TUV INDIA
TUV NORD GROUP

Independent Assurance Statement

Introduction and Engagement

Tata Steel Limited with registered office at Bombay House, 24, Homi Mody Street. Mumbai – 400001 (Hereafter 'TSL' or 'the Company') commissioned TUV India Private Limited with registered office at Mumbai 400086 (hereafter 'TUVI') to conduct the independent assurance of following

a) Consolidated GHG (Green House Gas) emissions of the Company, its key subsidiaries and joint ventures collectively 'Tata Steel Group' (hereafter 'TSG') which include "Limited level assurance" for reporting period 1st April 2020 to 31st March 2021
b) GHG emissions includes direct (Scope 1), energy indirect (Scope 2) and other indirect (Scope 3) – 'scope of emissions'

This assurance engagement has been conducted against the methodology & standards of The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), World Steel Association CO_2 Data Collection User Guide, ISO 14064-3, ISAE 3000 (revised), ISAE 3410 (GHGs) to verify 'TSG' GHG emissions. The verification was conducted during May 2021 to July 2021 remotely via the MS Team.

Scope, Boundary and Limitations of Assurance

The scope of the assurance included the verification of scope 1, 2, and 3 GHG emissions. In particular, the assurance engagement included the following:

- Verification of the application of the input parameters, associated emission factors, and principles of calculation as mentioned in the "FY21 GHG Inventory_Tata Steel Summary R5.3" sheet.
- Verification of quality of information presented in the spreadsheets over the reporting period

The Company applies the Equity-based control approach for consolidation of GHG emissions of TSG. The boundary of 2020-21 GHG inventory of TSG comprises Tata Steel Limited, its key subsidiaries and joint ventures such as integrated steel plants in India, rest of the world.
Refer the Annexure 1 for the reporting boundary of Tata Steel.

Verification Methodology

The GHG inventory of TSG has been evaluated against the following criteria:

- Application of the principles and requirements of the worldsteel "CO_2 emissions data submission form for worldsteel sectoral approach" (CO2 data collection user guide, version 10)
- Adherence to the principles as prescribed in the ISO14064 and GHG protocol

During the assurance engagement, TUVI adopted a risk-based approach, concentrating on verification efforts on the source of GHG emissions under scope 1, 2 and 3 with limited level of GHG emissions assurance. TUVI has verified the robustness of the underlying data management system, information flow and controls. In doing so: TUVI verified the GHG emissions reported in the spreadsheets and assessed the robustness of the data management system, information flow and controls; TUVI examined and reviewed the documents, data and other information made available by TSL for scope 1, 2 and 3 GHG emissions; TUVI conducted interviews with key representatives including data owners and decision-makers from different functions at the corporate office, and representatives of TSG. TUVI verified sample-based checks of the processes for generating, gathering and managing the quantitative data and qualitative information included in the spreadsheet for the reporting period. The scope of verification comprised of the assessment of reported data, excel worksheets, monitoring tool (formatted worksheets) and processes along with exhaustive interviews with members of management, staff (responsible for data collection and processing) and representatives of TSG over the communication and collaboration platform of Microsoft Teams. Data and documents that have been provided via the dedicated worksheets were verified and found consistent with the calculations.

Conclusions

In our opinion, based on the scope of this assurance engagement, the disclosures on GHG emissions reported in the spreadsheets adequately. During the verification we have performed, nothing has come to our attention that causes us to believe that the information subject to the assurance engagement is not prepared, w.r.t. GHG emissions (scope 1, scope 2 and scope 3), in accordance with the "CO_2 emissions data submission form for worldsteel sectoral approach" (CO_2 Data collection user guide, version 10), and GHG Protocol with regards to the reporting criteria.

Refer the annexure 1: Reporting boundary of GHG Inventory of TSG for 2020-21
Refer the annexure 2: GHG inventory of TSG for 2020-21

Exclusions: There are minor assets and business activities contributing lesser to overall GHG emissions, Ex: sand mine leases held in India, Offices, accommodations, Hospitals, Townships, Guest Houses & other assets serving the community, owned or hired and managed by the Company.

TUVI did not perform any assurance of procedures on the prospective information, such as targets, expectations, and ambitions. Consequently, TUVI draws no conclusion on the prospective information. This assurance statement has been prepared in accordance with the terms of our engagement. In accordance with the ISAE 3000 (revised) requirements read in conjunction with ISAE 3410, the below principles were adhered

- **Independence:** TUVI follows IESBA (International Ethics Standards Board for Accountants) Code which, adopts a threats and safeguards approach to independence. It is confirmed that the Assurance Team is selected to avoid situations of self-interest, self-review, advocacy, and familiarity. The Assessment Team was safeguarded from any type of intimidation.
- **Quality control:** The Assurance Team complies with the Code of Ethics for Professional Accountants issued by the IESBA, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behavior. In accordance with International Standard on Quality Control, TUVI maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

In the context of GHG reporting the following contemporary principles has been observed:
Inclusivity: The report describes the chosen approach for GHG emission accounting in a structured and transparent manner in line with the GHG protocol and worldsteel User Guide. In accordance with the requirements of its key stakeholders TSL has identified its significant emission sources within the chosen scope (scope 1, 2 and 3 emission; following the GHG Protocol definition).
Materiality: The principle of materiality has been considered by including all relevant GHG emission sources.
Responsiveness: Responsiveness is integrated into the stakeholder engagement process. GHG related information is intended to be published via CDP initiative.
Impact: 'TSG' is monitoring and measuring the environment KPIs through there "FY21 GHG Inventory_Tata Steel Summary R5.3" sheet
TUVI expressly disclaims any liability or co-responsibility for any decision a person or entity would make based on this Assurance Statement. The intended users of this assurance statement are the management of TSL. It is further intended to be used as part of the CDP disclosure. The Management of the TSL is responsible for the information provided in the spreadsheet as well as the process of collecting; analyzing and reporting the information as presented in the worksheet, including website maintenance and its integrity. TUVI's responsibility regarding this verification is in accordance with the agreed scope of work which includes GHG emissions (scope 1, 2 and 3) disclosed by TSL in the spreadsheet. This assurance engagement is based on the assumption that the data and the information provided to TUVI by TSL are complete and true.

TUV's Competence and Independence

TUVI is an independent, neutral, third-party providing carbon services, with qualified environmental and GHG verifier. TUVI states its independence and impartiality with regard to this assurance engagement. In the reporting year, TUVI did not work with TSL on any engagement that could compromise the independence or impartiality of our findings, conclusions. TUVI was not involved in the preparation of any statements or data included in the spreadsheet, with the exception of this Assurance Statement. TUVI maintains complete impartiality toward any people interviewed during the assurance engagement. TUVI did not interact with TSL or its stakeholders in any prior engagements which could impair the impartiality of the results and recommendations made in this statement.

For and on behalf of TUV India Private Limited

Manojkumar Borekar
Product Head – Sustainability Assurance Service
TUV India Private Limited

Date: 24/07/2021
Place: Mumbai, India
Assurance Statement no: 8119190189
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Annexure-1: Reporting Boundary of GHG Inventory of Tata Steel for 2020-21

Tata Steel applies the Equity based control approach for consolidation of GHG emissions of Tata Steel Group (TSG). The boundary of 2020-21 GHG inventory of TSG comprises Tata Steel Limited, its key subsidiaries and joint ventures such as integrated steel plants in India, Netherlands and UK; EAF based secondary steelmaking in Thailand and Singapore; various industrial activities (mining, mineral processing, coke-making, smelting, casting, downstream steel rolling & processing, fabrication, ferro-alloy making, power generation, lime calcination etc.) and international maritime services with installations spread across Belgium, Canada, France, Germany, India, Malaysia, Netherlands, Singapore, Sweden, Thailand, Turkey, UK and USA.

1. Tata Steel Limited (parent company)

Key Subsidiaries

2. Bhubaneshwar Power Private Limited (BPPL)
3. Indian Steel & Wire Products Limited (ISWP)
4. NatSteel Holdings Pte. Ltd.
   - 4.1. NatSteel Recycling Pte. Ltd.
   - 4.2. TSN Wires Co. Ltd.
   - 4.3. The Siam Industrial Wire Co. Ltd.
   - 4.4. Easteel Services (Malaysia) Sdn. Bhd
5. Tata Metaliks Limited
6. Tata Pigments Limited (TPL)
7. Tata Steel (Thailand) Plc.
   - 7.1. Tata Steel Manufacturing (Thailand) Public Company Limited (TSMT) (formerly known as N.T.S. Steel Group Plc)
   - 7.2. The Siam Iron and Steel (2001) Co., Ltd.
   - 7.3. Siam Construction Steel Company Limited
8. Tata Steel BSL Limited
9. Angul Energy Limited
10. Tata Steel Downstream Products Limited (formerly Tata Steel Processing & Distribution Limited) (TSDPL)
11. Tata Steel Long Products Limited
12. Tata Steel Mining Limited (TSML)
13. Tata Steel Utilities and Infrastructure Services Limited (formerly JUSCO)
14. Tata Steel Europe Limited
    - 14.1. Apollo Metals, Limited
    - 14.2. Hartlepool SAW Pipe Mills
    - 14.3. Hille & Müller GmbH
    - 14.4. Istanbul Metal San. ve Tic. A.Ş.
    - 14.5. Surahammar Bruks AB
    - 14.6. Segal at Ivôz-Ramet
    - 14.7. Shapfell
    - 14.8. Tata Steel Corby
    - 14.9. Tata Steel Heavy Gauge Decoiling
    - 14.10. Tata Steel IJmuiden BV
    - 14.11. Tata Steel Maubeuge SAS
    - 14.12. Tata Steel Packaging Recycling
    - 14.13. Tata Steel Shotton
    - 14.14. Tata Steel UK Limited
    - 14.15. Thomas Steel Strip Corp.
    - 14.16. TubesNL (MOZ)
15. Jamshedpur Engineering & Machine Manufacturing Company (JEMCO)
16. The Tinplate Company of India Limited (TCIL)

Key Joint Ventures

17. Industrial Energy Limited
18. JAMIPOL Limited
19. Jamshedpur Continuous Annealing & Processing Company Private Limited (JCAPCPL)
20. Tata BlueScope Steel Pvt. Limited
21. Tata NYK Shipping Pte. Limited
22. Tata Steel Minerals Canada Ltd (TSMCL)

Annexure-2: GHG inventory of Tata Steel Group for 2020-21

Reporting Period: Financial year 2020-21 (01 Apr 2020 to 31 Mar 2021) Consolidation approach: Equity-share approach (https://ghgprotocol.org/.../ghg-protocol-revised.pdf#page=19)

Note: All GHG emission figures in following tables represent consolidated emission on above approach.

Table 1 Gross global emissions:
(Reference: CDP 2021 Questionnaire - C6.1& 6.3)

Emission Scope	Unit	Value
Scope 1	tonnes CO_2e	**56,893,314**
Scope 2 (location-based)	tonnes CO_2e	**2,016,124**
Scope 2 (market-based)	tonnes CO_2e	**2,501,534**

Table 2 Total gross global Scope 3 emissions (tonnes CO_2e)
(Reference: CDP 2021 Questionnaire - C6.5)

Categories	Scope 3 emissions
1. Fuel- & Energy-Related Activities Not Included in Scope 1 or Scope 2	8,400,977
2. Upstream transportation and distribution	2,984,910
3. Purchased goods and services	2,872,584
4. Processing of sold products	1,916,019
5. Downstream transportation and distribution	1,842,556
6. End-of-life treatment of sold products	1,395,806
7. Capital goods	966,062
8. Waste generated in operations	65,046
9. Employee commuting	37,608
10. Downstream leased assets	2,944
11. Business travel	2,012
12. Franchises	Not significant
13. Investment	Not Assessed
14. Upstream leased assets	Not significant

Note: Above Scope-3 emissions excludes emissions Offsets, as listed below. Till last year, these were aggregated as mainstream emissions.

Table 3 Emissions Offset: Use of sold products -9,900,482 tCO2e (-ve denotes emissions offset)
(Reference: CDP 2021 Questionnaire – C4.5)

Categories	Scope 3 emissions	Particular
Premium grade Steel	-5,076,528	High strength steel for automotive & construction
BF Slag & LD Slag in Cement making	-4,083,856	Dry sent for Cement making only
Cold Iron, Ferro-Shot	-740,098	includes Pooled Iron / Pig Iron sold

Table 4 Gross global combined Scope 1 and 2 emissions
(Reference: CDP 2021 Questionnaire - C6.10)

Parameter	Unit	Value
Revenue	Billion INR	1,563
Emission (Scope 1 & 2, location based)	tonnes CO_2e / Revenue (Million INR)	37.7
Emission (Scope 1 & 2, market based)	tonnes CO_2e / Revenue (Million INR)	38.0

Carbon Dioxide emissions from Biogenic Carbon relevant to Tata Steel
(Reference: CDP 2021 Questionnaire - C-6.7)
NIL (not relevant, considering the nature of business and actual operations)

Table 5 Emissions intensity by steel production process route
(Reference: CDP 2021 Questionnaire - C-ST6.14)

Process Route	tonne CO_2 / tonne of Crude Steel production
Blast furnace- basic oxygen furnace	2.13
Scrap-electric arc furnace	0.62
Other (Blast furnace/Direct reduced iron-basic oxygen furnace/electric arc furnace/conarc)	3.04

Note: Emission intensities are based on Worldsteel's CO2 Data Collection User Guide

Table 6 Total gross global Scope 1 emissions by greenhouse gas type (tonnes CO_2e):
(Reference: CDP 2021 Questionnaire - C7.1a)

GHG-wise Breakdown	Grand Total (tCO_2e)	CO_2 (tCO_2e)	CH_4 (tCO_2e)	N_2O (tCO_2e)	HFCs (tCO_2e)	PFC (tCO_2e)	SF_6 (tCO_2e)	NF_3 (tCO_2e)	HCFC (tCO_2e)
Scope 1	56,893,314	55,641,077	283,092	955,009	4,589	-	-	-	9,547

GWP as per IPCC Fifth Assessment Report, 2014 (AR5)

Table 7 Total gross global Scope 1 & 2 emissions (tonnes CO_2e):
(Reference: CDP 2021 Questionnaire - C7.2 & C7.5)

Country/Region	Scope 1	Scope 2 (Location-based)	Scope 2 (Market-based)
India	43,881,538	1,653,028	2,138,438
UK	6,490,958	149,907	149,907
Netherlands	5,748,735	(405,532)	(405,532)
Singapore	426,309	90,960	90,960
Thailand	213,444	492,382	492,382
France	41,549	1,175	1,175
Canada [4]	25,683	-	-
Belgium	23,631	6,346	6,346
USA	20,381	23,239	23,239
Germany	13,526	786	786
Turkey	4,544	1,920	1,920
Sweden	2,912	554	554
Malaysia	103	1,360	1,360
Total	**56,893,314**	**2,016,124**	**2,501,534**

Table 8 Total gross global Scope 1 & 2 emissions:
(Reference: CDP 2021 Questionnaire - C7.3a & C7.6a)

Business Division	Emissions (tonnes CO_2e)		
	Scope 1	Scope 2 (location based)	Scope 2 (market-based)
Steel Business including inter divisional adjustments [1]	52,547,037	1,413,474	1,898,884
Utilities and Others [2]	4,346,277	602,650	602,650
Total	56,893,314	2,016,124	2,501,534

Table 9 Total gross global Scope 1 & 2 emissions (tonnes CO_2e):
(Reference: CDP 2021 Questionnaire - C7.3b & C7.6b)

Facility	Scope 1	Scope 2 emissions (location-based)	Scope 2 emissions (market-based)
IJmuiden Steel Works (TSE), Port Talbot Steel Works (TSE), Natsteel Singapore, 3 sites under Tata Steel Thailand (TSTh), Kalinganagar	37,246,734	547,318	553,575

[1] Tata Steel Limited standalone (TSL), Tata Steel Europe (TSE), Natsteel, Tata Steel Thailand (TSTh), Tata Steel BSL Limited (TSBSL), Tata Steel Long Products Limited (TSLPL), Tata Metaliks Limited and The Tinplate Company of India Limited including inter divisional adjustment on electrical energy generated and consumed within the reporting boundary

[2] **Utilities**: Bhubaneshwar Power Private Limited, Industrial Energy Limited (JV) and Angul Energy Limited; **Others** (Tata Pigments Limited, Tata Steel Utilities and Infrastructure Services Limited, Tata Steel Downstream Products Limited, Indian Steel & Wire Products Limited, Jamshedpur Engineering & Machine Manufacturing Company, Tata NYK Shipping Pte Ltd. (JV), Jamshedpur Continuous Annealing & Processing Company Private Limited (JV), JAMIPOL (JV), Tata BlueScope Steel (JV), Tata Steel Mining Ltd., Tata Steel Minerals Canada Ltd.

Steel Works (TSL), Angul Steel Works (TSBSL), Gamharia Steel Works (TSLPL) & Others [3]			
Jamshedpur Steel Works (TSJ)	19,646,580	1,468,806	1,947,959
Total	**56,893,314**	**2,016,124**	**2,501,534**

Table 10 Total gross global Scope 1 & 2 emissions (tonnes CO_2e):
(Reference: CDP 2021 Questionnaire - C7.3c & C7.6c)

Activity	Scope 1 emissions	Scope 2 emissions (location-based)	Scope 2 emissions (market-based)
Iron & Steel Making	50,316,746	371,087	859,922
Power Generation	3,823,081	287,438	287,438
Mining & Mineral Beneficiation	1,356,871	227,558	224,138
Others	1,171,943	746,706	746,702
Ferro Alloy Making	224,673	383,334	383,334
Total	**56,893,314**	**2,016,124**	**2,501,534**

Table 11 Total gross global Scope 1 & 2 emissions (tonnes CO_2e):
(Reference: CDP 2020 Questionnaire - C-ST7.4)

Value Chain	Scope 1 emissions	Scope 2 emissions (location-based)	Scope 2 emissions (market-based)
Steel Value Chain	56,892,565	1,948,410	2,433,820
Non-Steel Value Chain	750	67,714	67,714
Total	**56,893,314**	**2,016,124**	**2,501,534**

Reference:

1. *Integrated Report & Annual Accounts 2020-21 | 114th Year – Page-123 for Revenue (https://www.tatasteel.com/media/13915/tsl_ir21_final.pdf)*
2. *Integrated Report & Annual Accounts 2020-21 | 114th Year – Page-220,221 for Revenue Equity Share Holding - (https://www.tatasteel.com/media/13915/tsl_ir21_final.pdf)*
3. *Methodology:*
    a. *Worldsteel's CO2 Data Collection User Guide (v10) and (https://www.worldsteel.org/en/User Guide V10.pdf)*
    b. *GHG Protocol (for sites other than Steel Plants & Scope-3 guidance) –*
        i. *The GHG Protocol Corporate Accounting and Reporting Standard (https://ghgprotocol.org/corporate-standard)*
        ii. *The Corporate Value Chain (Scope 3) Accounting and Reporting Standard (https://ghgprotocol.org/standards/scope-3-standard)*
        iii. *Scope 3 Calculation Guidance (https://ghgprotocol.org/scope-3-technical-calculation-guidance)*
4. *Standards and other references used:*
    a. *IPCC Guidelines for National Greenhouse Gas Inventories, 2006 – Table 2.2, chapter 2 (https://www.ipcc.../2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf);*
    b. *EU-ETS emission reporting regulations.*

[3] Tata Metaliks Limited, The Tinplate Company of India Limited, Bhubaneshwar Power Private Limited, Industrial Energy Limited (JV) and Angul Energy Limited; Others (Tata Pigments Limited, Tata Steel Utilities and Infrastructure Services Limited, Tata Steel Downstream Products Limited, Indian Steel & Wire Products Limited, Jamshedpur Engineering & Machine Manufacturing Company, Tata NYK Shipping Pte Ltd. (JV), Jamshedpur Continuous Annealing & Processing Company Private Limited (JV), Tata Steel Mining Ltd, Tata Steel Minerals Canada Ltd., JAMIPOL (JV), Tata BlueScope Steel (JV)

[4] Emissions inventory of Tata Steel Minerals Canada Ltd. for the Calendar year 2019