GOVERNMENT OF INDIA
MINISTRY OF PLANNING

RAJYA SABHA
UNSTARRED QUESTION NO. 1096
TO BE ANSWERED ON 09.02.2026

GREEN TRANSITION INITIATIVES OF NITI AAYOG

1096. SHRI SANJAY SINGH

Will the Minister of Planning be pleased to state:

(a) key recommendations made by NITI Aayog regarding role of Carbon Capture, Utilization, Storage (CCUS) in decarbonizing India's economy, including sectors targeted and priorities identified;

(b) decisions taken at 25th PM-STIAC meeting to operationalize NITI Aayog's CCUS recommendations;

(c) measures that NITI Aayog is taking to enhance stakeholder consultations including with States/ UTs, industry partners, academia, international collaborators in formulating, implementing policies on SMRs, CCUS; and

(d) quantitative expected outcomes of SMR deployment and CCUS adoption identified by NITI Aayog in terms of: (i) additional clean energy capacity (in GW) expected by 2030 and 2047, (ii) Estimated reduction in carbon emissions?

ANSWER

MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF STATISTICS AND PROGRAMME IMPLEMENTATION; MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF PLANNING AND MINISTER OF STATE OF THE MINISTRY OF CULTURE

(RAO INDERJIT SINGH)

(a) NITI Aayog conducted a study on Carbon Capture, Utilization and Storage (CCUS) and published the Report in November 2022. The report highlights various recommendations pertaining to carbon capture, utilization and storage which may be referred in the Report in Chapter 7 "Conclusions" available at the following link:-

www.niti.gov.in/sites/default/files/2022-11/CCUS-Report.pdf

Some of the key recommendations are highlighted in the Annexure.

(b) The 25th Prime Minister's Science, Technology & Innovation Advisory Council (PM-STIAC) meeting was chaired by the Principal Scientific Advisor to the Government of India on July 9, 2024. In the meeting, a decision was taken to adopt CCUS technologies in a mission-mode and the mission for CCUS may be led by the Ministry of Power (MoP) as the nodal agency along with other relevant line ministries. An outlay of ₹20,000 crore has been proposed over the next 5 years for CCUS in the Union Budget 2026-27.

(c) **Measures taken by NITI Aayog to enhance stakeholder consultations on:**

Small Modular Reactors (SMRs):

NITI Aayog, in consultation with the Department of Atomic Energy (DAE) and NTPC Limited, organized an International Seminar on "The Role of Small Modular Reactors in the Energy Transition", as a part of the Third Energy Transitions Working Group Meeting (ETWG) under India's G20 Presidency in Mumbai on 16 May 2023. The Seminar brought together various stakeholders to deliberate upon the key issues with respect to SMR development and deployment. NITI Aayog also launched a report on "The Role of Small Modular Reactors in the Energy Transition", which is available at the NITI Aayog Website.

Carbon Capture Utilization and Storage (CCUS):

NITI Aayog conducted a two-day Workshop on the "Legal & Regulatory Frameworks and Technical Considerations for CCUS" on 22nd - 23rd August 2024, in collaboration with the US Government. The workshop witnessed participation from senior dignitaries from the US Embassy, US Department of Energy, Prime Minister's Office, NITI Aayog and Ministry of Power.

NITI Aayog organized another workshop on "CCUS in Indian Cement Sector" on 16th January 2025 at Vigyan Bhawan, New Delhi. The workshop examined the role of CCUS in the cement industries. The proceedings of the workshop are available in public domain at the NITI Aayog's website.

(d)(i) **Additional Clean Energy Capacity (in GW)**

In the Union Budget 2025–26, the Government announced a target of achieving 100 GWe installed nuclear energy capacity by 2047. The Government also allocated ₹20,000 crore for the design, development, and deployment of Small Modular Reactors (SMRs), aiming to operationalise at least five indigenously developed SMRs by 2033. SMRs are being developed with specific objectives of repurposing of retiring fossil fuel-based power plants, captive plants for energy intensive industries and off-grid applications for remote locations.

(d)(ii) **Estimated reduction in carbon emissions**

NITI Aayog report on CCUS, 2022 estimates potential to capture 750 Mt CO_2e/ annum emissions by 2050.

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ANNEXURE

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF RAJYA SABHA UNSTARRED QUESTION NO. 1096 FOR 09.02.2026 BY SHRI SANJAY SINGH: REGARDING GREEN TRANSITION INITIATIVES OF NITI AAYOG

Key Recommendations of NITI Aayog's Report on CCUS

1. Develop a comprehensive CCUS policy framework that creates sustainable markets for CCUS to incentivize adoption, support carbon-based product markets, and offset carbon capture costs through financial instruments.

2. The incentive schemes for manufacturing of low-carbon products may be linked to decarbonization outcomes and the incremental cost of producing clean/green products.

3. Establish CCUS clusters in key identified areas/ districts for hard to abate sectors such as thermal power, cement and steel industry.

4. The Government should support detailed pore-space and geological characterization of promising basins, source-sink mapping, and phased development of CO_2 storage infrastructure to enable commercial-scale geological storage in India.

5. Promote CCUS demonstration projects to identify optimal technologies for different sectors and applications using life-cycle assessment in the Indian context.

6. Establish robust measurement and verification frameworks for CO_2 emissions assessment, baselining, and monitoring across industries.

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