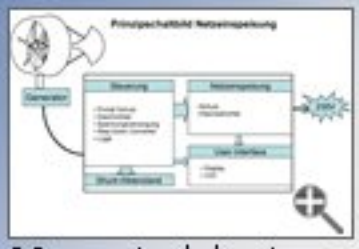
ADVANTAGE En-flo

1 877 300 6007 USA Solar & Wind Inc.

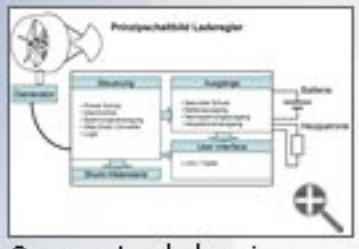
Advantages of the WindTec Systems AG Turbine
(compared with conventional free-running wind generators)

- lower system price per kW of nominal power
- significantly smaller system at equivalent nominal power
- higher output / better use of available wind energy
- rotor without variable pitch
- no gearing
- contained propeller
- less noise
- no 'disco-effect' (stroboscopic reflection of sunlight or shadow from rotor blades)
- can be set up in industrial or urban areas
- lower maintenance cost
- no ice release with the windturbin

ELECTRONICS **ENFLO 0071**



SConceptual drawing Feed-in Module



Conceptual drawing battery charger module

AC/DC inverter

Control print:

- the generator is dynamically controlled at the optimal operating point for maximum energy transfer at lower wind speeds.
- power limit of the generator at too high wind rates through limit of maximum velocity and therefore protect the generator (through air outline in the turbine).
- plain text display for status information.
- Modern 16 bits processor at 3.3V for lower power consumption.

AC/DC inverter:

- newest AC/DC inverter technologies with newest generation of semiconductors.
- renunciation of using life time limited electrolyte capacitors.
- automatic recognition of the line frequency and of the mains voltage.
- automatic safety shutdown circuit if the line voltage is disconnected (for safety, if a person works on the premises).
- automatic recognition of AC interrupts or low line voltage with automatic restart

Battery charging system

Control print:

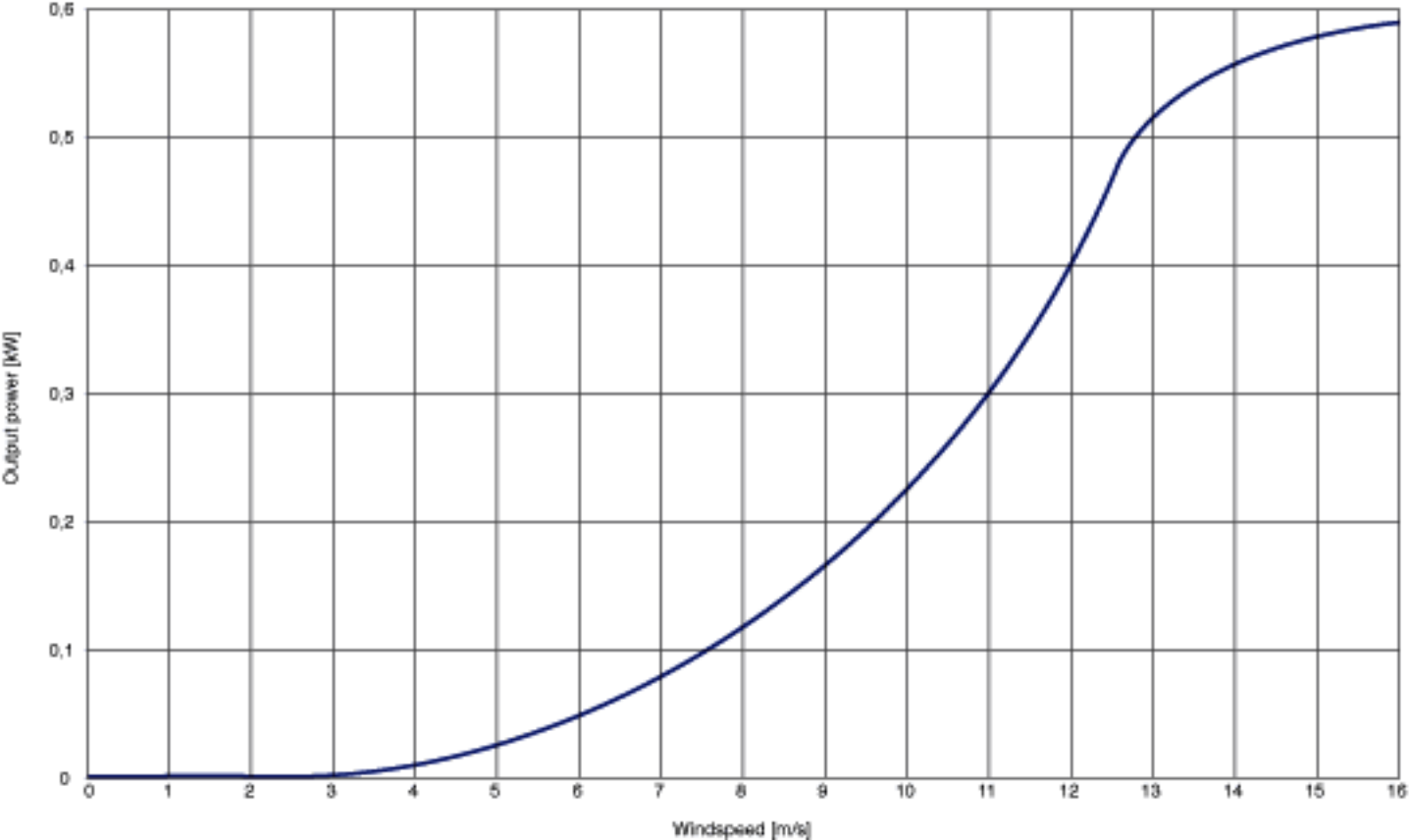
- the generator is dynamically controlled at the optimal operating point for maximum energy transfer at lower wind speeds.
- power limit of the generator at too high wind rates through limit of maximum velocity and therefore protect the generator (through air outline in the turbine).
- plain text display for status information.
- Modern 16 bits processor at 3.3V for lower power consumption.

Battery charging system:

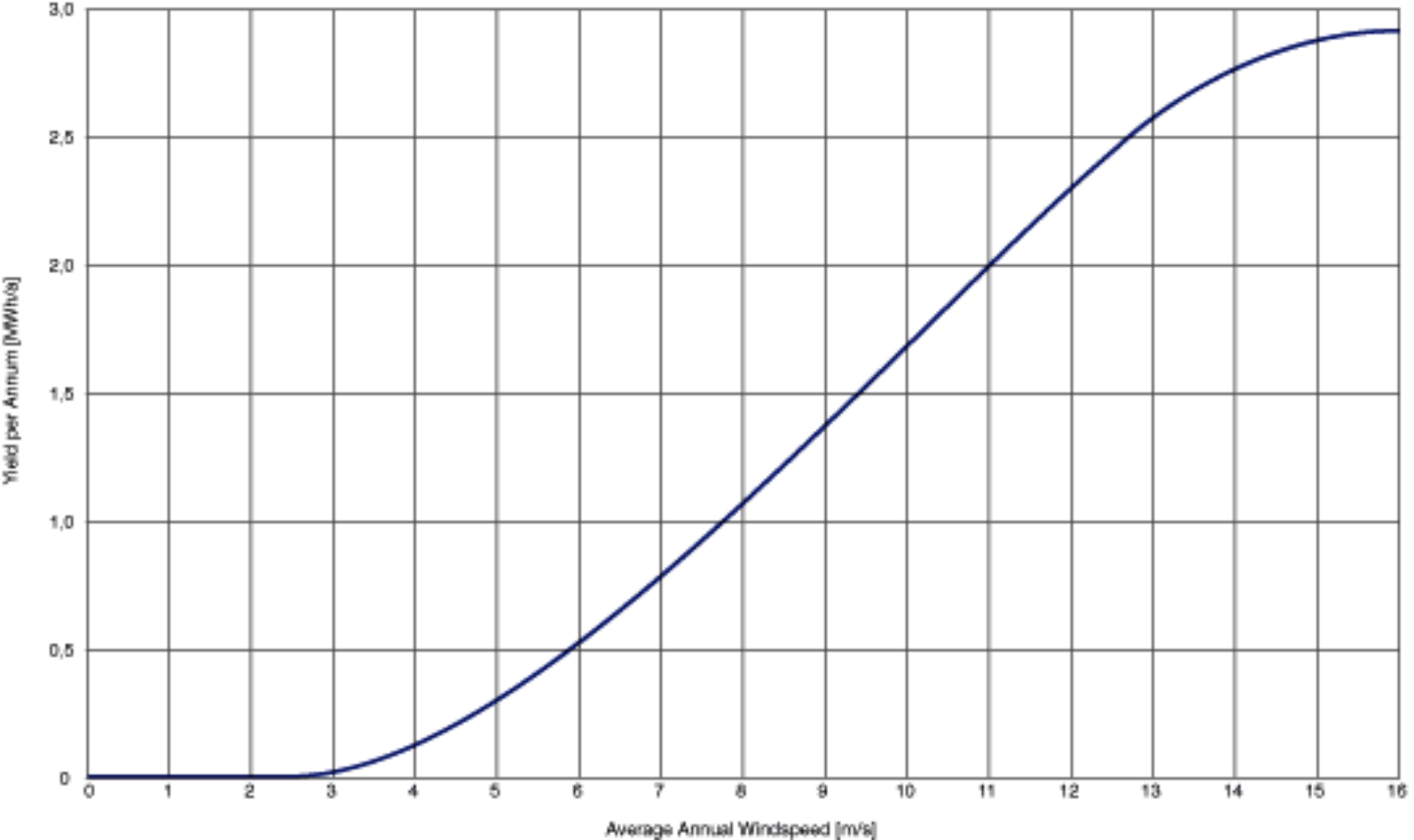
Optimum charge control for maximum battery capacity and life

- trickle charge for deep unload accumulator for a good regeneration of the surface.
- bulk-charge with 0.1 CA (charging current is 10% of the rated capacity) for fast charge.
- final charge with small pre emphasis of the charging voltage until the internal resistance of the accumulator increases.
- float charge for compensation the self discharge of the accumulator.
- recognition of erroneous accumulators by calculation of loaded energy which must fit together with the size of the accumulator.
- Self disconnection the load to protect of life limiting complete discharges.

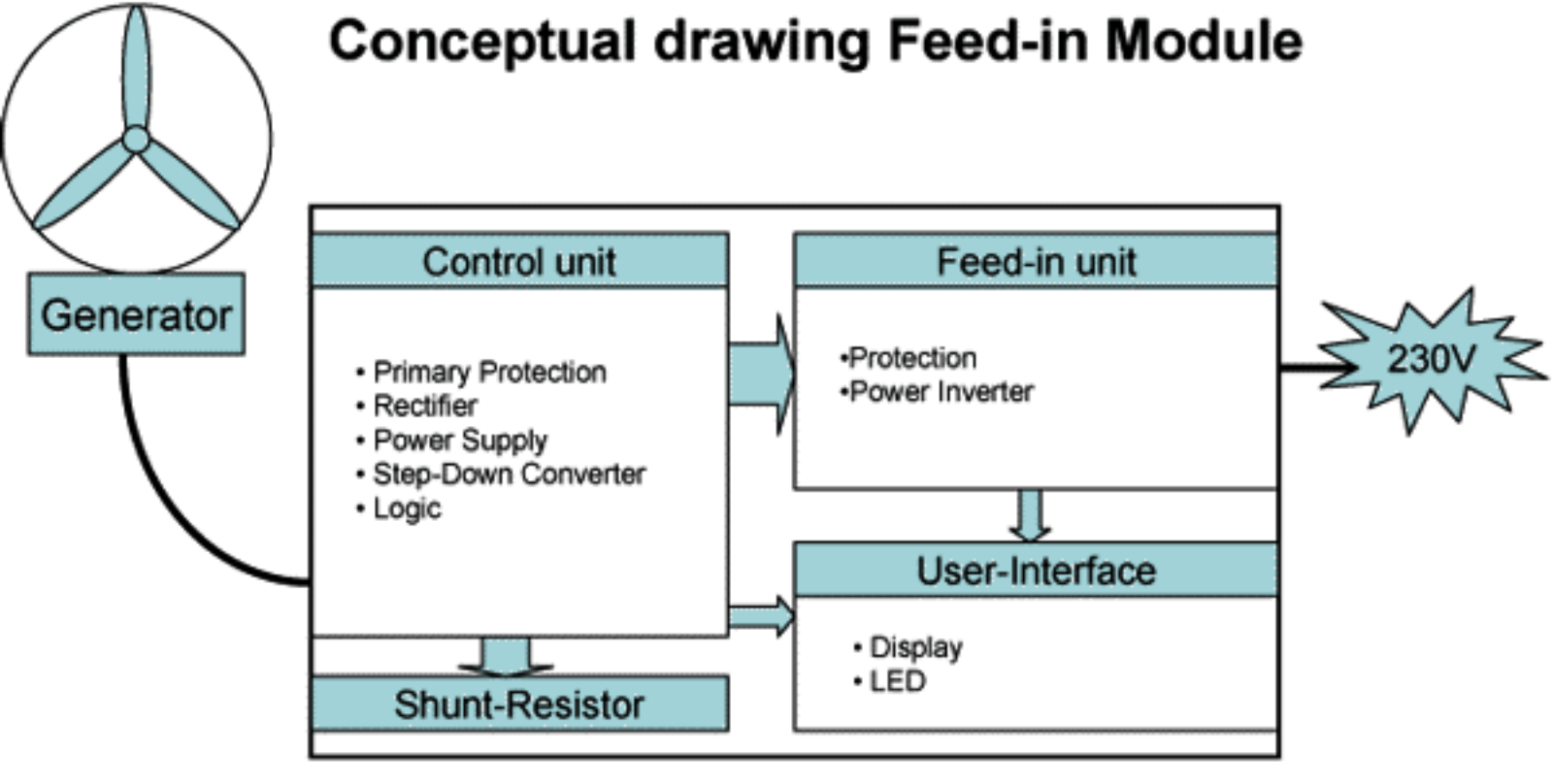
Power Diagram ENFLO 0071



Annual Yield ENFLO 0071



Conceptual drawing Feed-in Module



COMPARSION

Looking foward to 2008 mid year. 1 877 300 6007

free-running to diffuser-augmented turbine

Parameter	free-running turbine	enflo 0150/2.5 Prototype (windtunnel)
nominal wind	12,5 m/s	12,5 m/s
rotor diameter	1,5m	1,5m
rated rpm	5,5 rpm	4,7 rpm
wingtip speed	68,7 m/s	58,9 m/s
Cp (max)	0,45	0,9
nominal torque	10,6 Nm	28 Nm
nominal power	970 W	2500 W
Nennleistung	970 W	2500 W
annual yield at 5m/s everage annual wind app	1180 kWh	2512 kWh