



# Hybrolights

Woking Borough Council has introduced a number of ground-breaking measures to protect the environment and reduce pollution to make Woking a cleaner, greener Borough. The Council has been awarded Beacon Council Status (2005 – 2006 Sustainable Energy) and in 2001, The Queen's Award for Enterprise, Energy Services.



One of its latest initiatives is to explore lighting technologies powered by renewable energy. As well as having a number of environmental benefits, the lighting could increase public safety by being installed in poorly-lit areas across the Borough.

In June 2005, Thameswey Energy Ltd, a subsidiary company of Woking Borough Council, worked with Energy Equipment Testing Services Ltd (EETS) to install and trial a hybrid renewable energy street light. Following a successful trial, EETS installed seven further hybrolights, which are currently being trialled at the test site in Manor Way Car Park, Old Woking.



As hybrolights use renewable energy, they produce less pollution, greenhouse gas emissions and carbon dioxide than standard street lights. Approximately 170kg of carbon dioxide emissions are saved per light, per year.

## How do hybrolights work?

Hybrolights are powered by two forms of renewable energy: solar and wind. The energy is harnessed by four photovoltaic panels and a wind turbine. Each lighting column has a solar battery underground which, once fully charged, stores enough energy to light the column for three to five days. The battery has a lifetime of approximately ten years.

Sensors also monitor light levels to ensure the lights switch on at dusk and off at dawn.

### Technical information

- Height to photovoltaic panels: 8 metres
- Height to the top of the installation: 9.4 metres
- Photovoltaic panels: four BP solar 590 modules, 85 watts each
- Wind turbine: vertical axis wind turbine, 100 watts
- Light intensity: 10 lux directly under light, diminishing to one lux at 12 metres

### Financial information

- Cost per unit for installation (including commission work): £7,500
- Payback period: 2.6 years

The unit cost includes installation, maintenance, operation and a replacement battery. This compares with approximately £1,000 for a standard street lighting column (excluding installation, maintenance, operation and connection to the grid).

