Client - briefing

The Renewable Energy Roadmap

DLP BRIEFING NOTE 63

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In July 2011 the Department for Energy and Climate Change published the Renewable Energy Roadmap setting out priorities and actions to meet the targets for renewable energy to 2020. The roadmap will be updated annually.

As set out in the Ministerial Foreword (incidentally signed not only by the Secretary of State but also the responsible Members from the devolved nations):-

"The UK Renewable Energy Roadmap sets out a comprehensive suite of targeted, practical actions to accelerate renewable energy in the UK – driving innovation and the deployment of a wide range of renewables."

It explains that a 'pipeline' of major projects indicates operational capacity of 29GW of renewable energy is possible by 2020 and the roadmap predicts that the UK can deliver 234TWh of renewable energy by 2020 (equivalent to 15% of projected energy consumption). This pipeline comprises capacity of approximately 22GW (including 11GW of onshore and 6GW of offshore wind) of renewable electricity generating capacity i.e. in planning, consented or under construction.

In 2010, 54TWh (3.3%) of the country's energy consumed was renewable. A 17% annual rise in consumption is required to meet the 2020 target of 15% of its energy consumption from renewable sources. Between 2009 and 2010, renewable electricity capacity increased by 15%, but the growth in generation was lower due to less rainfall and lower wind speeds.

But although the pipeline *"puts us on track to deliver approximately 29 GW of capacity by 2020, significant uncertainties remain and* ***we still urgently need new renewable projects to come forward to ensure we meet the 15% target and longer term carbon reduction targets."***

General Actions

The paper proposes the following general actions to overcome identified barriers to deployment:-

1. **facilitating access to the Grid (it notes that 5.5GW of consented projects are waiting to be connected). The construction of an offshore grid is crucial and the onshore grid will be improved.**
2. **ensuring long term investor certainty.**
3. **tackling delays both pre- and post-consent.**
4. **ensuring sustainable bioenergy feedstock supply.**
5. **facilitating development of renewables supply chains.**
6. **encouraging innovation.**

The roadmap then sets out eight technology action plans.

Onshore Wind

There is in excess of 4GW capacity installed, generating approximately 7TWh per annum. It is possible for onshore wind to contribute approximately 13GW by 2020 (a growth of 13% annually, which is less than the 2009-10 growth rate).

The pipeline of proposed, consented and under construction turbines comprises at least 6.5GW in Scotland, over 2GW in England, 1.5GW in Wales and 1GW in Northern Ireland.

It explains that 88% of pending applications are local-level and 12% are for at least 50MW and thus will be a governmental decision.

It also explains that *"the average time from identifying a site to exporting electricity to the grid is around five years"* which is seen as a problem.

The specific priorities and actions are:

- **To minimise investment risk** through implementing the proposed market reform and Renewables Obligation transition measures to secure long-term certainty. The DECC will consult on RO banding levels in summer 2011 with decision published later in the year; new banding levels will come into force in April 2013; a smooth transition from RO to FIT will include the two running concurrently until 2017.

- **To reform the planning system**, for example through the formal publication of National Policy Statements, the replacement of the Infrastructure Planning Commission and through reforming the system in England to ensure economic growth is supported whilst letting communities have a greater say and stake in development. The guidance on issues of public concern such as noise impact will be improved. It is noted that 54% of applications are consented in England, approximately 60% in Wales and Scotland and around 80% in Northern Ireland. However more than half of the refused proposals that are appealed are subsequently allowed. The 'planning guarantee' that applications will take no longer than 12 months to reach a decision is reiterated, with details to be published later in 201. The Local Government Resource Review will publish proposals for the local retention of business rates.

- **To overcome radar interference** DECC and other stakeholders will develop, resource and implement radar mitigation programmes for defence and civilian radar over next few years.

- **To ensure cost-effective grid investment and connection**, the National Grid will consult on proposals for suitable long term financial security arrangements. Ofgem will review the transmission charging regime and implement any changes by April 2012. The Electricity Networks Strategy Group will update the assessment of investment through to 2020 and put in place a system to monitor delivery.
  Offshore Wind

A capacity of 1.3GW is installed across 15 windfarms (with a further 4GW with consent and 2GW in planning). It is expected that 18GW could be deployed by 2020 and a further 40GW possible by 2030.

The specific priorities and actions include:

- **To innovate in order to reduce costs, e.g. develop testing facilities.**
- **To develop the supply chain, e.g. provide £60m to develop new manufacturing facilities.**
- **To minimise investment risk and to improve access to finance.**
- **To ensure cost-effective grid investment and connection.**
- **planning / consenting**: consultation on Marine Conservation Zones (DEFRA/WG) 2012, identify gaps in evidence base for offshore SEA.

Marine Energy

A capacity of 300MW could be deployed by 2020 with significant increases beyond.

The specific priorities and actions include:

- **To manage the risks and costs of R&D and to secure investment for commercial deployment.**
- **To develop the supply chain infrastructure.**
- **To publish response to feedback on SEA Offshore Energy by the end of 2011 (DECC), identify specific sites through Marine Energy Infrastructure Study (WG), to set up a working group with devolved nations to consider how to address barriers to planning and consenting process, to report by end of 2011.**

Biomass Electricity

There is already 2.5GW in operation, generating 11.9TWh (the single largest contribution to renewable electricity generation). A capacity of 6GW is possible by 2020. *"The majority of generation comes from waste (62% – predominantly landfill gas), although co-firing and dedicated biomass plant are also significant (21% and 17%). Anaerobic Digestion (AD) and other advanced conversion technologies are less well established, particularly at scale".*

Specific priorities and actions include:

- **To minimise investment risk, including the publication of the UK Bioenergy Strategy by end of 2011.**
- **To de-risk supply of sustainable feedstocks and to introduce mandatory sustainability standards for all biofuels for electricity generation by April 2013 and make a 'GHG lifecycle assessment tool for biomass heat and electricity generation' by December 2011.**
- **DEFRA to deliver actions from Waste Review, such as publishing guidance to help decision-makers and to identify commercially-viable routes by which communities can realise benefits from hosting infrastructure**
- **To improve access long-term waste fuel contracts and access to finance.**

Biomass Heat

In 2010 12.4 TWh of heat generated from biomass (of which only 0.3TWh from Energy from Waste). A capacity of 50TWh possible by 2020, the majority from biomass boilers including district heating and CHP

Ground and Air Source Heat Pumps

37000 pumps currently installed across the UK, generating 0.7TWh by the end of 2010. Capacity of 22TWh possible by 2020.

Renewable Energy in Transport

3.6% of road transport energy demand from renewable sources in 2010, up 0.2% from 2005 (mostly biofuels). Priorities include assuring the sustainability of biofuel supplies, improving infrastructure and supply chain development and support for Ultra Low Emission Vehicles.

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