



# **SNS COLLEGE OF TECHNOLOGY**

Vazhiampalayam, Coimbatore-35

**(An Autonomous institution)**

Accredited by **NBA-AICTE** and Re-Accredited by **NAAC-UGC with A+ Grade**

Approved by **AICTE, New Delhi** & Affiliated to **Anna University, Chennai**



## **DEPARTMENT OF CHEMISTRY**

**COURSE NAME : 23CHT101- ENVIRONMENTAL SCIENCE AND  
SUSTAINABILITY**

**I YEAR / I SEMESTER**

**UNIT : 4. ENERGY RESOURCES**

**TOPIC : 3. WIND ENERGY**



# BRAINSTORMING WITH RECAP





# INTRO



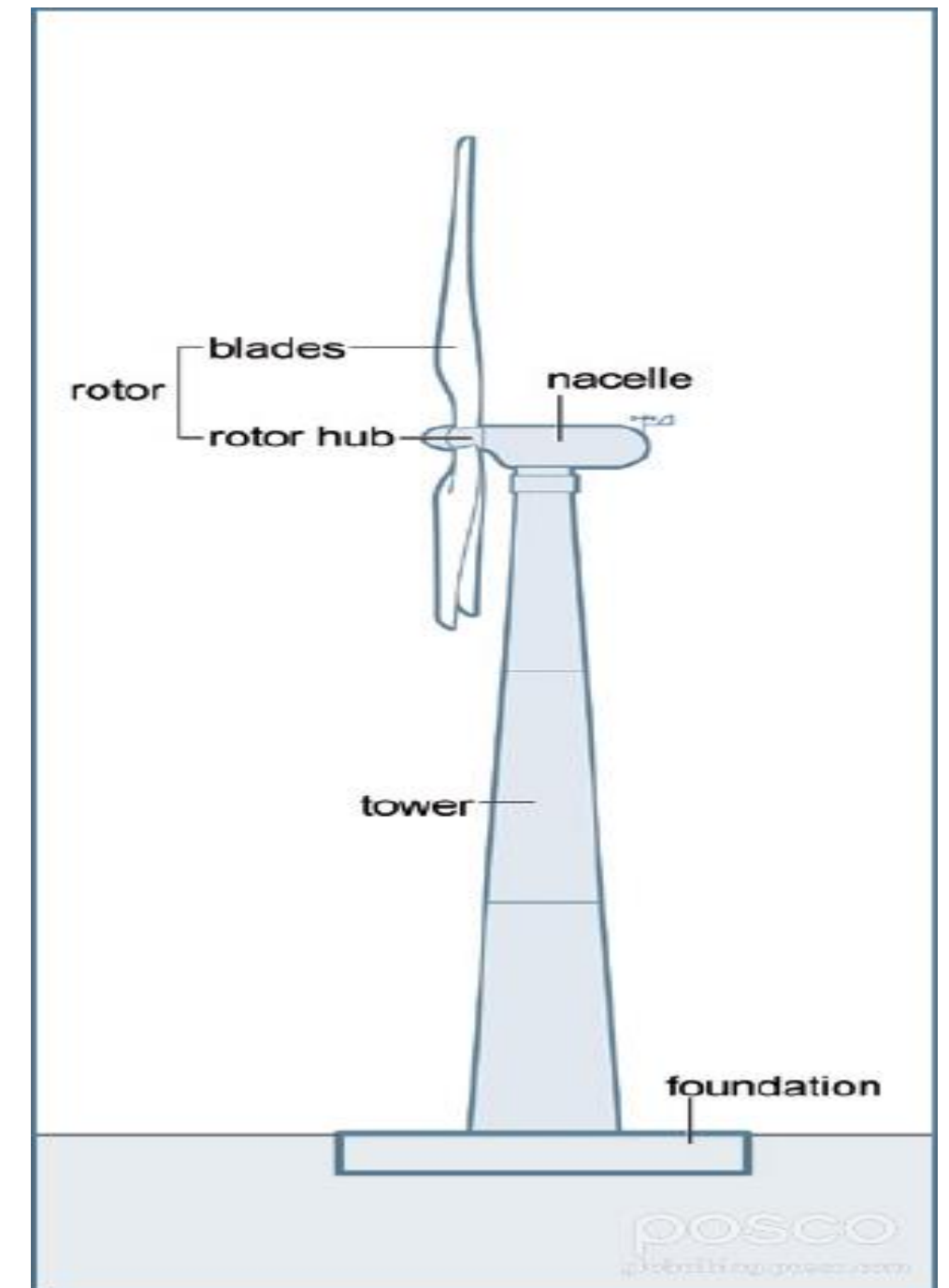
- Moving air is called wind.
- Energy recovered from the force of the wind is called wind energy.
- The energy produced by wind is because of its high speed.
- The wind energy is harnessed by making use of wind mills.





# WIND MILL

- The strike of blowing wind on the blades of the wind mill make it rotating continuously.
- The rotational motion of the blade drives a number of machines like water pump, flour mills and electric generators.





# WIND FARMS



- When a large number of wind mills are installed and joined together in a definite pattern it forms a wind farm.
- The wind farms, produce a large amount of electricity.
- The maximum speed required for satisfactory working of a wind generator is 15 km/hr.
- The best places for wind farms are coastal areas tops of hills, open plains etc.





# WIND ENERGY-APPLICATIONS



## Wind Energy Applications

- 1. Electricity Production**
- 2. Wind Energy for Water Applications**
  - ✓ **Water Pumping**
- 3. Industrial Applications**
  - ✓ **Telecommunications**
  - ✓ **weather stations**
- 4. windmill**

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# Activity



# WIND ENERGY-ADVANTAGES

## Advantages of Wind Energy:

- *Renewable source of energy*
- *Pollution-free*
- *Lesser space for installation*





# WIND ENERGY-DISADVANTAGES



## Disadvantages of Wind Energy:

- *Unreliable source of energy*
- *Expensive to store*
- *Generates only temporary employment*

Buzzle.com



# APPLICATIONS



## Sizes and Applications



### Small ( $\leq 10$ kW)

- Homes
- Farms
- Remote Application



### Intermediate (10-250 kW)

- Village Power
- Hybrid Systems
- Distributed Power



### Large (660 kW - 2+MW)

- Central Station Wind Farms
- Distributed Power
- Community Wind



# ASSESSMENT



**List out the various uses of wind energy**



# SUMMARY



# REFERENCES



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2. G.Tayer Miller :Environmental Science”, Cenage Learning India Pvt Ltd, 2011.
3. Benny joseph, “Environmental science & engineering” Tata McGraw-Hill.Pub.Co.Ltd. New Delhi.2009.