Smart Energy Communities

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Introduction

- The conventional sources of energy are fast **depleting**. These fossil fuels are not renewables.
- Most nations have moved diligently towards greater use of **renewable** energy sources.
- India is committed to expanding its renewable energy use to the extent of **500 GW by 2030**. This is a huge challenge.
- **Behavioural changes** across the communities in energy use will be required.

Context

- SMART ENERGY COMMUNITIES are built through initiatives from the micro level and stringent directives from the top.

Relevance

- It is acknowledged across communities that renewable energy use is sustainable and **cleaner** than use of conventional fuels.
- SMART ENERGY COMMUNITIES are built through initiatives from the micro level and stringent directives from the top.
- Energy conservation, energy efficiency and transition to **net zero** carbon emissions are the pillars to move along the path of clean energy.

Use Case/Case Study IIC

- **The case study of the India International Centre (IIC)** New Delhi: The IIC has conducted energy audits since 2019. This has resulted in 1.6 lakh units of savings per year. This has been achieved by the following measures:
  a) **Zero discharge** of untreated solid/liquid waste
  b) Doing away with dependence on underground water by using **recycled water**.
  c) Upgrading its buildings to **green standards** and adopting best green practices with tangible out comes and savings in costs.
  d) Replacing lights with **LEDs**

Case Study IIC continued….

a) **Rainwater harvesting**.
b) Use of **bio-urja**
c) The IIC energy system is **monitored** through supervisory control and data acquisition **(SCADA**

Use Case/Case Study continued…

- **The Case study of a Constructed Wetland Systems**: Prof **CR Babu**, by using certain specific plants, has successfully **constructed a wetland system** for the treatment of sewage generated by a village near JNU, New Delhi. The treated water has resulted in the formation of a lake and associated wetlands.

Case Study cont.....

- **The Case study of an academic institute:** The **Manohar Parrikar Institute of Defence Studies and Analysis** (MPIDSA) in Shankar Vihar, Delhi Cantt has tied up with the Cantonment authorities to **treat its sewage water** and use it for gardening purposes. It also uses **roof top solar power** to generate electricity. Resulting in energy cost savings
- **The case study of a Resident Welfare Housing Society**: IFS CGHS utilized the Delhi government's subsidy scheme to install a **roof top** solar power without costs and now sells electricity to the grid generate savings.

Key Takeaways/ Recommendations

- A **grid of stakeholders** of smart energy use is suggested.
- **Behavioural changes** in energy use among households must be introduced.
- At the **societal level**, energy use may be moulded (e.g. Covid 19 pandemic introduced behavioural changes among citizens).
- Use of appropriate **blockchain technologies** for grid security and energy transition.
- Energy use must be **accounted** for and **prepaid metering** facilitated by bitcoin technologies should be used.

Thank You

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Links/References (If any)