Greenhouse Gases Emissions Intensity (GEI) Target

Mains Syllabus: GS III - Environmental pollution and degradation.

Why in the News?

The government has notified draft Rules introducing targets for the reduction of greenhouse gas (GHG) emissions by “obligated entities” in energy-intensive sectors and industries.

What is Greenhouse Gases Emissions Intensity (GEI) Target Rules?

- **Green House Gases** - GHGs are gases that trap heat in the atmosphere and contribute to the “greenhouse effect” that raises surface temperature on Earth.

- The five most abundant GHGs in the atmosphere are water vapour, carbon dioxide, methane, nitrous oxide, and ozone.
- Other GHGs include synthetic fluorinated gases such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs).
- **GHG emissions intensity (GEI)** – It is the amount of GHGs that are emitted per unit of product output.
- For example, the amount of GHGs that are released in the production of, say, 1 tonne of cement, aluminium, or paper, etc.
- **tCO2e Unit** – The emission is measured in tCO2e/ equivalent output or product” i.e. tCO2e, or tonnes of carbon dioxide equivalent.
- **GEI Target Rules** - Ministry of Environment, Forest and Climate Change has

introduced the draft rules introducing targets for the reduction of greenhouse gas (GHG) emissions by "obligated entities" in energy-intensive sectors and industries.
- **CCTS compliance mechanism** – The rules put in place a compliance mechanism for the Carbon Credit Trading Scheme, 2023 (CCTS).

The CCTS was launched to create a framework for the trading of carbon credits, to facilitate the reduction of emissions in energy intensive industries, and to support India's climate commitments under the Paris Climate Agreement of 2015.

- **Emission reduction targets** - The Rules set forth baseline emissions for 2023-24 and define gradual reduction targets for the years 2025-26 and 2026-27.
- **Target industries** - These targets, for a two-year period starting 2025-26, cover 282 entities or industrial units in these industries — 13 aluminium plants, 186 cement plants, 53 pulp and paper plants, and 30 chlor-alkali plants.

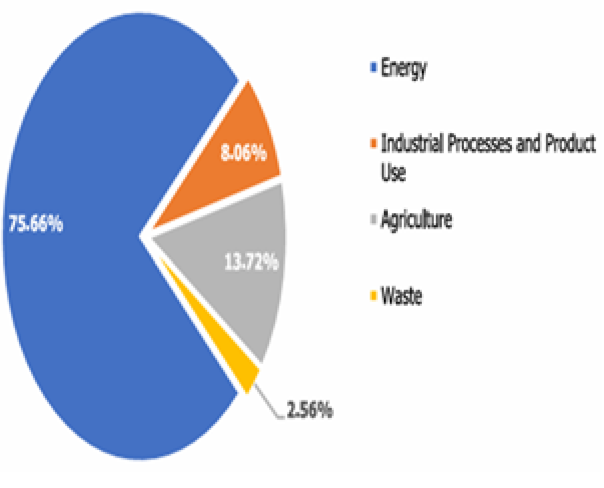

Figure ES 1: Distribution of GHG emissions ($GgCO_2e$) by sector, 2020

- Among the large corporations that have been assigned targets under the Rules are Vedanta, Hindalco, Bharat Aluminium, JSW Cement, Ultratech, Nalco, JK Cement, Dalmia Cement, Shree Cement, Grasim Industries, and JK Paper.
- **Compliance mechanism** - The Rules also lay down the mechanism for industries to comply with these targets, and specify penalties for their failure to do so.
- **Penal provision** - Industries that fail to meet their obligations under the carbon trading scheme would have to buy credits to meet their compliance shortfall, or be penalised by the Central Pollution Control Board, as per the Rules.

What are the significances of these target rules?

- **Meeting climate goals** - The introduction of industry-specific targets Rules aim to help India meet a key commitment made under the Paris Agreement.
    - To reduce the emissions intensity of its gross domestic product (the amount of energy used per unit of GDP) by 45% by 2030 compared to 2005 levels.

- **Greening Indian industries** - The ultimate objective is to push industries towards a low-carbon growth trajectory through reduction, removal or avoidance of GHG emissions.
- A cement plant can, for example, reduce its GEI by adopting cleaner and greener processes in the various stages of production.
- It could replace the use of coal with biomass, and adopt cleaner, more energy-efficient kilns.
- **Incentivising industries to decarbonise** - Industries will be issued carbon credits for cutting emissions intensity, which they can trade on India's carbon market.
- Carbon credits are traded through the Indian Carbon Market platform, with oversight of the Bureau of Energy Efficiency under the Union Ministry of Power.
- The availability of credits provides industries with the incentive to decarbonise.
- **Technology upgradation of industries** - The Rules promote the adoption of sustainable, cutting-edge technologies across traditionally high-emission industries, for addressing climate change.
- **Policy clarity** - With the introduction of the GEI targets, industries will know what exactly to achieve in order to earn carbon credits.
- They will also have to create action plans towards achieving those goals.
- **Economic transition** - This would enable sustainable value creation, spur innovation, reallocate capital to efficient players, and drive a new competitiveness rooted in low-carbon advantage.

What lies ahead?

- The rule recognises the need to balance industrial growth with climate commitments, while introducing a clear market mechanism for carbon trading and enforceable penalties for non-compliance.
- The MoEFCC's proposal will require stringent monitoring, reporting, and verification systems to ensure transparency and credibility.
- The success of the GEI rules will depend on the government's ability to set targets that are ambitious yet achievable.
- Overly aggressive mandates could backfire, encouraging non-compliance or evasive practices among companies.
- Equally important is the need to foster a stable, transparent carbon market with reliable pricing signals to drive genuine behavioural change.
- As the global economy accelerates its shift toward sustainable production, India must match ambition with execution.
- By embedding environmental responsibility into industrial policy, the GEI Target Rules represent a forward-looking move—both for the climate and for India's economic competitiveness on the world stage.

References

The Indian Express | Greenhouse Gases Emissions Intensity Targets

Policy Circle | Carbon market

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