

Environment, Health, & Safety Reporting Criteria – 2019 Annual Report

This document sets out the scope, principles, and methodologies used in reporting environment, health, & safety metrics in the Environment, Health, & Safety section of Tate & Lyle's Annual Report 2019 ("the Report").

Our General Reporting Principles

We have sought to ensure that:

- The reported data accurately reflects our performance and serves the general needs of the Report's users
- Information reported is transparent to enable the Report's users to have confidence in the integrity of the data and information we report
- The data reported is meaningful and consistent with the definitions, scope and boundaries stated in these Reporting Criteria
- Consistent data scope and methodologies are used year-to-year and between our historical 'base year' (2008) and subsequent years - to provide accurate and transparent performance comparison over time; and that any material changes in data scope or measurement methodologies versus the previous reporting year, or the base year, are made clear
- Any specific, material exclusions are stated and explained
- The use of any assumptions we make and regarding our measurement and calculation methods are stated.
 - We are not aware of any estimates, assumptions or extrapolations used in relation to the CR data presented in the Report that are material to data quality.

Restatement of reported data

We periodically open, close, acquire or divest manufacturing, R&D and office facilities based on business requirements. As appropriate to maintain or improve the accuracy and/or comparability of data and performance trends between years and/or with the historical base-year of 2008, and/or where any variance in prior years' data has been identified, the data is restated in the Report.

Reporting Boundaries

The reporting boundaries used in the Report are as follows:

Environment, Health and Safety Data

- Environmental, Health and Safety related performance data are reported by calendar year (i.e. 1 January through 31 December 2018), to ensure regulatory compliance with U.S. EPA and OSHA reporting requirements.
- Safety performance data is reported from Tate & Lyle-owned and joint-venture manufacturing facilities, offices and other facilities (e.g. research & development centers), globally.
- Safety performance data are collected for all Tate & Lyle employees, regardless of the duration of employment, and contractors. This includes joint-ventures where Tate & Lyle owns $\geq 50\%$.
- Environmental performance data are reported from qualifying Tate & Lyle-owned and joint-venture manufacturing facilities globally.
 - Qualifying facilities - for which data is reported include facilities where 2015 energy use comprised an amount equal to or greater than 0.05% of the 2015 Group energy use; the sum of all facilities' data thereby excluded comprises <1% of the 2015 Group energy use, arising from a few small manufacturing facilities. These exclusions are not material to the environmental performance of the Group either individually or in total.

Site Openings, Restarts and Acquisitions

Unless otherwise stated, the following principles are applied:

- Safety data is included from the date of purchase or operation state date of a new facility
- Safety data is included in the external reporting scope for the first full calendar year of its operation under our ownership / control (i.e. data from a manufacturing facility purchased in March 2017 would be included from 1 January 2018).
- Environmental data is externally reported after it has been internally collected for two full years through our metrics reporting system to better ensure data accuracy.
 - Environmental performance data for Nantong and Gemacom will be externally reported once we have two full years of operational data (i.e. Nantong in our Annual Report 2018 and Gemacom in Annual Report 2019)

Site Closings and Divestitures

Unless otherwise stated, the following principles are applied:

- Safety data is included up until the date of sale and/or closure, as far as practical
- Environmental data is included up until the last full month of ownership / control
- Employee data, as held in the Company's Human Resources database, is included as of 31 March of the year being reported

Reporting Details and Methodology

Safety Data

- Recordable Incident Rate (also referred to as the Total Incident Recordable Rate (TRIR))
 - Scope: Includes all full-, part-time and contracted temporary employees of the Company while working for the Company; and, contractors undertaking work at Company facilities globally. This includes work-related travels, but excludes travel to/from their place of work.
 - Method: The number of work-related injuries and illness cases as defined by U.S. Occupational, Health and Safety Administration (OSHA) recordkeeping requirements multiplied by 200,000 and divided by the total hours worked in the calendar year.
 - Source: Safety data are recorded by incident and reported at the facility, organization and business levels. In 2018, the company began to implement Gensuite as the system of record for EHS related data replacing the Environmental, Safety and Quality (ESQ) system; both systems are web-based and commercially available. EHS related incidents are communicated immediately upon entry, summarized weekly, reviewed with Senior Leaders monthly and internally audited.
- Lost Work Case Rate (LWCR)
 - Scope: Includes all full-, part-time and contracted temporary employees of the Company while working for the Company; and, contractors undertaking work at Company facilities globally. This includes work-related travels, but excludes travel to/from their place of work.
 - Method: The number of work-related injuries and illness cases as defined by U.S. OSHA recordkeeping requirements that resulted in days away from work multiplied by 200,000 and divided by the total hours worked in the calendar year.
 - Source: Safety data are recorded by incident and reported at the facility, organization and business levels in the ESQ system in 2017 and transitioned to Gensuite in 2018. EHS related incidents are communicated immediately upon entry, summarized weekly, reviewed with Senior Leaders monthly and internally audited.

Environmental Data

- Energy Use

- Definition: Energy use at qualifying (per the Reporting Boundaries section above) Tate & Lyle-owned and joint-venture manufacturing facilities globally.
 - Scope: Energy consumed within a calendar year at qualifying Tate & Lyle-owned and joint venture manufacturing facilities globally; including the energy consumed by on-site Combined Heat and Power (CHP) plants, but excluding any electricity generated by those on-site CHP plants sold externally to third parties; and, including on-site transport (e.g. fork lift trucks). Includes energy from biomass fuel sources, except for biogas / biofuel generated on-site (for example, through anaerobic wastewater treatment).
 - Units: Giga Joules (GJ)
 - Method: Electricity and fuel usage is based on units invoiced and is converted to GJ using the International Standard Organization (ISO) unit conversion factors.
 - Source: Usage is primarily based on third party invoices or in their absence from calibrated meter readings. Data was recorded in Gensuite in 2018. Energy usage is reviewed regularly and audited both internally and externally on an annual basis.
- Primary Carbon Footprint
 - Definition: Carbon dioxide equivalent (CO₂e) emissions arising from primary energy use and purchased electricity and steam at qualifying (per the Reporting Boundaries section above) Tate & Lyle-owned and joint-venture manufacturing facilities globally, in line with the GHG Protocol Corporate Accounting and Reporting Standard – Revised Edition (WRI & WBSD, 2004).
 - Scope: Scope 1 and Scope 2 CO₂e emissions from energy use at qualifying Tate & Lyle-owned and joint-venture manufacturing facilities globally within the calendar year. Scope 3 emissions from the transportation of products to customers, and emissions from administration and other non-manufacturing facilities, are excluded from this metric. Fuel types included for Scope 1 Emissions carbon calculation include natural gas, gasoline / petrol, gas/diesel oil, residual fuel oil, liquefied petroleum gas (LPG) and coal.
 - Units: Tonnes CO₂e
 - Method: Calculated by multiplying the reported energy quantities in kWh by the conversion factors derived from the most recent currently available international sources as outlined below.
 - Source: CO₂e emissions are calculated using internationally recognized methodology of the GHG Protocol Corporate Accounting and Reporting Standard - Revised Edition (WRI / WBCSD, 2004). Applicable emissions factors are used, as appropriate, from the GHG Protocol, the International Energy Authority (IEA), the U.S. Environmental Protection Agency (EPA) 40CFR Part 98 Mandatory Greenhouse Gas Reporting requirements, and the US EPA's Emissions and Generation Integrated Database (eGRID). Data was recorded in the ESQ system in 2017 and transitioned to Gensuite in 2018. CO₂e emissions are reviewed regularly and audited both internally and externally on an annual basis.
 - Group Greenhouse gas (GHG) emissions
 - Definition: Group greenhouse gas (GHG) emissions arising from (a) the combustion of fuel, and (b) the operation of any facility, at qualifying (per the Reporting Boundaries section above) Tate & Lyle-owned and joint-venture manufacturing facilities globally.
 - Scope: A tonne of carbon dioxide equivalent (CO₂e) comprises one metric tonne of carbon dioxide or an amount of any other greenhouse gas (GHG) with an equivalent global warming potential, calculated consistently with international carbon reporting practice; where a GHG comprises any of the following: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆). Reported: a) From the combustion of fuel and operations of facilities (Scope 1); b) From electricity, heat, steam and cooling purchased (Scope 2); c) In total; d) At an intensity ratio of tonnes of carbon dioxide equivalent (tCO₂e) per tonne of production
 - Units: tCO₂e
 - Method: Calculated in line with Part 7 (Disclosures concerning greenhouse gas emissions) of The Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013, and the GHG Protocol Corporate Accounting and Reporting Standard - Revised Edition (WRI & WBSD, 2004); and with

reference to the Environmental Reporting Guidelines: including mandatory greenhouse gas emissions reporting guidance (DEFRA, June 2013 - as updated October 2013).

- Source: CO₂e emissions are calculated using internationally recognized methodology of the GHG Protocol Corporate Accounting and Reporting Standard – Revised Edition (WRI / WBCSD, 2004). Applicable emissions factors are used, as appropriate, from the GHG Protocol, the International Energy Authority (IEA), the U.S. Environmental Protection Agency (EPA) 40CFR Part 98 Mandatory Greenhouse Gas Reporting requirements, and the US EPA’s Emissions and Generation Integrated Database (eGRID). Data was recorded in the ESQ system in 2017 and transitioned to Gensuite in 2018. CO₂e emissions are reviewed regularly and audited both internally and externally on an annual basis.

- **Water Use**

- Definition: Water use at qualifying (per the Reporting Boundaries section above) Tate & Lyle-owned and joint-venture manufacturing facilities globally.
- Scope: Process water consumed on-site, within the calendar year. Where process and non-process water uses are metered separately it includes only the water consumed in the process; where process and non-process water uses are metered together, both are included in the data. It includes water both from off-site and on-site sources (e.g. wells or boreholes). Cooling tower make-up water is considered to be consumed in the process. Non-contact cooling water is included unless the non-contact cooling water is returned to its original source (e.g. taken from a river and returned to the same river).
- Units: Cubic meters (m³)
- Method: Water usage is entered based on the invoiced quantities in either cubic meters (m³) or gallons to ensure accuracy. The data is converted to m³ by the system.
- Source: Usage is primarily based on third party invoices or in their absence from calibrated meter readings for water supplied from off- or on-site sources. Data is recorded in the ESQ system in 2017 and transitioned to Gensuite in 2018. Water usage is reviewed regularly and audited both internally and externally on an annual basis.

- **Waste to Landfill**

- Definition: Waste going to landfill generated at qualifying (per the Reporting Boundaries section above) Tate & Lyle-owned and joint-venture manufacturing facilities globally.
- Scope: All waste leaving a facility during the calendar year, including hazardous waste and that sent directly to an off-site facility for landfill disposal, or for treatment (e.g. incineration) prior to landfill disposal. This metrics includes waste streams generated by process or process support operations at infrequent intervals (e.g. expired chemicals, spent process media, off-specification product returns, off-specification in-process materials, and cleaning materials). Waste excluded from this metric include construction and demolition waste where it is the contractor's responsibility, by contract, to manage that waste and material that is recycled or re-used offsite (e.g. wastewater treatment sludge used for composting or soil amendments) and boiler ash.
- Units: Tonnes
- Method: Waste to landfill data is entered based on the invoiced quantities to ensure accuracy. The data is converted to tonnes by the system.
- Source: Waste generation data is taken primarily from 3rd party invoices for waste transfer and disposal off-site; or in their absence, from internal waste shipment records with the weight taken from weighbridges where available. Data is recorded in the ESQ system in 2017 and transitioned to Gensuite in 2018. Waste generation is reviewed regularly and audited both internally and externally on an annual basis.

- **Environmental Data Notes:**

- Environmental data is normalized by tonnes of production.
- Metric tonnes of production comprises the total calendar year amount of:
 - a) At corn wet milling facilities: The volume of corn input into the production process. All corn is reported as the volume before cleaning. Due to the complexity of corn wet milling facility

manufacturing processes and product/co-product output, the grind volume is the standard measure of manufacturing volume used across our corn wet mills and joint ventures globally.

- b) All other facilities excluding Sweden (i.e. non-corn wet milling facilities): The volume of product exiting the manufacturing process and shipped to customers. Data is derived from site-level process control software and accounting systems.

Contact Details

Any queries or comments regarding these Reporting Criteria can be provided to Jan-jaap.vanderBij@tateandlyle.com.

Issue Date: March 2019

INDEPENDENT LIMITED ASSURANCE STATEMENT

To: The Stakeholders of Tate & Lyle Plc



Introduction and objectives of work

Bureau Veritas UK Ltd has been engaged by Tate & Lyle Plc (Tate & Lyle) to provide limited assurance over selected environmental performance indicators for inclusion in its 2019 Annual Report ('the Report'). This Assurance Statement applies to the related information included within the scope of work described below.

Scope of Work

The scope of our work was limited to assurance over the following information (the 'Selected Information') in the Report:

- Energy use (GJ per tonne of production) for the period 1st January 2018 - 31st December 2018,
- Primary Carbon Footprint (tonnes of scope 1 & 2 CO₂-equivalent emissions per tonne of production) for the period 1st January 2018 - 31st December 2018,
- Water use (cubic metres per tonne of production) for the period 1st January 2018 - 31st December 2018, and
- Waste to landfill (tonnes per 1,000 tonnes of production) for the period 1st January 2018 - 31st December 2018.

The Selected Information covers Tate & Lyle's global manufacturing operations.

Reporting criteria

The Selected Information has been prepared in accordance with the 'CR Reporting Criteria', as set out at: <http://www.tateandlyle.com/about-us/corporate-responsibility>.

Limitations and Exclusions

Excluded from the scope of our work is any verification of information relating to:

- information related to activities outside the defined reporting period or scope;
- positional statements, including but not limited to expressions of opinion, belief, aim or future intention by Tate & Lyle;
- the appropriateness of the reporting criteria and its boundaries;
- other information included in the Report other than the scope defined above; and

This limited assurance engagement relies on a risk based selected sample of environmental data and the associated limitations that this entails. The reliability of the reported data is dependent on the accuracy of metering and other production measurement arrangements employed at site level, not addressed as part of this assurance. This independent statement should not be relied upon to detect all errors, omissions or misstatements that may exist.

Responsibilities

This preparation and presentation of the Selected Information in the Report are the sole responsibility of Tate & Lyle management. Bureau Veritas was not involved in the drafting of the Report or of the Reporting Criteria. Our responsibilities were to:

- provide limited assurance about whether the Selected Information has been prepared in accordance with the Reporting Criteria;
- form an independent conclusion based on the assurance procedures performed and evidence obtained; and
- report detailed findings and recommendations to the management of Tate & Lyle.

Our work has been undertaken in accordance with the terms of our engagement with Tate & Lyle and for those matters we have been engaged for. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than Tate & Lyle for our work, for this statement, or for the conclusions we have reached.

Assessment Standard

We performed our work in accordance with International Standard on Assurance Engagements (ISAE) 3000 Revised, Assurance Engagements Other than Audits or Reviews of Historical Financial Information (effective for assurance reports dated on or after December 15, 2015), issued by the International Auditing and Assurance Standards Board, and in accordance with the main requirements of ISO 14064:2006 Part 3 - Specification with Guidance for the Validation and Verification of Greenhouse Gas Assertions.

Summary of work performed

As part of our independent verification, our work included:

1. Reviewing the data collection and consolidation processes used to compile the Selected Information, including assessing assumptions made, and the data scope and reporting boundaries;
2. Remote review of a sample of the Selected Information against the corresponding source evidence provided by a sample of nine Tate & Lyle operating sites, selected on the basis of their contribution to Group totals and/or geographical spread.
3. Recalculating a selection of the Selected Information against the corresponding source documentation;
4. Reperforming aggregation calculations of the Selected Information; and
5. Assessing the disclosure and presentation of the Selected Information to ensure consistency with assured information.

Conclusion

On the basis of our methodology and the activities described above, nothing has come to our attention to indicate that the Selected Information is not fairly stated in all material respects and that it has not been prepared in accordance with the Reporting Criteria.

Statement of Independence, Integrity and Competence

Bureau Veritas is an independent professional services company that specialises in quality, environmental, health, safety and social accountability with over 185 years history. Its assurance team has extensive experience in conducting verification over environmental, social, ethical and health and safety information, systems and processes.

Bureau Veritas operates a certified¹ Quality Management System which complies with the requirements of ISO 9001:2008, and accordingly 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.

Bureau Veritas has implemented and applies a Code of Ethics, which meets the requirements of the International Federation of Inspections Agencies (IFIA)², across the business to ensure that its employees maintain integrity, objectivity, professional competence and due care, confidentiality, professional behaviour and high ethical standards in their day-to-day business activities. The assurance team conducting this work does not have any involvement in any other Bureau Veritas projects with Tate & Lyle and did not raise any conflict of interest to best of our knowledge.



Bureau Veritas UK Ltd
London, 28 May 2019

¹ Certificate of Registration FS 34143 issued by BSI Assurance UK Limited

² International Federation of Inspection Agencies – Compliance Code – Third Edition