



**Solar PV**

**Wind Turbines**

**Consultancy – Supply - Installation**



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## Who are we?

- Segen Ltd founded 2005
- Offices in Aldershot, Stroud, Lancaster and Bolton
- 34 employees



## What do we do?

Segen are a multi-technology, multi-disciplinary renewable energy company with a national reach. We offer a range of consultancy, supply and installation services to the commercial and public sectors.

### Technologies

- Solar PV
- Wind Turbines

### Services

- Feasibility studies and technical site surveys
- System design, specification and engineering
- Planning consultancy
- Advice on grants and funding
- System supply, installation and maintenance



**Segen**

## Solar PV Systems

Solar PV panels use silicon semi-conductors to convert light from the sun into electricity. The energy generated is 'free' and renewable, and PV systems emit no carbon dioxide.

## Benefits

- PV is easily fitted to both new and existing buildings
- Modular system that can be specified to almost any size
- 'Plugs-in' easily to existing electrical infrastructure
- No moving parts, so basically maintenance free post-installation
- Provides a consistent annual energy supply during daylight hours (even on cloudy days)



### Segen's PV Services

- Site surveys/feasibility studies
- Planning applications and related consultancy
- Quotations and estimations
- System design and engineering
- Supply and installation

### Segen Technical Centre, Stroud

Segen operate a fully equipped design and technology centre in Stroud. Working in collaboration with our sales team, site surveyors and project managers, our experienced renewable energy engineers are able to design high performance, cost effective PV systems perfectly suited to the requirements of our clients.

# Wind Turbines

Wind turbines generate renewable power by converting the energy in the wind into electricity

## Benefits

- UK has the best wind resource in Europe
- On the right site, wind turbines can be very cost effective
- Turbines act as a visible symbol of a commitment to clean energy



### Medium Wind Feasibility Studies

Bigger wind turbines produce more energy, more cheaply than smaller ones and many commercial and public sector sites are suitable for turbines in the 50-250kW range.

A Segen MFWS includes:

- Technical and photographic site survey
- Energy generation estimates
- Planning & DNO consultation
- Detailed analysis of project economics
- Clear recommendation on next steps



### Segen Planning Department, Lancaster

Attaining planning permission for wind turbine projects can be a difficult and complex process.

Segen's dedicated planning team in Lancaster allows us to submit and manage high quality planning applications on behalf of our clients, taking the pressure off them and maximising the chances of a successful outcome.

We offer a complete range of standard and bespoke planning consultancy services.





## CO<sub>2</sub> Reductions and Economic Benefits

The energy produced by PV systems and wind turbines is totally CO<sub>2</sub> free. The emissions (embodied CO<sub>2</sub>) associated with the production, installation and maintenance of the systems themselves are minimal and are usually recovered within 2-5 years.

### April 2010 Feed-In Tariff

From April 2010 it's proposed that UK will have a Feed-In Tariff, paying owners of renewable energy systems a guaranteed price for every kWh of energy generated. This will radically improve the economic payback times of solar PV systems and wind turbines.

Technology	Scale	Proposed Tariff
PV	<4kW (new build)	31.0p
PV	<4kW (retrofit)	36.5p
PV	4-10kW	31.0p
PV	10-100kW	28.0p
PV	100kW-5MW	26.0p
Wind	1.5-15kW	23.0p
Wind	15-50kW	20.5p
Wind	50-250kW	18.0p
Wind	250-500kW	16.0p
Wind	500kW-5MW	4.5p

### WES 30 Wind Turbine – Economic Analysis

Here we look at the economics and CO<sub>2</sub> savings of a medium-sized wind turbine.

- Max System Power: 250kW
- Expected Installed Cost: £500,000
- Annual average wind speed at 40m: 5.3m/s
- Expected Annual Output: 330,000kWh (units)
- CO<sub>2</sub> Reduction: 141,000kgs
- Annual Income from FIT (18p per kWh) : £59,400
- Annual Bill Saving (10p per kWh): £33,000
- Annual Maintenance Costs: £3,000
- Total Annual Income/Saving £89,400
- Expected Payback Time: 5.59 years
- Annual Return on Investment: 17.88%



# Segen

## Questions Please

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