



## SUSTAINABLE ENERGY ASSESSMENT SERVICES

### INTRODUCTION

Microgeneration (normally defined as <50kW) has been identified as a key component in the reduction of carbon emissions and as a contributor to the UK's renewable targets. The potential for this resource and other renewables is becoming widely recognised within the UK.

The 2007 Energy White Paper (EWP) encourages investment in micro-generation, which is likely to be a substantial market in the future. Permitted Development Rights, capital incentives and grant schemes such as the Low Carbon Buildings Programme, are helping to break down the barriers associated with installation of these technologies.

There is also an emerging market for energy service companies, which can help soften financial barriers. The Energy Saving Trust has stated that micro-generation is the only realistic option for cutting carbon dioxide emissions from energy generation for the mass market.

In 2005, 4% of the UK's electricity supply came from eligible sources of renewable energy and continued micro generation installation will no doubt contribute to the Government's longer-term aim of reducing CO2 emissions by 60% by 2050.

Harrison Group recognises the potential contribution that microgeneration can make towards sustainability at policy level and the opportunities that the technologies present for energy efficiency initiatives and fuel security.

### SERVICES PROVIDED

#### Feasibility / Renewables Desk Study

This initial stage assesses the site and its suitability for renewable power generation. It identifies possible technical constraints associated with technologies through desk-

based research. The desk study includes consideration of ecological and historically important sites and proximity to neighbouring buildings.

#### Planning Assistance

Planning permission requirements will be assessed by working with the Local Authority in order to establish the eligibility to employ a General Permitted Development Order. Where such an Order applies, planning permission would not normally be required.

Where planning permission is required, potential technical issues identified within the feasibility and planning stages will be addressed, in conjunction with the local authority. This might include: -

- Noise assessments
- Ecological assessment
- Landscape and Visual Impact Assessment
- Geology / groundwater resources
- Air quality

#### Technical Appraisal

To allow for a more detailed feasibility assessment of the proposed microgeneration scheme, an appropriate technical assessment will be utilised to calculate the following: -

- Energy Yields
- Energy Saving
- Carbon Saving
- Payback period
- Grants available

#### Foundation Design

A comprehensive in-house geotechnical capability is available for foundation design; where appropriate this may be associated with renewable technologies.





**GENERAL PERMITTED DEVELOPMENT ORDERS**

Since April 2008, General Permitted Development Orders (GPDO's) apply to all micro-renewable installations. Where they do apply, planning permission is not normally required. The following factors will determine the application of GPDO's. The Harrison Group can assess these criteria against your project: -

- Size and scope of project
- Siting in areas of historical or ecological importance
- Microgeneration Certification Scheme

**GENERATION METHODS**



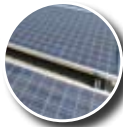
**Wind**

- Either roof mounted or free standing wind turbines, well sited and with a suitable wind resource can be an effective means of power generation. Assessment of the suitability of the wind resource and location can be carried out on site.
- GPDO's do not yet apply to turbines unless a microgeneration certificate is obtained.
- Technical assessments that may be required include noise, shadow flicker, ecological assessments, landscape and visual impacts and consideration of proximity to neighbouring properties.



**Ground Source Heating**

- Heat output from ground source heat pumps, whether installed vertically or horizontally, is optimised when used for heating properties.
- GPDO's apply to all geothermal installations.
- Constraints include space for associated infrastructure. Underlying geology (thickness, thermal conductivity and nature of deposits), groundwater, aspect and relief, determines the viability of the heat source. These can be determined by a geotechnical ground investigation and desk based assessment.



**Solar Thermal / Solar Photovoltaic (PV)**

- Roof mounted or freestanding arrays will heat water (Solar Thermal) or generate electricity directly from the sun (Solar Photovoltaic).
- GPDO's apply to these arrays except when reaching a certain size, when located near the boundary of the property or installed within areas of historical importance.
- Positioning of panels to achieve optimum performance is assessed on site. Shadowing effects from other buildings and vegetation combined with analysis of local meteorological conditions will contribute to confirming viability.



**Biomass**

- Biomass boilers use sustainable fuel sources such as wood pellets rather than fossil fuels for heating homes and supplying hot water.
- GPDO's apply in most cases unless the proposed flue is greater than 1m above roof height or installed within areas of historical importance.
- The main constraints are sufficient storage space for fuel and its availability.

