

Indigenous fuel cells

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Why in news?

The President of India launched the first Indian High-Temperature Fuel Cell System developed by CSIR.

What is this?

- It is a special example of Public-Private Partnership (PPP) among the CSIR-NCL, Pune, CSIR-NPL, New Delhi & CSIR-CECRI, Karaikudi (Chennai Center)] and two Indian industries; M/s Thermax Limited, Pune and M/s Reliance Industries Limited, Mumbai e Mumbai.
- The 5.0 kW fuel cell system produces green energy using methanol / bio-methane, with heat and water for further utilization as bi-products, which amount to over 70 per cent of efficiency which other energy sources may not otherwise achieve.
- The designed combustible cells are based on high-temperature HTPEM technology.
- The technology developed is world-class and its growth will put India in the league of developed nations with such a knowledge base.

Applications:

- The development of the system is best suited to distributed fixed power systems such as small offices, commercial units, data centres, etc., where highly reliable power with simultaneous air conditioning requirements is essential.
- It also satisfies the needs of a power generator for telecom towers, remote locations and strategic applications with efficiency, cleanness and reliability.
- This would replace diesel generator sets (DGs) and help to reduce India's crude oil dependency.

- The distributed power generation systems of Fuel Cell are emerging as a viable alternative to grid power in the area of clean energy.