

# New India Millennium Indian Technology Leadership Initiative

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***Source: PIB & CSIR***

Recently The President of India unveiled the first Indigenous High Temperature Fuel Cell System developed by Council of Scientific and Industrial Research (CSIR) in partnership with Indian industries under India's flagship program named "New Millennium Indian Technology Leadership Initiative (NMITLI)" on the occasion of CSIR Foundation Day at VigyanBhawan, New Delhi

## **About New India Millennium Indian Technology Leadership Initiative**

- The New Millennium Indian Technology Leadership Initiative (NMITLI) is the largest public-private-partnership effort within the R&D domain in the country.
- It looks beyond today's technology and thus seeks to build, capture and retain for India a leadership position by synergising the best competencies of publicly funded R&D institutions, academia and private industry
- **Objective: NMITLI seeks to catalyze innovation centered scientific and technological developments as a vehicle to attain for Indian industry a global leadership position, in selected niche areas in a true 'Team India' spirit, by synergising the best competencies of publicly funded R&D institutions, academia and private industry.**

## **Key features of the programme**

- **A proactive programme:** Instead of funding a project based on requests/applications, the programme identifies the areas for development based on national consultation and invites best partners from institutions, academia and the private sector to play a role in the development
- **Types of Projects:** Both 'push' and 'pull' type of projects are evolved under NMITLI, which are appropriately named as (i) **Nationally Evolved Projects (NEP)** and (ii) **Industry Originated Projects (IOP)**
- **PPP mode: Almost all projects are built in a public-private partnership mode**
- **Emphasis on identifying and building the projects:** Greater emphasis is laid on identifying the niche areas and building the projects with the help of best brains in the country.
- **S&T inputs:** High quality technical inputs are provided at both project development as well as at the implementation stage
- **Monitoring & review system:** A two-tier tight monitoring system is introduced to ensure realization of the objectives and deliverables. At the first level is an internal Steering Committee comprising PIs (meets once in 3 months) and at the second level an external independent Monitoring Committee comprising recognized peers (meets at least once in six months).
- **IP mapping:** The programme provides for continuous mapping of the IP scenario for each project and in licensing of IP with a view to building a portfolio and achieving the leadership position
- **Foreclosure of projects:** The programme also provides for foreclosure of the non-performing or non-achievable project components; and
- **Financial support:** An innovative feature of the programme is that it provides financial support to all players in the project. The financial support is in the form of grant-in-aid to the institutional partners in public domain and as soft loan with 3% interest to the

private sector industrial partners having more than 50% of shareholding by Indians/Non-resident Indians and with 5% interest to the private sector industrial partners having less than 50% shareholding by Indians/Non-resident Indians but with manufacturing base in India.

### **About Indigenous Fuel Cell System**

- 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; amounting to greater than 70% efficiency, which otherwise may not be possible by other energy sources.
- The Fuel Cells developed are based on High Temperature Proton Exchange Membrane (HTPEM) Technology.

### **Significance:**

- The development is most suitable for distributed stationary power applications like; for small offices, commercial units, data centers 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.**
- The developed technology is world class and the development has placed India in the league of developed nations which are in possession of such a knowledge base.
- CSIR has an impressive portfolio of global patents on these developments. In the field of clean energy, Fuel Cell distributed power generation systems are emerging as promising **alternative to grid power.**
- The Fuel Cells fit well in India's mission of replacing

diesel with green and alternate fuels.

- The development of fuel cell technology is indigenous and carries immense national importance in terms of non-grid energy security.