

## **5. First Indigenous Fuel Cell System launched**

**Prelims: Science & Technology**

**Mains: GS-III- Achievements of Indians in Science & Technology; Indigenization of Technology and developing new technology**

### **Why in News?**

- ▶▶ The First Indigenous Fuel Cell System launched on the Foundation Day of CSIR.

### **Highlights:**

- ▶▶ This fuel cell system was developed by the CSIR in partnership with Indian industries under India's flagship program named "New Millennium Indian Technology Leadership Initiative (NMITLI)".
- ▶▶ Three laboratories of CSIR (at Pune, New Delhi and Karaikudi) and two private sector companies Thermax Limited (Pune) and Reliance Industries Limited (Mumbai) were involved in the development.
- ▶▶ The 5.0 kW fuel cell system generates power in a green manner using methanol/bio-methane, with heat and water as bi-products for further use.
- ▶▶ This system has an efficiency of 70%.
- ▶▶ The Fuel Cells developed are based on High Temperature Proton Exchange Membrane (HTPEM) Technology.
- ▶▶ The development is most suitable for distributed stationary power applications for small offices, commercial units, data centres, etc. where highly reliable power is essential with simultaneous requirement for air-conditioning.
- ▶▶ This system will also meet the requirement of efficient, clean and reliable backup power generator for telecom towers, remote locations and strategic applications as well.
- ▶▶ This development would replace Diesel Generating (DG) sets and help reduce India's dependence on crude oil.