



# DISTRIBUTED ENERGY- THE CHALLENGES AHEAD

This is the latest in a series of Bulletins on aspects of BERR'S Consultation on the UK's Renewable Energy Strategy.

Previous Bulletins have covered, and future issues will cover:

- ▄ Bioenergy
- ▄ Centralised Energy
- ▄ Transport
- ▄ Energy Efficiency
- ▄ Renewable Heat

Distributed energy (DE) is the local supply of electricity and heat which is generated on or near the site where it is used. In the Government's latest consultation for a new renewable energy strategy, it is acknowledged that DE could play an important role in tackling the carbon impact of the built environment. Currently, DE in its widest sense delivers around 10% of the UK's electricity supply. However the contribution of renewable DE is very low.

**Distributed energy has a number of important benefits:**

- ▄ By opting for a distributed local energy solution, consumers can move from being passive consumers of energy to become active producers contributing to energy and climate goals - something

which is attractive to many people and organisations;

- ▄ Alongside energy efficiency measures, DE has a crucial part to play in reducing the carbon impact of the built environment;
- ▄ DE technologies at household level can be installed and connected relatively

The lack of take up of the technologies to date is down to some key challenges that DE faces. Firstly, there are technology-specific issues. All renewable DE technologies have certain requirements to be able to operate and, therefore, not all locations are suitable. For example, micro-wind generation needs high and

**Examples of renewable Distributed Energy technologies currently in use in the UK:**

Technology	No of Installations	Average cost of retrofit
Solar water heating	90,000	£3,900 (2KW)
Air- source heat pumps	>150	£8,500 (11KW)
Ground - source heat pumps	745 - 2000	£10,500 (11KW)
Solar photovoltaics	2,300	£10,500 (1KW)
Micro Wind	1,100	£5,000 (1KW)

quickly, giving a rapid contribution to the EU 2020 renewable energy target;

- ▄ DE can help tackle fuel poverty - household technologies cut the amount of energy that the consumer needs to buy;
- ▄ DE can increase overall system efficiency as the losses that occur in transmission are reduced.

In spite of these benefits and an increased desire on the part of consumers to be involved in microgeneration, the scale of consumer level renewable DE schemes remains low.

constant wind speeds to be effective and other buildings in the locality can cause sheltering. Government policy can do little to affect individual location issues other than to continue to support effective R&D.

Other barriers can be influenced by policy. Most critical is the cost factor. Microgeneration technologies are expensive compared to larger scale renewable generation. Historically, planning and regulatory barriers have also been a disincentive to new schemes, and there remains a problem that there is an information gap. Consumers find it difficult

to access comprehensive and user friendly information about the available technologies, regulatory frameworks and financial implications.

The Government is committed to assisting the development of DE. In the 2007 Energy White Paper it pledged to level the playing field for DE by overcoming some of these key barriers. There are already a range of new policies in place or being developed to address these constraints. The Low Carbon Buildings Programme has introduced grants for adopters of renewable energy schemes and ongoing support is available through the Renewables Obligation. Planning rules have been relaxed to assist with microgeneration schemes and under the Planning Policy Statement, planning authorities are expected to set targets for renewable distributed energy production in new buildings.

However it is recognised that more needs to be done to tackle the costs and the information gap if DE is to become a viable alternative. In its consultation paper, the Government is seeking views on the most effective financial reward scheme to encourage DE schemes, especially at household and community level. Simply requiring all new buildings to be carbon neutral will not suffice as an estimated two thirds of all homes that will exist in 2050 are already built.

Analysis suggest that an effective financial reward scheme for microgeneration focused on domestic schemes would produce 17.2 TWh of additional renewable energy in 2020 (approximately 1% of total demand) at an approximate resource cost in 2020 of £290-330 million. Of this, renewable heat schemes would deliver around 15.4 TWh at a cost of £155-175 million. On cost-effectiveness grounds alone there are clear

reasons for concentrating on heat technologies. However, the Government does not want to exclude householders who wish to invest in electricity microgeneration.

Therefore, what is required is a financial reward scheme that effectively encourages investment in distributed energy schemes across the board. The Government has already stated that it intends to move away from grants as the primary incentive. The Renewables Obligation (RO) was designed to increase deployment of renewable energy schemes. It is effective for large scale projects and gives certainty and incentive at the top level. However it has not been so successful at the micro/domestic level.

It has already been announced that the ROCs (Renewables Obligation Certificates) granted for microgeneration will be doubled in April 2009 but this will not be enough. Consumers at a domestic/community level are discouraged from participating in the RO by the administrative burden of having to register to get ROCs and then find a buyer for them. Whilst using an agent helps, a simplified system is needed. Also, the nature of the RO means that its value is dependant on market fluctuations. Perhaps most crucially, the RO in its current form doesn't really help the domestic/community user because it gives no significant contribution to the upfront capital cost. The Government is therefore seeking to introduce some financial reward scheme that would give a front loaded payment to assist in the initial capital cost. This could either be done by adjusting the RO scheme by providing a high number of ROCs in year one, or by introducing a feed-in tariff. A very high feed-in tariff could be paid in the first year, dropping down in subsequent years. It is felt that it would be less problematic to switch from ROCs to a feed-in tariff in the microgeneration sector,

as it is far less developed, thus delays and uncertainty caused by the switch would be less than for mainstream generating.

Whilst the differences between the RO and a feed-in tariff system are not significant, the Government seems, on balance, to be leaning toward the introduction of a feed-in tariff for microgeneration. It is also clear that the focus will be on microgeneration of heat rather than electricity. The Government also states that it is committed to continuing to work on improving the dissemination of information and the relaxation of planning regulations to assist in the development of distributed energy schemes. It remains to be seen to what extent distributed energy is prioritised within the overall renewable energy strategy despite the rhetoric.

**This Bulletin aims to update you on legal issues of concern or interest. It is not a substitute for taking specialist advice in individual cases. For more information about these or any other issues please contact:**

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