

Energy-XS

Switch on the Sun and Wind

www.energyexcess.com

Elegant small wind solutions for
Residential and Industrial use.

Models ranging from 1000 Watts to 5000 Watts

Grid-tie and off-grid systems.

**of Hybrids
and
LED's!!!**



Visit our website or call us for more details:

www.energyexcess.com

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FAQs

What are Energy – XS Hybrid Solutions?

Energy – XS micro and small power solutions combine the proven Solar Photo Voltaic technology and Wind Turbines to give assured energy yields. As these solutions use Solar PV technology and wind generators, they have been dubbed as Solar / Wind hybrids. Incidentally the charge controllers used in our systems can also integrate other non conventional power generation options like thermal, solar thermal and hydro to increase the scope of hybrid power generation.

What is the percentage of power generated by Wind and Solar parts?

Normally the Wind to Solar ratio recommended in India is 60/40. Our 8KW hybrid systems are configured for 40% Solar and 60% wind and we see over 50% savings in capital costs as against a solar only installation for the same wattage. However the smaller hybrid units such as the Energy-XS 33W hybrid system use under 3% as the solar element to keep costs down and ensure adequate charging during night time with a larger wind impeller.

How is it different from pure solar solution?

Even with the reduced cost of installed Solar PV per watt today (which is roughly Rs. 350/- per watt) an Energy-XS small wind system is still cheaper at **one fourth that of solar PV on per watt basis**. We use this price difference to engineer more reliable systems at greatly reduced prices as indicated above. Additional cost reduction happens as a result of the reduced battery backup needed in a Solar / Wind solution as against a pure solar or wind only solution.

How does the solution work?

Wind has a high energy density, and output improves geometrically as wind speed increases. The principle used to convert the kinetic energy in the wind to electrical energy is simple, we all know of old Dutch windmills, and the dynamo on our bicycle. Joined together they are a wind energy plant!

Energy-XS wind turbines are driven on horizontal or vertical axis?

All Energy-XS turbines are driven mounted on Vertical Axis rotor shafts.

What are the advantages of Vertical Axis Wind Turbines?

One key advantages of VAWT is that they do not need to be pointed into the wind to be effective. This is an advantage on sites where wind direction is highly variable. VAWT also obviate the need for massive towers and can be mounted closer to the ground or on rooftops. As the generator is closer to ground, it is easier to maintain. VAWT's have lower start up speeds than HAWT's, typically generating power at windspeeds as low as 2 to 3 m/s and may be installed at places where tall structures are prohibited. VAWT's can take advantage of locations where mesas, hilltops, ridgelines, and passes funnel wind and increase wind velocity. VAWT's are also very quiet as they operate at low RPM's.

What is the reliability of hybrid solution in dusty environment?

Energy-XS alternators and supporting electronics are environmentally sealed for reliable performance.

What happens to the power generated during day time. Where is it stored?

All systems require power storage, our hybrid as well as stand alone solutions save power in sealed maintenance free batteries of adequate capacity. Hybrid Solar and Wind systems have an added advantage of requiring less battery backup as they produce power day and night.

How much does a typical Energy-XS backup system store? (in hours assuming one LED lamp produces illumination equal to a 100W incandescent lamp) Why recommended LED lamps?

A typical 100w bulb produces 900 to 1000 lumens of illumination, and normally this light is omnidirectional. If all this light was made more directional as in an LED lighting source, we have a 100W bulb then producing 9 lumens per watt. Compare this with an **LED light source which produces 100 Lumens for every watt, requiring just 9 watts to produce the same intensity as a 100W bulb!** A 7AH battery can then store enough backup power for 9 hours.