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Potential for Microgeneration

Project Title: Potential for Microgeneration

Energy Type: Distributed Generation (Wind, Solar, CHP, Networks)

Client: Energy Savings Trust (for UK DTI)

Location: UK

Project Size: Potential for total UK domestic market

Project Scope: The Energy Saving Trust, in conjunction with Element Energy Limited, Senergy Econnect and Cambridge University Faculty of Economics, has been commissioned by the DTI to study the UK potential for microgeneration technologies.

The technologies included in this study are:

- Solar photovoltaics (PV)
- Wind turbines
- Small hydro
- Active solar water heating
- Ground source heat pumps (GSHP)
- Bio-energy
- Small CHP (renewable and non-renewable)
- Hydrogen energy and fuel cells

Microgeneration is defined as any technology, connected to the distribution network (if electric) and with a capacity below 50-100kW.

For microgeneration to have an impact on the UK electricity system, units must be installed by consumers in their millions. This will require a new highly decentralised approach to energy planning and policy.

In addition a new understanding of the likely interaction between microgeneration technology and its multitude of potential end users (the general public) must be developed.

Key Achievements: A sample network was modelled with increasing level of micro-generation and the following conclusions were drawn:

- Any network issue can be resolved.
- This is a matter of economic rather than technical limitations.
- Extrapolation to the GB system is very difficult, ranging from £150m-£240m to mitigate voltage rise, £60m-£650m to mitigate reverse power flow, and £2.5bn (DNO estimate) to mitigate all network issues.
- Alternative mitigation methods other than the traditional reinforcement are possible.

Completion Date: 2006

Further Information: Download report from DTI website