coalition government has committed to introducing a floor price for carbon. EEF has since put forward its own proposals for converting the CCL into a carbon-based levy¹⁰.

Following a detailed consultation on carbon pricing, a levy could be introduced in the 2012 Finance Bill to give investors early visibility of the rates. Should the levy be linked to the EU ETS price, actual implementation could be deferred to 2013 to coincide with the start of Phase 3 of the EU ETS.

Renewables

Key actions needed:

- Review feasibility and cost-effectiveness of 2020 target as soon as sufficient evidence available (Q4 2011 and Q4 2013)
- Legislate for (Q2 2011), consult on (Q3 2011), and introduce reforms to make subsidies more cost-effective (Q2 2012)
- Make decision on Severn tidal energy scheme (by Q4 2012)

Renewables have an important part to play in the decarbonisation of the UK's energy supply alongside other low-carbon technologies. The previous government committed the UK to a sevenfold expansion of renewable energy to meet 15% of national consumption by 2020 as part of an EU-wide commitment. The projected costs of meeting the target are significant and highly uncertain: anywhere between £4.4bn and £24.9bn of additional expenditure (i.e. on top of the cost of existing subsidies) per year by 2020¹¹.

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Despite the high cost of renewable energy and the existence of other low-carbon technologies (e.g. nuclear power and CHP), the coalition government has already expressed a desire to increase the target¹². Given the major impact on consumer bills¹³ pursuit of the current target will have, EEF believes a higher target should only be pursued if it can be shown to offer a more cost-effective way to meet environmental objectives.

The government must use the biennial requirement to submit progress reports to the European Commission (the first is due by the end of Q4 2011 and the second by the end of Q4 2013) to assess the cost-effectiveness of meeting and exceeding the existing target.

If the review concludes that exceeding the target is not cost-effective, then the government should act in the best interests of UK consumers by dropping plans for a higher target. If the original target itself is not cost-effective then the government must work with the EU to develop a more market-based approach to decarbonisation focused on reducing emissions rather than mandating that specific technologies must

be used in arbitrary quantities.

Making a timely decision on whether to back a tidal power project in the Severn Estuary could be key to whether or not the 2020 target is practically achievable. The tidal power resource of the Severn Estuary represents the UK's single largest source of renewable energy - estimates suggest it could meet up to 5% of the nation's electricity demand¹⁴.

The government should adhere to the timetable for making a decision set out by its predecessor. Carrying out a public consultation on whether to go ahead in Q3 2010 and making a decision in 2011, based on the estimated 8-12 year lead-time¹⁵, could provide just enough time to develop a scheme in time to contribute to meeting the 2020 renewable target.

Whatever the target, a major expansion of renewable energy will be required. Most renewable technologies are expensive and will remain dependent on subsidy to attract commercial investment for the foreseeable future. Therefore it is essential that support for renewable energy delivers the best value for money possible by being delivered efficiently and by being targeted at the most cost-effective technologies.

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The government needs to reform the two main support programmes inherited from its predecessor, the Renewables Obligation (RO) for large-scale technologies and the Feed-in Tariffs (FITs) for small-scale technologies, both of which represent poor value for money.

The RO, which is forecast to cost £1bn per year in 2010¹⁶, has proven highly inefficient. There is a wealth of empirical evidence demonstrating that it has been substantially less cost-effective, in terms of the subsidy required to deliver a unit of renewable energy, than the principal alternative – the FIT¹⁷.

A major factor behind this inefficiency is the uncertainty over revenues for investors under the RO which increases the cost of capital for project developers. EEF supports the pre-election Conservative Party commitment to introduce FITs for future investments in large-scale renewable electricity projects¹⁸.

Following enabling legislation, a detailed consultation on the design of the FITs and the transition arrangements would need to be launched in Q3 2011. The new FIT regime should then be implemented as early as possible in 2012 as possible to avoid delaying investment – e.g. at the start of the financial year. At which point the RO (including the ‘bands’ which set out the level of support for each technology) would be frozen and existing renewable generators would have the option of receiving grandfathered payments at this level or transferring to the FIT scheme.

The Renewables Obligation has proven highly inefficient because uncertainty over revenues for investors increases the cost of capital.

The FITs for small-scale renewable projects is also in need of reform. There is significant variation in the cost-effectiveness of microgeneration technologies. For example, in the UK heating technologies (e.g. biomass boilers and domestic CHP) tend to be significantly more cost-effective abatement options than power generation technologies¹⁹.

However, the scheme takes no account of value for money. Heating technologies are not supported and the tariffs for power generation are based on subsidising all technologies to the point at which they become ‘commercially’ viable. This leads to the perverse situation where the least efficient technologies such as micro wind turbines and solar PV are rewarded with the highest tariffs.

The coalition has committed itself to introducing a “full system of feed-in tariffs”²⁰. The FIT regime should be expanded to include heating technologies but support should be restricted to the most cost-effective technologies. Following enabling legislation, a detailed consultation on the design, scope and rates of the FITs would

need to be launched in Q3 2011 for the scheme to become effective by Q2 2012

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Nuclear

Key actions needed:

- Designate National Policy Statement (Q3 2010) and finalise regulations for funding end-of-life liabilities (Q4 2010)
- Complete assessment of proposed reactor designs (Q3 2011)
- Decision over any proposals to extend the operating lives of existing plant (2011 onwards)

Nuclear power is a reliable and cost-effective source of low-carbon electricity. Reversing nuclear power's declining share of electricity generation (from 27% in 1997 to 18% in 2009²¹) in the UK is vital to reducing emissions at an affordable price.

EEF supports the essential 'facilitative' actions (e.g. planning reforms and assessment of reactor designs) started by the previous government. A number of major utilities responded by announcing investment plans to build new nuclear power stations in the UK. The government needs to keep to the timetable set out by its predecessor for the programme of enabling actions.

A number of complex regulatory activities must be completed to create a viable investment environment, protect tax payers from picking up the cost of decommissioning and waste management and ensure any new stations operate to the highest safety standards.

The key activities are the completion of planning reforms, finalising regulations on end-of-life liabilities, and assessing the proposed reactors designs for the new plant.

The key activities on the critical path are the completion of planning reforms (i.e. finalising and securing Parliament approval for the National Policy Statement on nuclear) in Q3 2010, finalising regulations to ensure operators have sufficient funds in place to meet their liabilities by the end of 2010, and completing the assessment of the proposed reactors designs for the new plant (i.e. the 'Generic Design Assessment') by Q3 2011.

Reforming the CCL into a carbon-based tax would further facilitate investment in nuclear power by ending the subsidy it provides to fossil fuels and treating it consistently with renewable power.

With the lead-time for new nuclear power stations in the region of 8-10 years, the regulator needs to be prepared for and ensure sufficient resources are available to consider any proposals to extend the lifetime of existing nuclear stations in the interim.

Reforming the CCL into a carbon-based tax would encourage investment in nuclear power by ending the subsidy it provides to fossil fuels and treating it consistently with renewable power.

Nuclear operator British Energy's policy of considering lifetime extensions for existing nuclear plant at least three years before their scheduled closure dates means the decision-making process would need to be initiated in 2011 for Heysham 1 and Hartepool plant and in 2013 for the Hinkley Point B plant and Hunterston B. The former are the more likely candidates for extension being newer plant with earlier closure dates.

Carbon Capture and Storage

Key actions needed:

- Accelerate and complete first demonstration competition (Q4 2010)
- Review and learn lessons from first demonstration programme (Q1-Q2 2011)
- Introduce levy to fund demonstration (Q2 2011)
- Launch (Q3 2011) and complete second demonstration programme (Q3 2013)

Carbon capture and storage, as well as providing major business opportunities for UK industry, could make a vital contribution to both energy security and tackling climate change by dramatically reducing emissions from fossil fuel-fired power stations and major industrial sites.

The new government has already committed to continuing the demonstration programme initiated by its predecessor. Despite launching a demonstration competition in 2007 and committing to support up to three further demonstrators since then, not a single funding commitment has yet been made. In contrast, the Canadian province of Alberta set up a demonstration programme in July 2008 that had committed C\$2bn worth of funding to four demonstration projects by December 2009.

To avoid falling further behind in the development of this potentially breakthrough technology, the UK must expedite the existing competition with a view to announcing the winner by the end of 2010.

Despite launching a demonstration competition in 2007 and committing to support up to three further demonstrators since then, not a single funding commitment has yet been made.

Time should then be taken at the start of 2011 to review the competition process and learn from international best practice to ensure that the next phase is completed much more quickly. The second competition should then be launched in Q3 2011 with a view to completion within two years. In parallel the funding mechanism committed to by the previous government, a dedicated levy on electricity suppliers, or an equivalent measure identified in the Q2 2010 consultation on market reform must be introduced in April 2011 to ensure funding for the demonstration programme exists.

The government should avoid repeating past mistakes when designing the second phase of the demonstration programme. The previous government backed itself into a corner when designing the current competition by limiting entrants to a specific technology and application before backing down and opening the competition to all proposals for application to coal-fired power generation.

The Canadian province of Alberta set up a demonstration programme in July 2008 that had committed C\$2bn worth of funding to four demonstration projects by December 2009.

The new government should be more open-minded when designing the next phase of the demonstration programme by allowing entries designed to cut emissions from gas-fired power stations (which will generate an ever increasing proportion of the UK's electricity) and industrial operations such as steel production (where they may few if any viable alternative abatement options).

Conclusion

Top priorities:

- Review market arrangements
- Review cost-effectiveness of 2020 renewables target
- Reform renewable energy subsidies
- Place security of supply obligation on gas suppliers
- Complete planning reforms and licensing process to enable new nuclear

Energy policy represents a major test of the new government's leadership. The current approach is no longer fit for purpose and unless reformed will undermine confidence in the security and competitiveness of UK energy supplies. The government must not delay taking the difficult decisions necessary to get policy back on track because the window of opportunity to make the necessary reforms is limited. This will mean being prepared to act in the best interests of the UK, even where this means challenging received wisdom or incumbent interests. The action plan set out by EEF is achievable, but there is no room for slippage.

Energy Action Plan

	2010	2011	2012	2013
Market Reforms	<ul style="list-style-type: none"> • Consultation on options in Q3 	<ul style="list-style-type: none"> • White Paper in Q1 • Enabling legislation by Q2 • Gas security obligation consultation launched in Q3 • Carbon levy consultation launched in Q3 	<ul style="list-style-type: none"> • Carbon levy included in Finance Bill (and becomes effective if independent of EU ETS²²) in Q2 • Gas security obligation becomes effective 	<ul style="list-style-type: none"> • Carbon levy becomes effective (if linked to EU ETS) in Q2
Renewables	<ul style="list-style-type: none"> • Severn Barrage Consultation launched in Q3 	<ul style="list-style-type: none"> • Consult on small-scale FIT²³s in Q3 • Consult on large-scale FITs in Q3 • Review cost-effectiveness of 2020 target in Q4 • Severn Barrage decision by Q4 	<ul style="list-style-type: none"> • Small-scale FITs effective Q2 • Large scale FITs effective Q2 	<ul style="list-style-type: none"> • Review cost-effectiveness of 2020 target in Q4
Nuclear	<ul style="list-style-type: none"> • National Planning Statement designated by Q3 • Guidance and regulations on funding of liabilities by Q4 	<ul style="list-style-type: none"> • HSE/EA²⁴ complete GDA²⁵ by Q3 • Consider AGR life extensions (Heysham 1 & Hartlepool) 	<ul style="list-style-type: none"> • Consider AGR²⁶ life extensions 	<ul style="list-style-type: none"> • Consider AGR life extensions (Hinkley Point B & Hunterston B*)
CCS	<ul style="list-style-type: none"> • Complete 1st competition by Q4 	<ul style="list-style-type: none"> • Review 1st competition process Q1 • Levy effective from Q3 • Launch 2nd competition in Q2 	<ul style="list-style-type: none"> • 2nd competition ongoing 	<ul style="list-style-type: none"> • Complete 2nd competition by Q3

Endnotes

- ¹ Ofgem (2010), Project Discovery – Options for Delivering Secure and Sustainable Energy Supplies
- ² Ofgem (2010), Project Discovery – Options for Delivering Secure and Sustainable Energy Supplies
- ³ HM Treasury (2010), Energy Market Assessment
- ⁴ HM Government (2010), The Coalition: Our Programme for Government
- ⁵ Plans to put forward proposals were announced alongside the June 2010 Budget.
- ⁶ HM Government (2010), The Coalition: Our Programme for Government
- ⁷ National Grid (2009), Ten Year Statement
- ⁸ The Conservative Party (2010), Rebuilding Security – Conservative Energy Policy for an Uncertainty World
- ⁹ The Conservative Party (2010), Rebuilding Security – Conservative Energy Policy for an Uncertainty World
- ¹⁰ EEF (2010), Changing the Climate for Manufacturing – Ensuring Competitiveness, Tackling Uncertainty and Incentivising Further Action
- ¹¹ EEF (2008), Low Carbon Energy: a Balanced Approach
- ¹² HM Government (2010), The Coalition: Our Programme for Government
- ¹³ Department of Energy and Climate Change (2009), The Renewable Energy Strategy
- ¹⁴ Sustainable Development Condition (2007), Turning the Tide, Tidal Power in the UK
- ¹⁵ HM Government (2009), Severn Tidal Power: Phase One Consultation
- ¹⁶ EEF (2008), Low Carbon Energy: a Balanced Approach
- ¹⁷ EEF (2008), Low Carbon Energy: a Balanced Approach
- ¹⁸ The Conservative Party (2010), Rebuilding Security – Conservative Energy Policy for an Uncertainty World
- ¹⁹ Department for Business, Enterprise and Regulatory Reform (2008), UK Renewable Energy Strategy
- ²⁰ HM Government (2010), The Coalition: Our Programme for Government
- ²¹ Digest of UK Energy Statistics
- ²² EU Emissions Trading Scheme
- ²³ Feed-in Tariffs
- ²⁴ Health & Safety Executive and Environment Agency
- ²⁵ Generic Design Assessment
- ²⁶ Advanced Gas-cooled Reactor