Junior Green Power Ed

The Junior Green Power Ed system features the popular Rutland 503 Windcharger. It is compact, easily portable and is the ideal tool in the first steps to learning about renewable energy. Included in the package are:

- Rutland 503 Windcharger - generates 25w @ 10m/s (22mph) and up to 80w
- 30 Watt Solar Photovoltaic Panel (Dims:60x50x5cm Wt:4kg)
- Junior Power Monitor
- 70Ah 12V Battery
- Solar Panel Mounting Kit
- 50m Cable, Connectors and Battery Terminals

Installing the Green Power Ed Systems
The range of Rutland Windchargers are notable for their low wind speed start up so require only light winds to rotate and start generating power. To maximise the system's performance the windcharger should be located at a minimum height of 6m and in a clear position for exposure to the wind. Equally the solar panel should be south facing, positioned to optimal tilt angle and to avoid shading. A Land Tower Kit is optional as the poles specified are normally available from local tube stockholders. Using the cable supplied the monitor should be located within 20 meters total length of cable from the wind turbine & solar panel and within 2 meters of the battery. Full installation & operating instructions supplied.

Specifications subject to change without notice

Optional Extras for making the most of your renewable energy system:

- 12V Low energy Leisurelights
- 12V Pumps
- Inverters
- Additional batteries
- Battery boxes
- Land Tower Kit
- Handheld anemometer
- Contact us to discuss availability of recycled computers

Useful Websites:
British Wind Energy Association www.bwea.com
British Photovoltaic Association www.pv-uk.org.uk

***Visit our website:* www.marlec.co.uk**

Available from:
Marlec Engineering Co Ltd

Rutland House
Trevithick Rd
Corby
Northants
NN17 5XY

Tel: +44 (0)1536 201588
Fax: +44 (0)1536 400211

sales@marlec.co.uk
www.marlec.co.uk

ISO 9001 REGISTERED FIRM

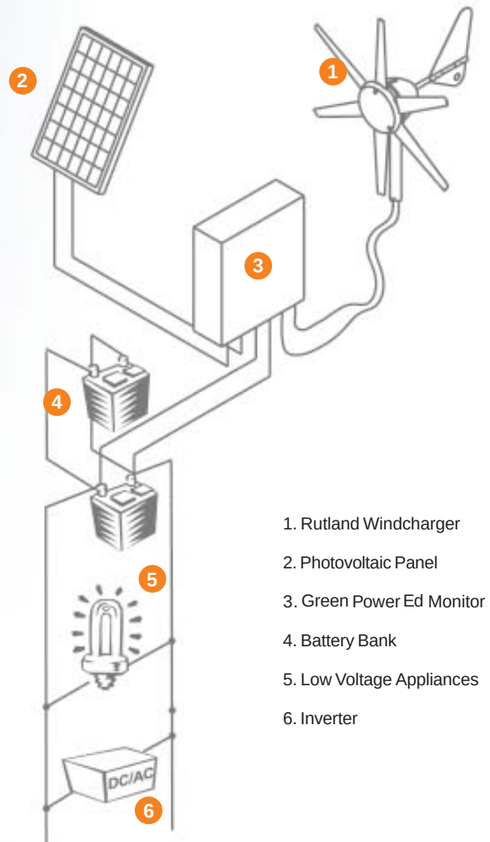
Doc No:SB1-185

Green PowerEd

"As innovators in the field of micro wind turbines since 1979 and designers of hybrid wind / solar systems Marlec have now developed a range of renewable energy education kits incorporating our world renowned Rutland Windchargers. They are interesting, practical, safe and fun and I hope you enjoy working with them!"
Ian Fawkes, *Managing Director*

Utilising renewable energy for sustainable development has become a major issue world-wide creating a need for trained and knowledgeable practitioners, hence renewable energy is now part of many curricula. The principles of generating electricity from renewable resources include the fundamentals of science and technology so Marlec's Green Power Ed is designed to reinforce basic knowledge of the environment, electricity, data monitoring, statistics and theory thus supporting education. Students gain practical experience of wind and solar energy whilst using the power generated into 12V batteries to operate low energy lamps, pumps, etc or through inverters which convert the power to 240V a.c., for computers and other low energy mains appliances.

Senior / Graduate Kits



1. Rutland Windcharger
2. Photovoltaic Panel
3. Green Power Ed Monitor
4. Battery Bank
5. Low Voltage Appliances
6. Inverter

Graduate Kit Extras

NB. Wind direction vane optional

Green Power Ed systems are ideal for schools, colleges, universities & eco-friendly demonstration centres. Three systems to accommodate a range of educational levels and budgets are available; the Junior, Senior and Graduate packages supplied in easy to assemble, install and use kits.

Graduate Green Power Ed

The Graduate Green Power Ed is the advanced package of the *Senior* allowing students to practice monitoring and measurement of collected data in addition to the basic system. All items listed in the *Senior* package are supplied plus:

- **Graduate Power Monitor** (replaces Senior Power Monitor) with built-in pre-calibrated signal conditioning A to D converter for direct connection to any PC parallel port. A minimum 386 computer is required.
- **Weather Sensors** - Anemometer, air temperature and solar irradiation sensors with fixing brackets and data cable. A wind direction vane is optional.
- **Datalogging and Virtual Instrument Software** for recording and display of wind speed, light levels, temperature, wind turbine charge current, solar panel charge current, load current & battery voltage. Data can be presented in graph or tabular form for export to Excel spreadsheets for further analysis. The easy to install software is supplied in Windows and DOS formats.
- **Cables and connections** for data and computer links.

Pre-order Options

- Extension Kit for PC's located greater than 2 meters from the Power Monitor.
- Wind direction vane kit.

Senior Green Power Ed

The Senior Green Power Ed features our most popular Windcharger, and is a more powerful version of the Junior. It is intended for permanent installation, the package includes:

- Rutland 913 Windcharger - generates 90w @ 10m/s (22mph) and up to 300w
- 60 Watt Photovoltaic Solar Panel (Dims:111x50x5cm Wt:7.2kg)
- Senior Power Monitor
- 2 x 70Ah 12V Batteries
- Solar Panel Mounting Kit
- 50m Cable, Connectors and Battery Terminals

Green Power Ed Monitors interconnect the system components, display essential parameters and include a battery voltage controller. Meters display wind and solar charge currents, load current (max 10A). and battery voltage.
Dims: 260x300x110mm

Windcharger Dimensions

	Rutland 913	Rutland 503
Turbine Diameter	910mm	510mm
Turning Radius	462mm	255mm
Weight	10.5kg	3.5kg
Tower Fixing:		
Outside Diameter	48mm	38mm
Internal Diameter	41mm	31.7mm

*Detailed specifications available on request for the Rutland 913 & 503.
NB. Mounting poles shown not supplied.