

GOVERNMENT OF INDIA
MINISTRY OF STEEL

LOK SABHA
UNSTARRED QUESTION NO. 1365
FOR ANSWER ON 30.07.2024

POLICIES TO PROMOTE DECARBONISATION IN STEEL INDUSTRY

1365. SHRI RAJU BISTA:

Will the Minister of STEEL be pleased to state:

- (a) the current initiatives and policies in place to promote decarbonisation in the steel industry supported by relevant data on their impact;
- (b) the progress made towards reducing carbon emissions in the steel industry over the past five years including year-wise emission reduction statistics;
- (c) the specific targets and timelines set by the Government for achieving further decarbonisation in the steel sector; and
- (d) the role of green hydrogen and other innovative technologies in the decarbonisation strategy for the steel industry including any pilot projects or large-scale implementations?

ANSWER

THE MINISTER OF STATE IN THE (SHRI BHUPATHIRAJU SRINIVASA VARMA)
MINISTRY OF STEEL

(a)to(c): The policies and initiatives taken by Government for promoting decarbonisation in steel industry are as under:-

(1) 14 Task Forces had been constituted with engagement of industry, academia, think tanks, S&T bodies, different Ministries and other stakeholders to discuss, deliberate and recommend upon different levers of decarbonisation of steel sector. The findings have been compiled into a consolidated report "Greening the Steel sector in India - Roadmap and Action plan" which outlines the strategy, action plan and roadmap for the steel sector in India.

(2) Steel Scrap Recycling Policy, 2019 enhances the availability of domestically generated scrap to promote circular economy and green transition of the steel sector. It provides a framework to facilitate and promote establishment of metal scrapping centers in India for scientific processing and recycling of ferrous scrap generated from various sources and a variety of products. The policy provides standard guidelines for setting up dismantling centre and scrap processing centre, roles of aggregators and responsibilities of the Government, manufacture and owner. The policy, inter-alia, also provides framework for scrapping of ELVs (End-of Life vehicle).

Contd....2/-

(3) Ministry of New and Renewable Energy (MNRE) has announced National Green Hydrogen Mission for green hydrogen production and usage. The steel is also a stakeholder in the Mission.

(4) Motor Vehicles (Registration and Functions of Vehicles Scrapping Facility) Rules, 2021 have been notified under the framework of the Motor Vehicles Act, 1988 and Central Motor Vehicle Rules, 1989 under Vehicle Scrapping Policy. It envisages to increase availability of scrap in the steel sector.

(5) National Solar Mission launched by Ministry of New and Renewable Energy in January 2010 promotes the use of solar energy and also helps to reduce the emission of steel industry.

(6) Perform, Achieve and Trade (PAT) scheme, under National Mission for Enhanced Energy Efficiency, incentivizes steel industry to reduce energy consumption. Till the completion of Cycle-III of the scheme in 2020, the 167 Units from steel sector have saved 5.583 MTOE total energy and resulted in equivalent emission reduction of 20.52 Million Tonne CO₂.

(7) Japan's New Energy and Industrial Technology Development Organization (NEDO) Model Projects for Energy Efficiency Improvement have been implemented in steel plants. Four Model Projects have been implemented to reduce the impact on environment:-

- i. Blast Furnace Hot Stoves Waste Gas Recovery System at Tata Steel Limited.
- ii. Coke Dry Quenching (CDQ) at Tata Steel Limited.
- iii. Sinter Cooler Waste Heat Recovery System at Rashtriya Ispat Nigam Limited.
- iv. Energy Monitoring and Management System in Steel Authority of India Ltd.

(8) The Carbon Credit Trading Scheme (CCTS) has been notified by the Central Government on 28th June 2023, which provides an overall framework for the functioning of the Indian Carbon Market and includes detailed roles and responsibilities of stakeholders towards operationalization of the scheme. The objective of CCTS is to reduce or avoid greenhouse gases emissions from various sectors of Indian economy by pricing the emissions through a carbon credit certificate trading mechanism. CCTS is intended to facilitate public and private sector companies to lower their cost emission reduction.

CO₂ emission intensity of the Indian steel sector has been reduced from around 3.1 tonnes of CO₂ per tonne of crude steel in 2005 to around 2.5 tonnes of CO₂ per tonne of crude steel in 2022 by various initiatives.

Contd.....3/-

To decarbonise steel sector in the country in short term (FY 2030), reduction of carbon emissions in steel industry through promotion of energy and resource efficiency and enhanced use of renewable energy are the focus. For the medium term (2030-2047), Green Hydrogen based steel making and Carbon Capture, Utilisation and Storage are the focus areas. For long term (2047-2070), disruptive alternative technological innovations can help in achieving the transition to net-zero.

(d) Green Hydrogen, Carbon Capture Utilization and Storage (CCUS), and Biochar as alternative fuels hold significant potential for decarbonizing India's steel sector. Although there are currently no large-scale implementations, the following pilot projects have been established:-

(a) Tata Steel commissioned a 5 tonnes per day (TPD) carbon capture plant at its Jamshedpur Works.

(b) Jindal Steel Works (JSW) has implemented carbon capture and storage facility with 100 tonnes per day (TPD) capacity at its Direct Reduced Iron (DRI) plant at Dolvi. The captured carbon is to be utilized in food and beverages industry.

(c) Jindal Steel and Power Ltd. (JSPL) has installed 3000 TPD capacity Carbon Capturing Unit at Angul, Odisha.

(d) Tata Steel has successfully injected around 6Kg/(ton of hot metal) of Hydrogen resulting in 7-10% of CO₂ emission reduction per tonne of crude steel(tcs).

(e) Jindal Stainless Limited has commissioned long-term off-take green hydrogen plant with the production capacity of 78 tonnes per year of green hydrogen, to be used for annealing process.
