ORAL ANSWERS TO STARRED QUESTIONS AND SUPPLEMENTARY QUESTIONS AND ANSWERS THEREON

GOVERNMENT OF INDIA
MINISTRY OF STEEL

RAJYA SABHA
STARRED QUESTION NO. *121
FOR ANSWER ON 19/12/2022

CARBON DIOXIDE EMISSION RELEASED BY STEEL INDUSTRY

*121 SMT. VANDANA CHAVAN

Will the Minister of STEEL be pleased to state:

(a) whether the amount of carbon dioxide (CO2) emissions released annually by the steelindustry is monitored by Government, if so, the details of emissions released by steelplants in the country during the last three years;

(b) whether Government is promoting the industry for transition to decarbonised steelGreen Steel, if so, the details of the steps taken, year-wise, during the said period; and

(c) the details including the strategies to expand the market of Green Steel?

ANSWER

THE MINISTER OF STEEL (SHRI JYOTIRADITYA M. SCINDIA)

(a)to(c): A statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (A) TO (C) OF THE RAJYA SABHA STARRED QUESTION NO. *121 FOR ANSWER ON 19/12/2022 ASKED BY SMT. VANDANA CHAVAN, MEMBER OF PARLIAMENT REGARDING "CARBON DIOXIDE EMISSION RELEASED BY STEEL INDUSTRY"

(a) Ministry of Environment, Forest and Climate Change (MoEFCC) periodically submits India's National Communications (NCs) and Biennial Update Reports (BURs) to the United Nations Framework Convention on Climate Change (UNFCCC) which includes National Greenhouse Gas (GHG) inventory. The emissions from iron and steel sector reported in India's first, second and third BURs for the years 2010, 2014 and 2016 were 95.998 million tonnes CO2, 154.678 million tonnes CO2 and 135.420 million tonnes CO2, respectively.

(b) Yes, Sir. Ministry of Steel is committed to Net-Zero target by 2070.Towards this, in short term (FY 2030), reduction of carbon emissions in steel industry through promotion of energy and resource efficiency, renewable energy etc. is the focus. For the medium term (2030-2047), Green Hydrogen and Carbon Capture, Utilisation and Storage are the focus areas. For long term (2047-2070), disruptive alternative technological innovations can help achieve the transition to net-zero. For this purpose, Ministry of Steel is continuously engaging with various stakeholders. Two meetings of Parliamentary Consultative Committee, held in FY 2022, were dedicated to decarbonization and improvement of resource efficiency in Steel Sector.

Other steps taken for promoting decarbonization in steel industry include:

(1) Steel Scrap Recycling Policy, 2019 enhances the availability of domestically generated scrap to reduce the consumption of coal in steel making.

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

(3) Motor Vehicles (Registration and Functions of Vehicles Scrapping Facility) Rules September 2021, shall increase availability of scrap in the steel sector.

(4) National Solar Missionlaunched by MNRE in January 2010promotesthe use of solar energy and also helps reduce the emission of steel industry.

(5) Perform, Achieve and Trade (PAT) scheme, under National Mission for Enhanced Energy Efficiency, incentivizes steel industry to reduce energy consumption.

(6) The steel sector has adopted the Best Available Technologies (BAT) available globally, in the modernization & expansions projects.

(7) Japan's New Energy and Industrial Technology Development Organization (NEDO) Model Projects for Energy Efficiency Improvement have been implemented in steel plants.

(c) Strategies to expand the market of Green Steel envisage the creation of demand for green steel in public procurement and raising awareness for consumption of green steel to make low carbon emission products in consumer supply chain.

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भारत सरकार

इस्पात मंत्रालय

राज्य सभा

तारांकित प्रश्न संख्या *121

19 दिसंबर, 2022 को उत्तर के लिए

इस्पात उद्योग से कार्बन डाइऑक्साइड गैस का उत्सर्जन

***121. श्रीमती वंदना चव्हाण:**

क्या इस्पात मंत्री यह बताने की कृपा करेंगे कि:

(क) क्या सरकार द्वारा इस्पात उद्योगों से प्रतिवर्ष उत्सर्जित होने वाली कार्बन डाइऑक्साइड (सीओ2) गैस की मात्रा की निगरानी की जाती है, यदि हाँ, तो विगत तीन वर्षों के दौरान देश में इस्पात संयंत्रों से हुए उत्सर्जन का ब्यौरा क्या है;

(ख) क्या सरकार इस उद्योग को डीकार्बोनाइज्ड स्टील अथवा ग्रीन स्टील में रूपांतरित करने को प्रोत्साहित कर रही है, यदि हाँ, तो उक्त अवधि के दौरान उठाए गए कदमों का वर्ष-वार ब्यौरा क्या है; और

(ग) ग्रीन स्टील के बाजार का विस्तार करने संबंधी रणनीतियों का ब्यौरा क्या है?

उत्तर

इस्पात मंत्री **(श्री ज्योतिरादित्य मा. सिंधिया)**

(क) से (ग): एक विवरण सदन के पटल पर रख दिया गया है।

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"इस्पात उद्योग से कार्बन डाइऑक्साइड गैस का उत्सर्जन" के संबंध में श्रीमती वंदना चव्हाण, संसद सदस्य द्वारा दिनांक 19 दिसंबर, 2022 को पूछे जाने वाले राज्य सभा तारांकित प्रश्न संख्या *121 के भाग (क) से (ग) के उत्तर में उल्लिखित विवरण।

(क): पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी) समय-समय पर युनाइटेड नेशन्स फ्रेमवर्क कन्वेंशन ऑन क्लाइमेट चेंज (यूएनएफसीसीसी) को भारत के राष्ट्रीय संचार (एनसी) और द्विवार्षिक अद्यतन रिपोर्ट (बीयूआर) प्रस्तुत करता है, जिसमें राष्ट्रीय ग्रीन हाऊस गैस (जीएचजी) की इन्वेंटरी शामिल है। वर्ष 2010, 2014 तथा 2016 के लिए भारत की पहली, दूसरी तथा तीसरी बीयूआर में लौह एवं इस्पात क्षेत्र से क्रमशः 95.998 मिलियन टन सीओ2, 154.678 मिलियन टन सीओ2 और 135.420 मिलियन टन सीओ2 उत्सर्जन संसूचित किया गया था।

(ख): जी हाँ, इस्पात मंत्रालय वर्ष 2070 तक निवल-शून्य लक्ष्य के लिए प्रतिबद्ध है। इसके लिए, अल्पावधि (वित्त वर्ष 2030) में ऊर्जा एवं संसाधन दक्षता, नवीकरणीय ऊर्जा आदि के उपयोग को बढ़ावा देकर कार्बन उत्सर्जन में कमी करने पर ध्यान दिया गया है। मध्यावधि (2030-2047) में ग्रीन हाइड्रोजन और कार्बन कैप्चर, उपयोग एवं भंडारण पर ध्यान दिया गया है। दीर्घावधि (2047-2070) में परिवर्तनकारी वैकल्पिक प्रौद्योगिकीय नवाचार निवल-शून्य लक्ष्य को प्राप्त करने में सहायता कर सकते हैं। इस उद्देश्य के लिए, इस्पात मंत्रालय विभिन्न हितधारकों के साथ निरंतर संपर्क में है। वित्त वर्ष 2022 में, संपन्न हुई संसदीय परामर्शदात्री समिति की दो बैठकें इस्पात क्षेत्र में अकार्बनीकरण एवं संसाधन दक्षता में सुधार को समर्पित थीं।

इस्पात उद्योग में अकार्बनीकरण को बढ़ावा देने हेतु किए गए अन्य उपायों में निम्नलिखित शामिल हैं:-

(1) इस्पात स्क्रैप पुनर्चक्रण नीति, 2019 इस्पात निर्माण में कोयले की खपत को कम करने के लिए स्वदेशी रूप से उत्पादित स्क्रैप की उपलब्धता को बढ़ाती है।

(2) नवीन एवं नवीकरणीय ऊर्जा मंत्रालय (एमएनआरई) ने हरित हाइड्रोजन के उत्पादन तथा उपयोग के लिए राष्ट्रीय हरित हाइड्रोजन मिशन की घोषणा की है। इस्पात क्षेत्र को भी इस मिशन में एक हितधारक बनाया गया है।

(3) मोटर वाहन (वाहन विखंडन सुविधा का पंजीकरण एवं कार्य) नियम सितंबर, 2021 इस्पात क्षेत्र में स्क्रैप की उपलब्धता को बढ़ाएगा।

(4) एमएनआरई द्वारा जनवरी, 2010 में शुरू किया गया राष्ट्रीय सौर मिशन सौर ऊर्जा के उपयोग को बढ़ावा देता है और इस्पात उद्योग के उत्सर्जन को कम करने में भी सहायता प्रदान करता है।

(5) नेशनल मिशन फॉर एन्हांस्ड एनर्जी एफीशिएन्सी के अंतर्गत परफॉर्म, एचीव एंड ट्रेड (पीएटी) योजना ऊर्जा खपत को कम करने के लिए प्रोत्साहित करती है।

(6) इस्पात क्षेत्र ने आधुनिकीकरण एवं विस्तारीकरण परियोजनाओं में वैश्विक रूप से उपलब्ध श्रेष्ठ उपलब्ध प्रौद्योगिकियों (बीएटी) को अपनाया है।

(7) जापान के नवीन ऊर्जा एवं औद्योगिक प्रौद्योगिकी विकास संगठन (एनईडीओ) मॉडल को इस्पात संयंत्रों में ऊर्जा दक्षता में सुधार के लिए कार्यान्वित किया गया है।

(ग): हरित इस्पात के बाजार को विस्तार देने की रणनीतियों में सार्वजनिक खरीद में हरित इस्पात की माँग के सृजन तथा उपभोक्ता आपूर्ति श्रृंखला में निम्न कार्बन उत्सर्जन वाले उत्पादों के निर्माण के लिए हरित इस्पात की खपत हेतु जागरुकता के प्रसार की परिकल्पना की गई है।

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MR. DEPUTY CHAIRMAN: First supplementary, पर मैं माननीय सदस्यों से रिक्वेस्ट करूंगा कि क्वेश्चन ऑवर का अपना महत्व है। वह शुरू होता है तो फिर उस पर बात और चर्चा होती है। प्लीज़।

SHRIMATI VANDANA CHAVAN: Sir, the iron and steel sector is considered as the core of our economy. And, it is projected to grow five times in the next two decades. The steel sector is extremely energy and resource intensive. And, in its present form, it is highly polluting. Today, the production of one tonne of steel means emission of three tonnes of carbon dioxide; whereas, globally this is only 1.4 tons.

So, I wish to know from the hon. Minister, through you, whether the Government has taken any steps to audit the different factors responsible for the present situation of excessive emissions and whether there is any R&D in that behalf.

SHRI JYOTIRADITYA M. SCINDIA: Sir, this is a very important question raised by the hon. Member. And, I would like to request you and the indulgence of the House in terms of enunciating our plan to address this issue. Certainly, steel sector is known as a hard-to-abate sector. However, we are not very far in terms of global averages so far as emission numbers are concerned, as opposed to what the hon. Member has said. Our current average emission intensity is about 2.55 tonnes CO_2, per tonne of crude steel, compared to about 1.95 tonnes which is global average.

However, we still have a way to go. Therefore, we have put in place a short-term plan, a medium-term plan, and a long-term plan. The short-term plan looks at reduction of carbon emissions through energy and resource efficiency in renewable energy. The medium-term plan, which is from 2030 to 2047, looks at Carbon Capture Utilization and Storage (CCUS) as well as usage of possibly green hydrogen, depending on technology innovations. And, the long-term plan, which is from 2047 to 2070, looks at a complete move over from ore-based and coal-based to much more technological innovations to come down to net zero, as far as the world is concerned.

I would like to inform the hon. Members, if you look at this industry, you have to have in place supply-side drivers as well as demand-side drivers to bring down the level of emissions. As far as supply-side drivers are concerned, we have looked at energy efficiency and we have actually achieved a lot. From 2005 to 2022, we have brought down emissions by almost 15 per cent. And, our target is to cut it by another 10 per cent by 2030. Because of the steps in this sector, the specific energy consumption has come down from 7 to 6.3 giga calories per tonne of crude steel

produced. And, the emission intensity also has come down from 3 to 2.55, in terms of the tonnes of CO_2, compared to the total crude steel that is produced. We are also looking at renewable energy as a source where we have looked at the national solar mission, where we hope to cut emissions by 20 per cent by 2030. Resource efficiency is another area. Here, we intend to use pellets, we intend to use scrap, and we intend to use plastic as a raw material. All these three areas can bring about lowering of emissions. In fact, scrap can lower emission by almost 85 per cent. So, that is another area that we are looking at tremendously. Today, India consumes 26 million tonnes of scrap. We import 4 million tonnes. So, today, 30 million tonnes of scrap is being used in India to manufacture steel, which is roughly about 22.5 per cent of our production. We are also looking at the possibility of green hydrogen when it becomes economically efficient to do so. Today, the prices are way above as well as carbon capture and storage. On the demand side as well, we are looking at two aspects. One, possibly Government mandation of usage of green steel because almost 20 per cent of our steel is used in Government projects. And, can we look at Government mandation for a small amount of steel production? If we look at roughly 20 per cent of a mandatory limit, I am giving you an example, at the 30 per cent price premium for green steel, the cost of projects will increase only by 1.26 per cent.

So, this is an avenue that we are looking at. And, finally, raising private demand, raising our awareness as a population, looking at branding-"green steel inside", eco-labelling as well as looking at mandating the private sector and ESG rating benefits, these are the things we are working on.

MR. DEPUTY CHAIRMAN: Second supplementary.

SHRIMATI VANDANA CHAVAN: The Minister has very articulately put down what exactly the Government is doing in that direction, and it is, certainly, very, very welcome. I would like to know whether the Government also considers to have certain green guidelines for every plant in this behalf. You have already mentioned about carbon capture, but the specific use of plastic waste to reduce the coal requirement, using solid waste which is generated as waste of the plants in roads and railway lines, like, it is done in many foreign countries and recycling of water and the light for an environmentally sustainable way of production, that can be differentiated from the other coals, so that the Government and the public sector can use it with a specific mandate till it comes into 100 per cent supply chain or demand chain.

SHRI JYOTIRADITYA M. SCINDIA: Again, a very good suggestion for action by the hon. Member. Let me say that it is not easy to mandate a universal formula if you will, in terms of what is the input material that every plant you should use because every plant has its own make-up. For example, you have some plants based on electric arc furnace, you have other plants that are based on blast furnace or BOF, some that use DRI process with pulverized coal injection, etc. So, every plant has its own system. But, certainly, as a category, we are looking at raw materials in terms of resource efficiency. Let me just give you a few examples. For example, if we look at the area of pellets, and if we use 100 per cent pellets. You can almost reduce your carbon dioxide emissions by 10 to 15 per cent. That is example number one. Number two, if you look at scrap, as I mentioned, you can lower carbon dioxide emissions by 85 per cent, and as I mentioned to you, we are using 30 million tonnes of scrap today in India as we speak. We are one of the countries that are on the forefront of using so much scrap compared to the rest of the world. Then, the third area is plastic. But that can be used as a mixture in terms of the process as opposed to the input. And, the fourth, which is very important, is beneficiation of iron ore. If you beneficiate iron ore, if you have 1 per cent increase in Fe content, you can lower the coke requirement by almost about 1 per cent. If you lower coke requirement, then, you lower carbon dioxide emissions as well.

श्री उपसभापतिः डा. अनिल अग्रवाल जी।

डा. अनिल अग्रवालः डिप्टी चेयरमैन सर, क्या माननीय इस्पात मंत्री जी यह बताने की कृपा करेंगे कि भारत में स्टील प्लांट से होने वाला पॉल्यूशन टोटल एयर पॉल्यूशन का कितना परसेंटेज है? इस एयर पॉल्यूशन को कम करने के लिए ....

श्री उपसभापतिः धन्यवाद, आपका एक क्वेश्चन हो गया। माननीय मंत्री जी , please be brief, क्योंकि और क्वेश्चंस हैं।

श्री ज्योतिरादित्य एम. सिंधियाः उपसभापति महोदय, मेरे पास टोटल एयर पॉल्यूशन का क्वॉंटिफिकेशन नहीं है, पर पर्यावरण मंत्रालय यूनाइटेड नेशंस फ्रेमवर्क कन्वेंशन ऑन क्लाइमेट चेंज (यूएनएफसीसीसी) को हर दो या तीन साल पर अपने आँकड़े सब्मिट करता है। जहाँ तक स्टील का विषय है, 2010 में जो 95 मिलियन टन कार्बन डाईऑक्साइड का प्रोडक्शन था, 2014 में यह 154 मिलियन टन तक गया और 2016 में यह 135 मिलियन टन तक गिरा है।

MR. DEPUTY CHAIRMAN: Thank you. Now, Shri P. Wilson.

SHRI P. WILSON: Hon. Minister, this question may be a little bit different. My question is: What is the status of the Salem Steel Plant, as complete disinvestment has been taking place? Please also tell whether the valuation has been done and whether the job security of the existing employees has been taken care of.

SHRI JYOTIRADITYA M. SCINDIA: Sir, it is not related to this question. But I will try and answer the hon. Member because I know it is of interest to him. I will, certainly, try and do that. The SSP is, certainly, slated for disinvestment. DIPAM of the Finance Minister and my Ministry of Steel, we both are working together on this. We have tried to take our investors to do due diligence and visit the plant, but, unfortunately, I regret to inform the House that the State Government has not been able to create the security environment for the due diligence by the investors to take place. However, we have said that the financial bids should be submitted. I believe; don't hold me to this, but I think some time in January, I stand to be corrected, I will revert to you. ..*(Interruptions)*..

DR. M. THAMBIDURAI: This is not correct.

MR. DEPUTY CHAIRMAN: Shri Ayodhya Rami Reddy Alla. No; nothing.

SHRI AYODHYA RAMI REDDY ALLA: Sir, the EU has recently released the Carbon Border Adjustment Mechanism which directs that goods imported from a high-polluting country will face a levy at the border based on its emission footprints. With India exporting 20-25 per cent ...

MR. DEPUTY CHAIRMAN: Please be brief.

SHRI AYODHYA RAMI REDDY ALLA: With India exporting 25 per cent of their steel production to the EU, how will this impact our steel industry, and what steps the Government is taking to address this issue?

SHRI JYOTIRADITYA M. SCHINDIA: Sir, as far as environment is concerned, this is an issue that affects the steel industry world-wide. I am also pleased to report to the House, through you, Sir, that India has now reached a new record. We have become the second largest steel producer in the world in the last eight years almost doubling our capacity from 100 million to 154 million tonnes worth of production. We are very much aware of the environmental concerns across the board. This affects producers

all across the world, and which is why I have enunciated in this House a very clear articulation of both the supply side and the demand side, the plans that we have in place to reduce CO2 emissions in the steel sector because without a doubt, this is the way the world is going and steel has to conform to that path of environmental protection.

MR. DEPUTY CHAIRMAN: Question No. 122.