

DTI Energy Review Consultation Document: “Securing clean, affordable energy for the long-term”

Consultation Response by RWE npower

Executive Summary

The UK requires a stable, long-term energy policy framework which provides market participants with the appropriate signals to ensure that it invests in a diverse energy mix, making it possible to reconcile the UK’s goals of security of supply, carbon reductions and affordability. In summary, the key recommendations of RWE npower are:

- **Carbon pricing mechanism:** consistent over time and providing confidence in the long-term value of CO₂ emission reductions. The cornerstone of this should be an EU Emissions Trading Scheme phase 3 allocation period of at least 15 years more closely aligned to investment cycles in large-scale generation technology. Phase 2 must be seen as a bridge and a key element in building confidence in future regulation.
- **Measures facilitating investments in low carbon technologies:** corporation tax relief for all expenditure in a way that offsets an existing tax bill; pump-prime for research and development into emerging renewable and carbon capture and storage (CCS) technologies through appropriate support of R&D initiatives and large-scale demonstration projects; and, given the particular commercial risk of stranded costs attaching to early stage development work, provisions to limit and reimburse abortive costs where these can be attributed to Government or EU.
- **Renewables:** retain the Renewables Obligation as a long-term stable framework to maintain value in existing projects, but also to stimulate investment in to new viable renewable energy generation.
- **Clean coal:** resolution of significant regulatory and legal issues (for example, carbon transport and storage infrastructure, treatment of CCS under EU ETS and international agreements and ownership of long-term liabilities).
- **Reform of planning and consents processes:** review the planning and consents framework, including the environmental permitting process, for all types of generation.
- **Energy Efficiency:** redefine the EEC targets to deliver reduced carbon emissions rather than energy efficiency, allowing the incorporation of, for example, new microgeneration technologies. Government should work with local authorities to increase customer awareness of energy efficiency measures and the supply industry should continue with targeted promotions.
- **Fuel poverty:** fuel poverty targets should be owned by regional and local government as they are best placed to identify and continue to monitor those in fuel poverty. A passport scheme will then allow those in fuel poverty to be offered energy-related solutions by the supply industry which could be funded from de-coupling the social element from EEC.

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1. About RWE npower

1.1 RWE npower, part of the RWE Group, is one of the UK’s largest energy suppliers, with around six million customers and a diverse portfolio of over 9,000MW of generation capacity in the UK including coal, oil and gas-fired power stations. Our subsidiary npower renewables is one of the UK’s leading renewable energy developers and operators in the wind, hydro and biofuel generating sectors. We operate around 300MW of onshore and 60MW of offshore wind farms and anticipate significant future growth both onshore and potentially offshore. npower renewables also operates around 60MW of hydro plant in the UK. npower Cogen, our cogeneration division, is one of the foremost developers and operators of industrial combined heat and power (CHP) in the UK with a portfolio of 15 sites which have a combined electrical capacity of 560MWe and 1500MWth of thermal capacity.

1.2 Our retail division, npower, supplies electricity and gas to residential and business customers. Through our programmes such as Spreading Warmth and Health Through Warmth we work with key external stakeholders in fulfilling our responsibility to protect vulnerable customers. We develop innovative energy products and services and advise on energy efficiency measures to enable all of our customers to make sustainable energy choices. We also provide energy management, carbon reduction, and energy efficiency services through our energy services and energy solutions teams to our business customers and actively promote the efficient and effective use of energy to them.

2. The Review of UK Energy Policy

2.1 While the UK Government’s energy policy objectives of ensuring security of supply, reducing carbon emissions, providing affordable energy and promoting competitive markets are well known and enjoy broad support, it is equally well understood that they pose the challenge of, at times, reconciling conflicting goals.

2.2 We therefore welcome the opportunity to contribute to the Government’s Energy Review consultation. We believe that the Review is timely if the UK is to have an energy policy which enables market participants to find cost effective ways of achieving further reductions in carbon dioxide (CO₂) emissions, while ensuring security of supply through a diverse fuel mix for electricity generation.

3 The “Business As Usual” Scenario

3.1 The UK energy market is currently at a crucial stage. The decommissioning of nuclear plant and the closure of coal and oil-fired power stations, as a result of implementation of the Large Combustion Plant Directive (LCPD), is expected to lead to a requirement for some 14GW of new generating capacity by 2015 and around 20GW by 2020.

3.2 Indeed, we believe that the Government’s estimates of (grid supplied) electricity demand, projected to remain flat until 2010 and rise by 6% in 2020, are unrealistically low. When the overall level of electricity consumption is

considered, our own estimates predict an increase in electricity demand of around 17% by 2020 and almost 25% by 2025 (see our submission to the DTI's energy projections consultation). The share of electricity generated by gas-fired plant would therefore be closer to 75% by 2025 rather than the 60% figure that appears in the consultation document.

3.3 Electricity market participants value fuel diversity as a means to mitigate fuel specific price risk but will factor other risks and relative capital costs into generating capacity build decisions. To this end, current environmental legislation and planning processes clearly favours gas-fired plant, resulting in only Combined Cycle Gas Turbine (CCGT) projects being positioned to add new capacity to the system. The result of this "business as usual" scenario is that the UK would be highly dependent on gas-fired generation and on imported gas.

3.4 We believe markets are responding to the challenge of providing secure gas supplies by pursuing various large investments in import infrastructure assets, which will provide the UK with a broad variety of gas supply routes. We therefore currently do not see any need for a strategic gas storage, as this would:

- Introduce uncertainties as to when this strategic reserve would be used;
- Distort the market for commercial storage and reduce incentives for its development; and,
- Burden energy consumers with potentially significant additional costs for a level of security that they might not value.

However, we believe that moving away from the current diversity of generation technologies to a reliance on one single fuel would be associated with numerous disadvantages and risks, such as:

- A risk of increasingly volatile electricity prices, as dependence on one fuel leaves generators unable to 'switch fuels' according to relative market prices;
- Global competition for Liquefied Natural Gas (LNG) placing upward pressure on gas and hence electricity prices; and,
- Loss of the ability for the electricity system to provide virtual gas storage by switching off gas plant and running plant using alternative fuels, a capability which has proved so valuable in the current winter when oil and coal plant substituted for gas-fired generation.

3.5 This outcome also has implications for the Government's **carbon dioxide (CO₂) reduction targets**. While replacing retiring coal and nuclear plant with gas-fired generation would provide a long term solution to the impending capacity gap, future carbon emissions would move further off track from the Government's 60% reduction target in 2050.

4 A Diverse UK Energy Future

4.1 We believe that the Government is right to be concerned about these risks. However, we are confident that there is a real prospect of achieving the Government's objectives of carbon reductions, security of supply and affordability within the market framework provided the Government implements a long-term, energy policy framework which aims to reduce energy demand through energy efficiency measures (with a greater emphasis on "consumer pull" rather than simply "industry push") and facilitates the market developing low carbon technologies.

4.2 With this in mind, we propose that the Government adopts both a longer term policy and regulatory framework and a series of shorter term enabling measures in order to ensure that the market can choose from the widest variety of options to deliver a diverse fuel mix similar to that currently enjoyed by the UK and put the UK back on the path to meeting its long-term carbon emissions reduction target. We believe that this would be the most effective way to remove any concerns over achieving security of supply and carbon reductions and result in the most long-term, cost efficient solution for society.

4.3 Our answers to the specific Energy Review questions address many of these proposals in greater detail while additional information on other matters relevant to the Review is presented in the appendices to our response. However, in summary the measures we believe are necessary to provide a long-term framework for a more efficient use of energy and the development of low carbon technologies include:

- **Reducing electricity demand through energy efficiency measures:** We welcome the Government's commitment as part of the recently published revised Climate Change Programme in redefining the Energy Efficiency Commitment (EEC) target to deliver reduced carbon emissions rather than energy efficiency. This will allow for incorporation of new microgeneration technology, for example. We also support the Government's plan to promote energy efficiency measures to consumers and we will continue to supplement this with our own targeted activity. Broadening the concept of energy efficiency to recognise the potential of measures to influence consumer behaviour such as smart metering and real-time displays will also assist in both changing consumer behaviour and allowing for product innovation. There needs to be an industry-wide universal solution for smart metering, with agreed standards, protocols and timetables. We urge a solution where there is a standard base unit with agreed core functionality and communications protocols, allowing flexibility for different supplier provided display devices. Ultimately a change in consumer behaviour, introducing mechanisms for real time data management and product flexibility will change this market into an energy services market.

Industrial and community energy efficiency can be further improved by encouraging greater uptake of Combined Heat and Power (CHP) schemes. (See Appendix 1 on CHP.) The confidence of CHP developers and potential users would be boosted through provision of Climate Change Levy (CCL) certainty and associated CHP exemptions beyond 2012, and appropriate treatment under the European Union Emissions Trading Scheme (EU ETS).

Microgeneration units, such as solar panels, domestic and small commercial micro-CHP units and small scale wind turbines, could usefully contribute to reducing CO₂ emissions by displacing more carbon intensive centralised generation and cutting transmission losses. They could also stimulate action amongst consumers and small and medium sized enterprises. However, there remain significant barriers hindering the growth of microgeneration, particularly in the areas of settlements and metering. Whilst we welcome the recently published DTI Microgeneration Strategy, Government needs to set clear policy objectives to drive through the necessary changes quickly, with costs appropriately shared across system users.

- **Carbon pricing mechanism:** In order to promote diversity in the longer term we are seeking a robust policy framework which underpins a value for CO₂

emission reductions and strongly support continuation of the EU ETS into phase 3. We also believe that an EU ETS phase 3 allocation period of at least 15 years is needed which is more closely aligned to investment cycles in large-scale generation technology. This will enable investors in low carbon technologies and energy efficiency measures to make confident judgements regarding investments whose viability may depend on a price for carbon. The carbon framework is also relevant to enabling companies to take prompt decisions between gas, coal and nuclear technologies for replacement plant. Continuity and consistency is vital to demonstrating a track record which gives confidence to investors in long-term assets.

The current international mechanisms (Clean Development Mechanism and Joint Implementation) should be maintained with no limit on their use under the EU ETS in order to minimise the cost of compliance during the transition to a global framework. Meanwhile, the EU ETS should be expanded to cover other sectors such as transport.

- **Renewables:** Although renewable generation will not by itself be able to fill the anticipated generating capacity gap, it has an essential and increasing role to play both in securing diversity in generation and carbon reductions. (See Appendix 2 on renewable energy.) We support the Renewable Obligation (RO) and believe it should be retained as a long-term stable framework to maintain value in existing projects, but also to stimulate investment in new viable renewable energy generation.

To achieve the renewable target set for 2015, offshore wind and dedicated biomass has to form a central component of renewable generation in the UK.

We welcome the Government's announcement of a review of co-firing as part of the Energy Review. We believe the current co-firing regulatory restrictions are inconsistent with the market approach represented by the RO and are preventing significant contributions to the Government's renewable energy and carbon reduction targets.

For more emergent technologies (notably marine renewables) a longer-term framework is needed to ensure they fulfil their significant future potential to contribute to the generation mix. Government should build upon the DTI's 'Marine Renewables Deployment Fund' through additional financial support for research and development of marine wave and tide technologies, and appropriate legal and regulatory mechanisms.

- **Clean coal:** As part of a balanced package to deliver the twin objectives of security of supply and carbon reduction, we support research into carbon capture and storage (CCS) projects. We believe that considerable financial support will be required for CCS projects (well beyond the £35 million currently committed). Given the inherent CO₂ advantage of gas-fired generation, we believe that CCS is only a sensible priority for projects based on clean coal technology. Resolution of significant regulatory and legal issues (for example, carbon transport and storage infrastructure, treatment of CCS under EU ETS and international agreements, ownership of long-term liabilities, etc.) will be required.

In the short term, the role of existing coal infrastructure as the basis for the development of next generation technology needs to be appropriately

recognised. As an interim step to achieving commercial and technical viability of CCS technology, we believe that Government should facilitate the development of carbon capture ready projects with the capability of CCS technology being fitted at a later stage.

- **Nuclear:** Nuclear power currently contributes approximately 20% of our UK power generation requirements and emits very little CO₂ from generation. Much of this plant is planned to close over the next 15 years. This will add to the dual challenges of meeting the nation's security of supply standard and reducing emissions of CO₂. Energy policy must create an environment which encourages the development of alternative, low carbon emitting forms of generation, or the life extension of this plant or its replacement. Energy policy should not distort power markets in favour of Nuclear generation but rather encourage competitors to pursue different strategies and technologies to deliver both security and low emissions. Any specific support for nuclear power should be directed at the issues of waste disposal and decommissioning.

For any relaunch of a nuclear programme in the UK, in addition to the tests of economics, investors would be unlikely to contemplate the large investments required before public acceptance is assured. Uncertainty surrounding the longer term value of carbon allowances, the protracted permitting processes, and the lack of clarity on waste storage and final disposal remain to be addressed.

There would also be significant additional costs and risks associated with early projects. It is clear that the viability of any new nuclear programme would depend on a partnership between the private sector and Government in which each party took responsibility for the risks it was best able to control. (These are discussed in our answer to Question 3.) Even if these measures were implemented without delay, it should be recognised that any new nuclear build programme is unlikely to increase total UK nuclear power output beyond current levels before 2025.

- **Facilitating investments in low carbon technologies:**

We believe that investors in long-term generating facilities should be provided with incentives including (see also Appendix 3 on tax issues):

- **Corporation tax relief:** companies investing in low carbon technologies should be able to claim immediate tax relief for all expenditure in a way that offsets an existing tax bill.
- **Research and development:** pump-prime emerging renewable and carbon capture and storage technologies through appropriate support of R&D initiatives and large-scale demonstration projects.
- **Low carbon technology development costs:** given the particular commercial risk of stranded costs attaching to early stage development work, provisions to limit and reimburse abortive costs where these can be attributed to the Government or EU will be required.
- **Reform of planning and consents processes:** The present processes are becoming increasingly protracted causing uncertainties for investors that need to be addressed if the Government's desired outcomes are to be delivered. An

urgent review of the planning and consents framework, including the environmental permitting process, is required for all types of generation.

- **Fuel poverty:** The long term solution to eradicating fuel poverty will be achieved mainly through continued improvement in the UK housing stock, supplemented with new technology. In the short term though, real time support will be required to increase income and reduce fuel costs. Critically, the balance between short and long-term needs must be met. Addressing fuel poverty should be a shared responsibility between Government departments (DTI, DEFRA, DWP, DH and ODPM) and local authorities. Government bodies and agencies are best placed to identify the fuel poor, enabling fuel poverty to be evaluated and tackled in a more effective way. The supply industry should continue to offer products and services aimed at those most in need through their Corporate and Social Responsibility (CSR) programmes. This could be supplemented with further spend raised through the decoupling of fuel poverty and carbon saving goals from EEC. This will ensure proper focus on both targets.

- **Measures to manage short to medium term capacity requirements:**

Many of the technologies that contribute to diversity cannot realistically be online until the end of the next decade or later. By signalling an early commitment to diversity by putting in place a clear framework, the Government will avoid the risk that the market will overbuild CCGTs prior to the availability of diverse technologies. The risk could, in turn, undermine the willingness of operators to invest in new technologies, jeopardising the prospects for a diverse energy mix.

We believe that the Government should take appropriate measures to preserve a degree of diversity, similar to the one that the UK currently enjoys, in order to bridge the transition phase until new low carbon technologies are technically and commercially available. This would mean allowing technically functional and safe plant to continue to contribute to meeting the UK's growing electricity demand in the interim. We therefore support the extension of the lives of existing nuclear power stations, provided that the necessary safety approvals are gained.

Existing coal and oil plant should not be further disadvantaged through environmental legislation, to ensure it can provide the peaking and reserve capacity that the British electricity market requires. Appropriate allocations under both Phases 2 and 3 of the National Allocation Plan (NAP) have an important part to play in promoting this outcome and enabling a smooth and stable transition to a low carbon world.