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1974

Government of India

Ministry of Power

Central Electricity Authority

Financial & Commercial Appraisal Division

Sewa Bhawan, New Delhi

Date: 22.12.2025

विषय: हाइलेनर टेक्नोलोजीज प्राइवेट लिमिटेड और एसपीएल फ्यूजन प्राइवेट लिमिटेड के साथ फ्यूजन आधारित बिजली उत्पादन पर चर्चा के लिए सीईए के अध्यक्ष की अध्यक्षता में 08.12.2025 को आयोजित बैठक का विवरण/ Minutes of the meeting held on 08.12.2025 under the chairmanship of Chairperson, CEA to discuss fusion based power generation with M/s Hylenr Technologies Private Limited and M/s ASPL Fusion Pvt Ltd.

The undersigned is directed to enclose the minutes of the meeting held on 08.12.2025 under the chairmanship of Chairperson, CEA to discuss fusion based power generation with M/s Hylenr Technologies Private Limited and M/s ASPL Fusion Pvt Ltd for information and necessary action please.

Encl: As above

CPrakash
22/12/2025

(Chander Prakash)

Assistant Director

To

1. CMD, NTPC Ltd, New Delhi
2. DG, CPRI, Bangalore
3. CMD, M/s Hylenr Technologies Private Limited
4. Co-founder, ASPL fusion Pvt Ltd

Copy to:

1. Additional Secretary (Thermal), Ministry of Power, New Delhi

Minutes of the meeting held on 08.12.2025 under the chairmanship of Chairperson, CEA to discuss fusion based power generation with M/s Hylenr Technologies Private Limited and M/s ASPL Fusion Pvt Ltd.

List of participants is at Annexure-I.

2. Chairperson, CEA welcomed the participants and requested representatives to briefly explain their technologies.

3. Sh Siddhartha Durairajan, CMD, Hylenr Technologies Pvt Ltd informed that:

- i. M/s Hylenr is engaged in Low-Energy Nuclear Reactions (LENR), often called "cold fusion". In the process, small amount of electricity is applied to a nickel mesh coated with palladium, containing hydrogen and this process triggers nuclear reactions (LENR) at near-room temperatures, generating significantly more heat than the electrical energy put in.
- ii. In the current setup, a Coefficient of Performance (CoP) [energy amplification factor] of 1.78 has been achieved and output energy is consistent and sustained. They are targeting to achieve CoP of 8 in phased manner.
- iii. Department of Atomic Energy clarified that LENR technology patented by Hylenr is not related to the atomic energy as per Atomic Energy Act 1962, as no radio-active material is used.
- iv. In the power sector, they are proposing to set-up 500 kW and 1 MW iNFINITY Grid pilot—an LENR-based heat-to-power system. These pilot projects will use electric power to initiate a LENR reaction, providing a steady and controllable heat output without combustion or radioactive emissions. Heat generated will be used in the Organic Rankine Cycle (ORC) system using an organic working fluid, enabling electricity generation.
- v. The entire setup is modular in design and requires very less space (about 100 square meter). The cost for setting up 500 kW and 1 MW pilots would be ₹10 crore (excluding GST) and ₹17 crore (excluding GST) respectively. For 1 unit of electricity generation, it would require 0.562 unit of electricity as input. The construction time would be about 12 months.
- vi. The proposed power generation has zero carbon emissions or no radioactive wastes, fully complying with India's clean energy policies, and thus would be eligible for carbon credits and ESG related incentives.
- vii. The company has First-mover advantage in LENR technology integration in India's power sector supporting national energy transition goals, facilitating technological leadership,
- viii. They need support in identifying and facilitating access to a suitable site for implementation of a pilot project.

4. Prof. Prabhat Ranjan, co-founder of M/s ASPL Fusion and the Chairman (Research, Innovation and International Relations) of D Y Patil Pratishthan informed that:

- i. Worldwide, many countries are researching on nuclear fusion technology and are targeting deployment of fusion based reactors by early 2030s.
 - ii. Total private fusion funding worldwide in 2025 is on pace to exceed \$2.2 billion excluding China.
 - iii. Fusion technology can be used in 1) Electricity Generation, 2) Neutron Sources for Industry and Research, 3) Medical Isotope Production, 4) Nuclear Waste Transmutation, 5) Hydrogen Production and Industrial Process Heat and 6) Space Propulsion.
 - iv. ASPL Fusion is an Indian start-up aiming to commercialize nuclear fusion technology for clean energy, medical isotopes and industrial uses in phased manner. In 1st phase (1-3 years), they would target for commercial neutron generator for medical isotope production. In the 2nd phase (4-10 years), they would validate core technology for power plant applications like hybrid power system (50-100 MW). In the 3rd Phase (11-16 years), they would go for setting up of first of a kind commercial fusion power plant of 400 MW. Further, it was mentioned that this technology may likely to come up by 2028.
5. Chairperson CEA acknowledged that fusion based technology could play a major role in meeting India's carbon neutral energy need. He pointed out that many data centres are coming up in our country and they require affordable and consistent power supply at affordable rate. For them, these technologies could offer affordable and reliable supply.
6. CMD, Hylene suggested that many of end-applications of electricity are heat generation and therefore, instead of generation of electricity by heat, heat itself can be considered for transportation. This will save the country from conversion loss of heat to electricity and electricity to heat.
7. After detailed deliberations, the following points emerged:
- i. A Group of Experts working in Nuclear Fusion will be formed under Prof. Prabhat Ranjan, co-founder of M/s ASPL Fusion and the Chairman (Research, Innovation and International Relations) of D Y Patil Pratishthan. The Group could suggest roadmap for deployment of Nuclear Fusion technology in India based on realistic assessment of their commercially availability. The Group may also suggest measures to scale up the research by partnering with private sector and the support required by govt will also be mentioned.
 - ii. Prof. Prabhat Ranjan, co-founder of M/s ASPL Fusion and Sh. Siddhartha Durairajan, CMD, HYLENR technologies Pvt Ltd can be invited in Nuclear Session of the Chintan Shivir, being organised by Ministry of Power, on 17th January 2026, so that they can brief the high level officers present from States and Central Government about the application of their fusion technologies in power sector.
8. The meeting ended with thanks to the chair.

Annexure-I

List of participants in the meeting held on 08.12.2025 under the chairmanship of Chairperson, CEA to discuss fusion based power generation with M/s Hylenn Technologies Private Limited and M/s ASPL Fusion Pvt Ltd.

CEA

1. Sh Ghansyam Prasad, Chairman
2. Sh Praveen Gupta, Member (E&C)
3. Sh Goutam Gosh, Chief Engineer
4. Sh Subhro Paul, Director
5. Sh Praveen Kumar Sahukari, Deputy Director
6. Sh Chander Prakash, Assistant Director

CPRI

1. Smt Dr J Sreedevi, Director General
2. Sh Sudhir Kumar R, Additional Director

NTPC

1. Sh Bibek Kumar, DGM
2. Sh Vishal Chandra Gupta, Sr. Manager

HYLENN Technologies Pvt Ltd

1. Sh Siddhartha Durairajan, CMD
2. Sh Agastya Vishweshwar Rao, Project Leader

ASPL fusion Pvt Ltd

1. Prof Prabhat Ranjan, Co-founder
2. Sh. Abhinav Jha, Co-founder