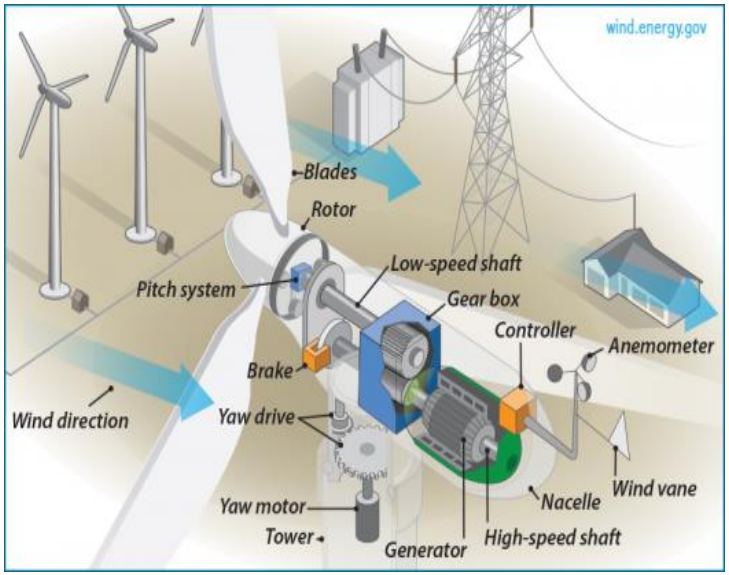
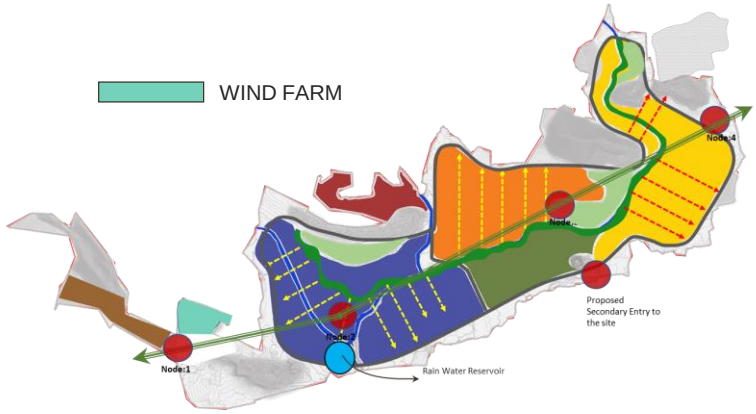
1. Wind Power Generation

- The wind is free and with modern technology it can be captured efficiently.
- Once the wind turbine is built the energy it produces does not cause green house gases or other pollutants.
- Wind farms can be an interesting feature of the landscape.

There are few concerns in using Wind power;

- The strength of the wind is not constant and it varies from zero to storm force. It does not produce same amount of electricity all the time.
- Wind turbines are noisy. Each one can generate the same level of noise as a family car travelling at 70 mph, which affect, human comfort.
- Very large space required for wind turbines (approx. 4.5 acres for 2.5MW)
- Rotating wind turbine blades interrupt the sunlight producing unavoidable flicker bright enough to pass through closed eyelids.
- Wind turbine shadow flicker induced adverse human health effects include annoyance and/or stress.
- Wind turbines also have environmental effect on bird's life nearby, any deaths have to be reported to the Government.





The wind farm for the IITPKD has been planned away from the main zones of the campus towards the entrance where it would have minimal effect on the population. The land area allocated for the farm is about 4.5 acres and a buffer zone of dense vegetation separates it from the main approach road and future incubation zone.

2. Solar Power – Solar Farm

- Solar farms or solar parks are the large-scale application of solar photovoltaic (PV) panels to generate green, clean electricity.
- Solar farms can cover anything between 1 acre and 100 acres.
- The energy produced by Solar farms arms does not cause green house gases or other pollutants or impact to environment/ human life.
- Virtually no maintenance as solar panels last over 30 years - only regular cleaning, is required.

There are some disadvantage with Solar farms;

- High initial costs for material and installation as compared to Grid supply.
- No solar power at night so there shall be either battery bank to store or use grid supply at night.
- Cloudy days do not produce much energy, then grid power needs to be utilized.

Renewable energy service company (RESCO) model is recommended for consideration for this project:

Under the RESCO model, the company will install solar power plant and client need not to pay anything. Only electricity unit price need to be agreed & signed between the company and consumer at a mutual agreed price (tariff), generally it's less than grid power tariff. The solar farm is located on the northern side of the campus to the east of hostel zone in a land of about 7 acres.