Independent Greenhouse Gas Verification Statement

Introduction

DNV Business Assurance India Private Limited ('DNV') has been commissioned by the management of JSW Cement Limited ('the Company' or 'JSW Cement', Corporate Identification Number: U26957MH2006PLC160839) to carry out an independent verification of JSW Cement's Scope 1 and Scope 2 Greenhouse Gas Emissions (the 'GHG Emissions') data in spreadsheets for six (6) sites including five (5) own operational sites and one (1) subsidiary site (i.e. Shiva cement) for the period 1st April 2020 – 31st March 2021. This verification has been carried out as part of the overall work of assurance of JSW Cement's Sustainability Report 2020-21 and other disclosures as applicable. The Company has applied the World Business Council for Sustainable Development Cement Sustainability Initiative ('WBCSD CSI') Protocol Version 3.1, to calculate its GHG emissions.

The verification provides a limited level of customized engagement as per DNV's VeriSustain™[1] protocol, which is based on our professional experience, international assurance best practice including International Standard on Assurance Engagements 3000 (ISAE 3000) Revised* and the Global Reporting Principle's (GRI's) Principles for Defining Report Content and Quality. This verification applies a ±5% uncertainty threshold towards errors and omissions.

JSW Cement is responsible for the collection, analysis, aggregation, preparation (conversion factors, assumptions, methodology, calculations) and presentation of GHG Emissions as part of its sustainability disclosures. Our responsibility of performing this work is to the management of Company and in accordance with terms of reference agreed with the Company. The verification engagement is based on the assumption that the data provided to us is complete, sufficient, true and free from material misstatements. DNV disclaims any liability or co-responsibility for any decision a person or entity would make based on this verification statement. The verification was carried out from September 2021 to April 2022 by a team of qualified sustainability and GHG assessors.

Scope, Boundary and Limitations of Verification

The scope of work agreed upon with Company includes verification of its GHG emissions as below:

- Scope 1 emissions arising from stationary combustion of fossil fuels and alternate fuels - Coal, Petcoke, Dolochar, High Speed Diesel (HSD), Light Diesel Oil (LDO), Plastic, Plastic Pyrolysis Fuel (PPF) Oil, Rice Husk, Carbon Black, Mix Industrial Waste (Solid and Liquid), Blast Furnace (BF) Gas and Coke Oven (CO) Gas and process emission associated with clinker production.
- Scope 2 emissions arising from consumption of purchased electricity from the grid.

The operational boundary selected for reporting and the consolidation approach is based on operational control criterion adopted by JSW Cement and includes the following locations that is, 5 operational sites in India:

- Nandyal (Integrated Cement Plant) at Kurnool, Andhra Pradesh excluding mining operations.
- Dolvi (Grinding Unit) at Raigad, Maharashtra.
- Salboni (Grinding Unit) at Paschim Medinipur, West Bengal.
- Vijaynagar (Grinding Unit) at Bellary, Karnataka.
- Jajpur (Grinding Unit) at Jajpur, Odisha.
- Shiva (Integrated Cement Plant) at Sundargarh, Odisha, excluding mining operation.

We did not come across any limitations to the agreed scope of work except the use of default values to calculate GHG emissions.

Verification Methodology

The verification was conducted by DNV in accordance with the requirements as set out in VeriSustain for a limited level of verification while adopting a risk-based approach and selection of samples. We carried out the following activities:

- Desk review of the Company's emissions data and the production data for FY 2020-21 provided in spreadsheets.
- Review of activity data and related evidence maintained in JSW Cement's ERP system.
- Interaction with key managers and data owners to review data consolidation systems of the Company and sampled operational sites including reviews of emission factors and assumptions used for calculations.
- Remote sampling of activity data and sample evidence related to the following sampled operational sites that is, Nandyal – Kurnool, Andhra Pradesh, Jajpur – Jajpur, Odisha, Vijaynagar – Bellary, Karnataka.
- Review of the consolidated GHG emissions and the production data in order to calculate the emission intensity for all six operational sites with environment and sustainability teams.

Due to the outbreak of the COVID-19 pandemic and related travel restrictions, we carried out remote assessments following DNV's remote audit methodology, as one-to-one discussions and onsite location audits were not feasible.

The VeriSustain protocol is available on request from www.dnv.com
** Assurance Engagements other than Audits or Reviews of Historical Financial Information.*

Conclusion

On the basis of our verification methodology and scope of work agreed upon, nothing has come to our attention to believe that the production data and the GHG data (absolute emissions and intensity) as below are not a correct representation of JSW Cement Limited's GHG emissions profile during FY 2020-21:

	Cementitious Material Production (Ton)	Net Scope 1 Emissions (TCO_{2e})	Net Scope 2 Emissions (TCO_{2e})	Absolute Emissions (TCO_{2e})	Specific CO_2 Emissions (TCO_{2e} / Ton)
Nandyal Plant (Integrated Plant)	1,757,132.84	1,366,449.49	136,090.48	1,502,539.97	855.11
Dolvi Plant (Grinding Unit)	1,069,998.90	27,376.86	47,001.50	74,378.36	69.51
Salboni Plant (Grinding Unit)	1,428,171.59	47,878.94	46,602.92	94,481.86	66.16
Vijayanagar Plant (Grinding Unit)	2,339,412.81	64,383.21	71,896.48	136,279.69	58.25
Jajpur Plant (Grinding Unit)	588,703.56	15,739.20	20,531.49	36,270.69	61.61
Shiva Plant (Integrated plant)	86,260.00	52,030.75	10,673.44	62,704.19	726.92
Total	7,269,679.70	1,573,858.45	332,796.31	1,906,654.76	262.27

Note 1: Emissions factors are derived from 2006 IPCC Guidelines for National Greenhouse Gas Inventories, WBCSD CSI V3.1 protocol and Combined Margin factor of 0.91 tCO_2/MWh from CO_2 Baseline Database for the Indian Power Sector User Guide Version 16.0 March 2021. Assumptions and emission factors considered are as follows: PPF Oil: Density – 0.89 kg/l, LDO: Density – 0.914 kg/l, Coal: EF - 96 tCO_2/TJ, Petcoke: EF – 92.8 tCO_2/TJ, Plastic: EF - 96 tCO_2/TJ, Mix Ind. Waste: EF - 83 tCO_2/TJ, PPF Oil: EF - 74 tCO_2/TJ, Dolochar: EF - 80 tCO_2/TJ, Carbon Black: EF - 83 tCO_2/TJ, HSD/ LDO: EF – 74.1 tCO_2/TJ, BF Gas: EF - 260 tCO_2/TJ, CO Gas: EF – 44.4 tCO_2/TJ.
Note 2: The GHG emissions reported by JSW Cement pertains to activities related to production of Cement. Boundary identified by JSW Cement for its Integrated Cement Plant at Nandyal excludes mining operations.
Note 3: As per WBCSD CSI V3.1 protocol, Gross Scope 1 emissions represent total CO_2 emissions from all identified fuel sources (Coal, Petcoke, Dolochar, HSD, LDO, Plastic, PPF Oil, Rice Husk, Carbon Black, Mix Industrial Waste (Solid and Liquid), BO Gas and CO Gas) and process emission associated with clinker production. while Net Scope 1 emissions are calculated as gross emissions minus emissions from the use of alternative fuels (Plastic, Mix Ind. Waste, PPF Oil, Dolochar, Carbon Black and PPF Oil). Note 4: As per WBCSD CSI V3.1 protocol, Gross Scope 2 emissions represent total CO_2 emissions from consumption of purchased electricity while Net Scope 2 emissions are calculated as gross emissions minus emissions from the consumption of the electricity from renewable source (Solar).
Note 5: Cementitious material production provided in the table above includes sum total of saleable production of cement and GGBS to avoid double accounting and excludes purchased clinker from external sources.

DNV's Competence and Independence

We are a global provider of sustainability services, with qualified environmental and social assurance specialists working in over 100 countries. The team involved in the verification were qualified to carry out the GHG verification. This work was carried out by an independent team and does not compromise the independence or impartiality of our verification engagement or associated findings, conclusions and recommendations. We were not involved in the preparation of GHG emissions data except for this GHG verification statement. DNV maintains complete impartiality toward internal stakeholders interviewed during the verification process.

For DNV Business Assurance India Private Limited,

Aravind, Arun Digitally signed by Aravind, Arun Date: 2022.05.09 11:46:18 +05'30' Arun Aravind Lead Verifier DNV Business Assurance India Private Limited, India.	Radhakrishnan, Kiran Digitally signed by Radhakrishnan, Kiran Date: 2022.05.09 14:38:09 +05'30' Kiran Radhakrishnan Technical Reviewer DNV Business Assurance India Private Limited, India.

Bengaluru, India, 9th May 2022.

DNV Business Assurance India Private Limited is part of DNV – Business Assurance, a global provider of certification, verification, assessment and training services, helping customers to build sustainable business performance. www.dnv.com