



3 1 3

WORKING PAPER

**NET SOCIAL COST OF GHG EMISSIONS BY
LARGE MANUFACTURING FIRMS OF INDIA:
An Approximate Estimation**

Swati Verma

March 2026

**NET SOCIAL COST OF GHG EMISSIONS BY LARGE
MANUFACTURING FIRMS OF INDIA:
An Approximate Estimation**

Swati Verma

ISID **Institute for Studies in Industrial Development**
An institution of Indian Council of Social Science Research (Ministry of Education)

4 Vasant Kunj Institutional Area, New Delhi – 110 070

Phone: +91 11 3510 4511 | *E-mail:* info@isid.org.in | *Website:* <https://isid.org.in>

March 2026

ISID Working Papers are meant to disseminate the tentative results and findings obtained from the ongoing research activities at the Institute and to attract comments and suggestions which may kindly be addressed to the author.

NET SOCIAL COST OF GHG EMISSIONS BY LARGE MANUFACTURING FIRMS OF INDIA: An Approximate Estimation

*Swati Verma**

Abstract: Assessment of social cost of Green House Gas (GHG) emissions using cost-benefit analysis is a complex process, as it is based on various uncertain assumptions. Valuation of social cost of GHG emissions in India is ambiguous presently, and only few studies have calculated SCC for India at country level. This study uses country-level SCC estimates for India estimated by Ricke et al. (2018) and few others to approximately estimate the probable net social cost of GHG emissions for 200 largest manufacturing corporations of India in a recent year 2022-23. GHG emission value of a company is converted to monetary value using country-level SCC value for India to measure its 'total social cost' of GHG emissions. This value is subtracted from 'net private value' created in terms of profit generated by same company to roughly estimate its value of 'net social cost of GHG emissions'. A pre-dominant share of sample had reported GHG emission levels at higher than 10,000 tCO₂e in 2022-23. A majority of sample reported net negative SCC emission value when GHG emissions under Scope 1, 2 and 3 were considered together, with many reporting net negative SCC value of Rs. 1000 crore or higher. The study provides significant insights on probable net environmental impact of largest manufacturing corporations of India in terms of social cost of GHG emissions.

Keywords: Social Cost of Carbon, Social Cost of Greenhouse Gases, Carbon Emission, Manufacturing Sector, Green Transition, Cost-Benefit Analysis, Climate Change

JEL Classification: Q510, Q54, Q580

* Assistant Professor, Institute for Studies in Industrial Development, New Delhi 110 070.

Email: swati@isid.org.in

Disclaimer: The author shall remain solely responsible for any errors in the study. This paper was presented at the Third National Conference on India's Industrial Transformation: Towards a Manufacturing Strategy to Navigate Global Shifts organized by ISID, New Delhi held from October 29th to 31st, 2025.

For the complete working paper, please contact the author at swati@isid.org.in

List of ISID Working Papers

- 312 Financial Accessibility and Firm Performance: Do Domestic MSMEs Deserve Greater Attention than Foreign-Owned MSMEs? Akhilesh Kumar Sharma, March 2026
- 311 Unlocking Green Transition in Indian Organised Manufacturing, Mahua Paul, March 2026
- 310 Informality and the Dynamics of Continuity and Change: A Cluster-based Study of Man-made Fabric and Apparel Industry in Surat, Sangeeta Ghosh, March 2026
- 309 Women-owned Enterprise and Their Efficiency: Evidence from the Jeevika Programme in Bihar, Ajit Jha, Rahul Ranjan and Sushant Kumar, March 2026
- 308 Recent Approaches for Decarbonisation of India's Iron and Steel Sector, Anjali Tandon, March 2026
- 307 Does the Participation of Global Value Chains Promotes the Innovation and Technological Change? Bhushan Praveen Jangam, Badri Narayan Rath, Seenaiiah Kale, February 2026
- 306 New Technology, Cognitive Labour and the Structural limits of Capitalist Development: Lessons from Past Industrial Revolutions, Satyaki Roy, February 2026
- 305 What Drives MSME Resilience? Firm-Level Evidence from Developing Economies during COVID-19, Akhilesh Kumar Sharma, Sushil K Rai, February 2026
- 304 Credit Constraint and the Limitation of the Industrial Financing Architecture in India, Santosh Kumar Das, February 2026
- 303 Comparative Advantage and Intra-Industry Trade in Medical Device Industry of India, Shailender Kumar Hooda, October 2025
- 302 Growth and Performance of Indian Corporate Manufacturing Sector, Beena Saraswathy, July 2025
- 301 Harnessing India-Japan Economic Partnership for Supply Chain Resilience in the Context of Global Trade Policy Uncertainties, Nagesh Kumar, July 2025
- 300 Nature and Patterns of Entrepreneurial Activities in India, Sanjaya Kumar Malik, March 2025
- 299 Assessing Regional Manufacturing Productivity in India: A Comparative Analysis of Organised and Unorganised Manufacturing, Mahua Paul, Smruti Ranjan Sahoo, March 2025
- 298 Macro-economic Impact of Adoption of New Technologies on Indian Economy: An Analysis Using CGE Modelling Framework, Akhilesh Kumar Sharma, March 2025
- 297 Path of Construction Industry in Economic Development of India, Ajit Kumar Jha, Vaibhav Kumar, March 2025
- 296 Competitiveness and Efficiency of Manufacturing Firms, Seenaiiah Kale, February 2025
- 295 Mitigating the Challenges to Growth in the Textiles and Garments Sector in India: Evidence from Two Clusters, Sangeeta Ghosh, Meghna Dasgupta, February 2025

* Most of the working papers are downloadable from the institute's website: <https://isid.org.in/>

The Institute for Studies in Industrial Development (ISID) is a public-funded, autonomous institution dedicated to conducting policy research, advocacy, capacity-building, and outreach activities to foster the industrial transformation of India.

Registered on October 7, 1986, under the Indian Societies Registration Act 1860, ISID in 1988, became one of the institutions that are supported by the Indian Council of Social Science Research (ICSSR), (Government of India), through grants-in-aid. Since 2006, the Institute operates from its own well-appointed campus located in the Vasant Kunj Institutional Area in South Delhi.

The research themes and key projects are classified under following broad thematic areas,

- o Industrial Structure, Policies, Employment, and Statistics
- o Leveraging MSMEs and Start-ups for Industrial Transformation
- o Globalization, FDI, and Trade and India's Participation in GVCs
- o Technology, Innovation, and Industry 4.0
- o Green Industrialization
- o Spatial Dimensions of Industrial Development and Industrial Infrastructure
- o Sectoral Studies on Competitiveness of Indian Manufacturing

ISID is recognized as a Scientific and Industrial Research Organization (SIRO) by the Government of India. It is also listed on DARPAN portal of NITI Aayog (India's Planning Agency) as a recognized think-tank. It is also a member of the Asia-Pacific Research Network on Trade (ARTNet) and the South Asia Network on SDGs (SANS) of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). ISID's Databases and e-resources are accessed by the academic community across the country through the Information and Library Network (INFLIBNET) Centre of the University Grant Commission (UGC).

ISID Institute for Studies in Industrial Development

An institution of Indian Council of Social Science Research (Ministry of Education)

Policy Research to Foster India's Industrial Transformation

4 Vasant Kunj Institutional Area, New Delhi - 110070, India

Phone: +91 11 3510 4511 | E-mail: info@isid.org.in | Website: <https://isid.org.in>