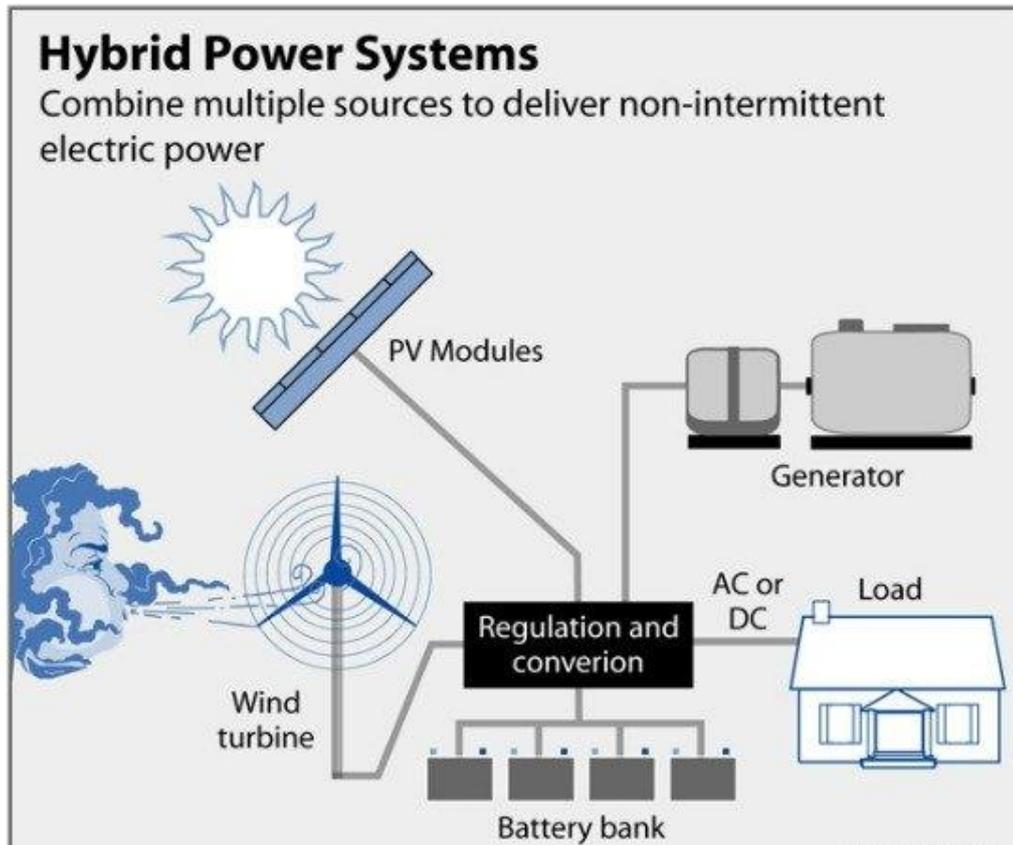


## WIND AND HYBRID



- **OVERVIEW**
- Hybrid energy systems are a very promising sustainable solution for power generation in stand-alone applications. The Hybrid power system combines power from solar panels and wind turbines to produce uninterrupted electric power, and the combined supply will be wheeled by AFEA POWER to your respective facilities in a pattern that matches your base load.
- This will be solution to a reliable, affordable and dispatchable integration of renewable energies, driving the transition to a clean energy future by integrating renewable energy generation sources with one another (i.e. Wind + Solar) and/or energy storage, dispatchable, competitive green MWhs can be enabled through intelligent plant and system design, software & controls, and O&M synergies. Research and development carried out in these emerging technologies will certainly result in reducing the cost of the systems, despite the complex procedure involved in the design and optimisation of these systems.



- 
- 
- Solar wind hybrid systems are needed to generate electricity during the summer and winter seasons. The variation in the intensity of sunlight and wind speed throughout the year does not organically affect the working of hybrid solar wind systems. It can produce power at any time of the year.
- In a large area, both solar panels and windmills are installed. They are connected to a gigantic battery bank that is further joined to a regulation and conversion unit. The energy produced through windmills and solar panels is stored in the battery, which is later on transferred to the load in the powerhouse for distribution. If the energy is needed urgently, it can be transferred to the generator to produce electricity directly. With technological advancement, 'stand-alone systems' have also become popular. They operate only to produce energy stored in batteries or a generator. They are not connected to any of the electricity distribution systems.

- Why You Should Consider a Wind and Solar Hybrid System?
- Due to limited sunlight hours during the day, a solar system designed to provide 24 hours' worth of power must generate that in approximately 1/5 of the day. Therefore, the system would need to generate enough power in ~5 hours to last 24, with the ability to store at least 19 hours' worth of energy.
- When a wind machine that can make power around the clock is added to the solar system, the size of the solar and, more importantly, the storage system can be dramatically reduced, resulting in lower cost with higher energy density and a smaller carbon footprint fewer chemical batteries equals good for the environment.
- In fact, when a wind machine is added to a solar system, the size and cost of that solar system and its storage system will be reduced to a point where the savings equal or exceed the cost of the wind machine.