



Issues to be tackled

It is clear that both the market and the industries in that market are at a very early stage of development. This chapter looks at addressing factors that could constrain widespread deployment and that need to be addressed to encourage a sustainable market.

Constraints

There is a range of constraints that currently affect the deployment of microgeneration technologies. These can be roughly divided into cost constraints, information constraints, technical constraints and regulatory constraints.



Cost constraints

The lack of demand for microgeneration has restricted the extent to which the industry has been able to exploit scale economies and learning effects in their production and installation. This means that the costs of these products remain high enough to act as a deterrent to mass market demand, leaving the industry in a difficult situation - demand is low due to the high up-front costs, yet it is difficult to bring costs down without increased demand.

In most cases the natural development of a market will eventually lead to costs falling (as the EST report demonstrates) to a level where they become (theoretically) attractive to

consumers. But, without efforts to stimulate demand, this might not happen for many years meaning that we lose the opportunity in the medium term to gain the benefits that microgeneration has to offer in relation to sustainable and secure energy supplies.

Information constraints

Even those technologies that are at the cheaper end of the spectrum are not being purchased to the extent that their lower costs might suggest. This indicates that there are other factors hindering take-up.

Inadequate promotion and poor information on microgeneration, and the lack of a widely understood accreditation system for products and installers, reduces the incentive for consumers to purchase microgeneration products due to insufficient signals regarding the quality and performance of these products. Even where there is a willingness to buy some form of microgeneration, prospective customers find it difficult to find independent sources of information about the suitability and quality of products and also the reliability of the companies involved. It is not just consumers that suffer from a lack of



information. Local authorities have a key role to play in relation to microgeneration, particularly with respect to planning permission for new developments and for the installation of some microgeneration technologies on existing buildings. The performance of local authorities in these areas that touch on microgeneration will be adversely affected by inadequate information.

Lack of robust product and performance information also makes it difficult to interest the construction industry and building designers in using microgeneration technologies in new build.



Technical constraints

There is a range of issues surrounding metering, connection to the distribution network and balancing and settlement arrangements that could be preventing widespread take-up of electricity generating technologies.

New metering technology is not a pre-requisite for the installation and operation of microgeneration technologies, although it is currently necessary under the Balancing and Settlement Code¹⁸ if suppliers are to receive any credits for their customers who export power. Benefits in terms of reduced energy bills would be achieved with the existing system of one-way import meters, but in order to take advantage of the range of potential benefits on offer (access to Renewable Obligation Certificates (ROCs), payment for exported electricity) data on the import, export and generation of electricity will be required. The

cost of three separate meters and, more importantly, the cost of collecting the data may provide a further disincentive to the prospective consumer. Judicious use of profiles (similar to those that are currently used in the settlement of domestic consumption) could have a useful role to play, but there is presently a lack of data to cover all the various technologies. A report recently carried out for the DTI¹⁹ into the difficulties being faced by small generators when connecting to the distribution network suggests that there are barriers still to be overcome.

At the moment, the penetration of electricity generating microgeneration technologies is low, so the amount of electricity exported into the distribution network has a minimal impact on the technical performance of the distribution network. However, as the number of microgenerators increases it will be important to ensure that the overall network performance is not adversely affected whilst at the same time the arrangements do not hinder the development of a sustainable market. This is unlikely to be an issue for many years, but we need to plan now to ensure future network stability.

The special incentives for innovation in Ofgem's last Distribution Price Control²⁰ were specifically to incentivise the distributors to respond to

¹⁸ <http://www.elexon.co.uk/bscrelateddocs/BSC/default.aspx>

¹⁹ <http://www.ensg.gov.uk/index.php?article=32>

²⁰ http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/7615_14504g.pdf



microgeneration (and other distributed generation) with efficient development and management of assets.

Regulatory constraints and opportunities

There are areas where regulation can provide an opportunity to encourage the development of a sustainable market. In particular the planning regime and Building Regulations can have an important contribution to make.

There are two aspects to the planning regime that impact on microgeneration installations - the planning permission required for the installation of microgeneration on existing houses and the regulations governing planning requirements for new developments. In relation to existing buildings, concerns have been expressed regarding a lack of clarity as to whether specific planning permission is required, different interpretations of the rules by local authorities and the

sometimes complex process of seeking planning permission.

As for the positive contribution planning requirements for new build can make - see box that outlines the impact that positive planning policies in Merton and Croydon have had on the installation of renewable generation.



Trailblazers: Merton and Croydon

London Borough of Merton set the standard for planning policy by introducing a requirement that all new non-residential developments would have to reduce predicted carbon emissions by 10% through the use of onsite renewable energy sources. Croydon Council followed the lead by including in their development plan an expectation that all developments (either new build or conversion) with a floor space of 1,000m² or more than ten residential units to incorporate renewable units incorporate renewable energy equipment to provide at least 10% of the predicted energy requirements. In total, approximately 70 local authorities have either included, or are looking to include, similar policies in their plans.

These policies have had concrete effects. In Merton, since the introduction of the policy 5 developments have been built or are under construction using a total of 10 Windsave rooftop turbines, 5 6kW Proven wind turbines, 18 Swift micro-turbines, 3 ground source heat pumps and 2 solar PV arrays.



Summary Box

- There is a range of constraints currently preventing wide-spread uptake of microgeneration technologies
- Cost constraints - relatively high upfront costs constrain demand, demand needs to be stimulated to allow the industry to exploit scale economies and learning effects in production and installation.
- Information constraints - inadequate promotion and poor information regarding the costs, benefits and performance of the various technologies can hinder growth in demand and can also make it difficult to interest the construction industry and building designers in using these technologies.
- Technical constraints - including metering, connection to the distribution network and balancing and settlement arrangements
- Regulatory constraints/opportunities - the regulations governing planning requirements for new build, planning permission for microgeneration installations on existing build and the Building Regulations can provide opportunities for the microgeneration industry.

