Reply to Parliament Question No 9104 for 20.03.2025 for Lok Sabha regarding "India Strengthens Global Energy Partnerships" in respect of Numaligarh Refinery Limited (NRL):

Q no. (a): **the manner in which these partnerships align with India's long-term energy security and transition goals;**

Reply: Ministry to reply.

[NRL, in collaboration with two other foreign investors, have formed the Joint Venture Company - "Assam Bio-Ethanol Private Limited (ABEPL)' which is setting up a second-generation bio-refinery at Numaligarh, Assam to produce ethanol from non-food grade feed stock bamboo. NRL owns 50% share in the company and remaining 50% equity is shared between two M/s Fortum BV3 and M/s Chempolis. M/s Chempolis is also the technology provider for the bio-refinery. The approved cost is Rs. 4,200 crore.

NRL is also setting up a Crude Oil Terminal at Paradip in Odisha for import of crude oil for its new 6 MMTPA refinery train at Numaligarh. The terminal will have 10 crude oil tanks of capacity 60,000 KL capacity each.]

Q no. (b): **the role of renewable energy and clean fuels in India's global energy cooperation;**

Reply: Ministry to reply.

[NRL is executing a bio-refinery project in the state of Assam through its Joint Venture Company Assam Bio Ethanol Pvt. Limited (ABEPL). Bio-refinery will produce 50 TMTPA of Advance bio-fuel (ethanol) from 300 TMTPA of dry bamboo. The first trial run has been conducted successfully to establish conversion of bamboo to alcohol. During the trial run, bamboo was successfully processed through the digestor, bamboo washing section, enzymatic hydrolysis and fermentation sections. The 2G bio-ethanol project at Numaligarh is set to become fully operational by the first quarter of 2025-26. It is envisaged that Ethanol will substitute petrol to the same extent and thereby reduce import of crude required for production of petrol in the country.

Further, in line with all oil and gas industries, NRL developed a Net Zero roadmap during 2022 with project plan, timeline and project costs as a guiding document to achieve net zero carbon emissions by the year 2038 with regards to scope 1 & scope 2.

Accordingly, company is gauging the carbon emissions YoY and has braced up with multiple projects involving low carbon, green, alternative and renewable energy technologies namely CO to acetic acid; green Hydrogen; SAF; waste ammonia recovery; Solar PV rooftops; RERTC (Renewable energy Round the clock) by integrating renewable energy into the refinery's power mix, alongside massive plantation drive.]

Q no. (c): **the manner in which India plans to attract foreign investment in green hydrogen, biofuels and carbon capture technologies;**

Reply: Ministry to reply.
[The details are provided in the reply of 'a' above.]

Q no. (d): **whether there are any collaborative efforts with global energy firms on research and development in energy efficiency and digital transformation, if so, the details thereof?**

Reply: Ministry to reply.
[There are no collaborative efforts by NRL with global energy firms on research and development in energy efficiency and digital transformation.]

Note for Supplementary:

Numaligarh Refinery Limited (NRL) is a Public Sector Enterprise with a 3.0 MMTPA petroleum refinery at Numaligarh in Golaghat district of Assam. Present shareholding pattern of NRL is Oil India Limited (OIL) – 69.63%, Govt. of Assam (GoA) – 26% and Engineers India Ltd (EIL) – 4.37%.

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