

Renewable and Distributed Generation – the Regulatory Dimension

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Although many technical strides have been made in new and efficient renewable and distributed generation technologies, the commercial, economic and regulatory issues surrounding their entry into general use remain complex.

The paper examines the underlying costs of the competing technologies. Renewable and distributed generation raises a large number of economic complexities and trade-offs: the variety and non-comparable nature of alternative technologies; their differing modes of operation; points of use; joint products; and implications for wider system security. Moreover the current cost of these technologies means that even the most efficient tend to be less economic, when viewed from a holistic system and market perspective, than more traditional sources of generation - particularly when taking system security considerations into account – and may remain so for some time.

Thus, in the short to medium term, encouraging renewable and distributed generation investment will rely on incentive mechanisms or obligations. We consider the four generic ways in which this can be done, specifically:

- Setting targets for renewable energy use through obligations on energy suppliers to purchase a proportion of their energy from renewable sources
- Renewable energy certificates, usually in conjunction with an obligation. These may be tradable and can create some complex economics around the various schemes. They would likely form part of wider emissions trading regimes, such as those introduced in Europe
- Subsidies for investment in renewable and distributed generation. These may be set in relation to economic factors or through taxation relief and grants
- Demand-pull mechanisms, which provide consumers directly with the chance to opt for renewable energy sources for their supply.

The paper examines how these approaches have been applied in practice and how successful they have been.

But even in the presence of incentive arrangements for renewable and distributed generation, network investment issues remain. New technologies are required to manage the operation of the distribution network. Network reconfiguration to support distributed generation will require investment. Therefore, regulatory incentives are needed to support the distribution system investments that are required and associated R&D in the context of increasingly liberalised markets. The paper considers the form that these incentives could take and the international experience gained so far in their use.

Finally, the paper concludes by describing some possible scenarios for the future regulation of renewable and distributed generation.