Global Environmental Calculation Standard

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1 PURPOSE

This document details global standards on the calculation of environmental key performance indicators (KPIs). It aims to standardize calculation methods across locations, enabling the aggregation and comparison of data on a global level. In addition to this, it provides a framework for quality assurance. This quality of data is required to effectively manage environmental performance and navigate towards our targets at the site level as well as at the global level.

2 SCOPE

The scope includes material environmental indicators (KPIs) which are reported internally and externally on a global level. These KPIs are providing information on important topics identified by Tronox as well as by our stakeholders in our materiality assessment.

This standard applies to all locations over which Tronox has operational control, aligning with the Greenhouse Gas (GHG) Protocol's Operational Control Approach¹ (specific to the calculation of indicators associated with GHG emissions). This covers all manufacturing sites, mines, landfills in addition to offices and facilities within the boundaries of these facilities worldwide. Exclusions are the admin, R&D and sales offices located outside of our the sites mentioned above, outbound distribution warehouse in Belgium. The contribution of these facilities for the overall environmental performance is negligible and offices are located within leased facilities.

3 DEFINITIONS

The table below describes the definitions of indicator categories which are used in our environmental calculations. An asterisk (*) behind a category name indicates additional information is available on this category in section 4.2 "Clarifications".

Indicator	Category	Definition	
Energy consumption	Non-renewable fuel	Fuel consumed from resources that cannot be readily replaced by natural means. This consumption includes fuel purchased as well as fuel generated by Tronox's activities. It also includes coal and petroleum cokes primarily used as a reductant in chemical processing (slag smelter, synthetic rutile kiln, chlorinator). Generally, non-renewable fuels are extracted from	

¹ A Corporate Accounting and Reporting Standard, Revised Edition - The Greenhouse Gas Protocol, 2015.

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		natural gas and crude oil sources, including (but not limited to): natural gas, coal, petroleum cokes, petrol, diesel, liquefied petroleum gas (LPG), butane, propane, toluene, and paraffin.
	Renewable fuel	Fuel consumed from resources that can be replenished by natural means within a lifetime. This is limited to biofuels and biomass.
	Self-generated renewable electricity, heating, cooling, and steamConsumption of energy generated by renewable power sources, includin solar, wind, geothermal, and hydro. Note that biofuel and biomass product in the "renewable fuel" category.	
	Electricity, heating, cooling, and steam sold	Energy sold to an external party which is not owned or controlled by Tronox. This is not limited to self-generated energy only (for example, it can also include the sale of purchased electricity).
	Electricity, heating, cooling, and steam purchased for consumption	Consumption of energy that was produced outside Tronox's operational boundary as intermediate energy (for example electricity), but was consumed inside this boundary.
GHG Emissions Scope 1	Generation of electricity, heating, cooling, or steam	Emissions related to the combustion of fuel, including (but not limited to): natural gas, diesel, toluene, and paraffin) for the generation of electricity, heating, cooling, or steam. This also includes the combustion of fuel for co-generation of power and heat, the combustion of diesel in industrial power units, the combustion of toluene in oxidizers, and flaring.
	Physical or chemical processing	Emissions from processes in which a solid carbon source is used as a reductant. Examples are the use of petroleum cokes in chlorinators and the use of coal in kilns and smelters. In addition, this category includes the processing of limestone and zircon.
	Transportation of materials, products, waste, employees, and passengers	Emissions from vehicles used for internal transport on land, water, or through the air. Vehicles include (but are not limited to): fork-lifts, cars, trucks, buses,. Fuels responsible for these emissions generally are diesel, petrol, liquefied petroleum gas (LPG), and propane. Note that only emissions from vehicles owned or controlled by Tronox are included in this category.
	Fugitive emissions	Emissions that result from intentional or unintentional releases, such as equipment leaks from joints, seals, packing, and gaskets; methane emissions from mines and venting; hydrofluorocarbon (HFC) emissions from refrigeration and air conditioning equipment; and methane leakages from gas transport.
GHG Emissions Scope 2	Not applicable	Emissions from operations that are not owned or controlled by Tronox. This includes emissions that result from the generation of purchased or acquired electricity, heating, cooling, and steam consumed by Tronox.
Biogenic Emissions	Not applicable	Emissions that relate to CO_2 emissions from combustion or biodegradation of biofuel and biomass (renewable fuel) only, not to emissions of any other GHGs (such as CH_4 and N_2O), or to any GHG emissions that occur in the life cycle of renewable fuel other than from combustion or biodegradation (such as GHG emissions from processing or transporting biomass).

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Production		The total weight of all produced products that are either classified as product or by-product in
Quantity accorda		accordance with local regulatory requirements. Materials classified as waste as per local
		regulations; and sold for recycling; are excluded.

4 STANDARD

4.1 Environmental Calculations

The table below states the KPIs, descriptions, output units and calculations. The input to a calculation can be a category (as stated in 3. "DEFINITIONS") and/or a KPI (as stated in the table below).

KPI	Description	Output unit	Calculation method	
Direct Energy Consumption	Absolute consumption of direct energy	Gigajoules (GJ)	Non-renewable fuel + Renewable fuel + Self-generated renewable electricity, heating, cooling, and steam - Electricity, heating, cooling, and steam sold	
Indirect Energy Consumption	Absolute consumption of indirect energy	Gigajoules (GJ)	No calculation required, KPI is equal to "Electricity, heating, cooling, and steam purchased for consumption" as described in 3. "DEFINITIONS".	
Energy Intensity	Energy consumption per metric ton of produced products	GJ metric ton	Energy Consumption Production Quantity Energy Intensity is calculated for direct, indirect, and total energy consumption (direct & indirect energy consumption combined).	
GHG Emissions Scope 1	Absolute Scope 1 GHG emissions	<i>Metric tons of CO2- equivalents</i>	+	
GHG Emissions Scope 2	Absolute Scope 2 GHG emissions	<i>Metric tons of CO2- equivalents</i>	tronox uses the Market-based method and recognizes contractual instruments such as energy attribute certificates (GOs, RECs); direct Power Purchase Agreements (PPAs); supplier specific emission rates, etc. Hierarchy of emission factors used starts with source and supplier-specific followed by grid average.	

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			The Scope 2 quality criteria should meet the GHG Protocol Scope 2 Guidance. Data to be presented in t CO2e/energy unit (MWh or GJ)
Biogenic Emissions	Absolute biogenic GHG emissions	<i>Metric tons of CO2- equivalents</i>	No calculation required, KPI is equal to "Biogenic Emissions" as described in 3. "DEFINITIONS".
GHG Emissions Intensity	GHG emissions per metric ton of produced products	tCO2-eq metric ton	GHG Emissions Production Quantity GHG Emissions Intensity is calculated for Scope 1, Scope 2 and Total GHG emissions (Scope 1 & 2 GHG emissions combined).

4.2 Clarifications

4.2.1 Reporting Principles and Hierarchy of Information Sources

Data quality is fundamental for achieving high-quality environmental reporting. We therefore align with the reporting principles of the GRI Standards² (accuracy, balance, clarity, comparability, completeness, sustainability context, timeliness, and verifiability) to assure proper data quality as an input for effective environmental performance management.

Taking into account the reporting principles, we can distinguish between high-quality sources of information and sources with lower quality of information. The following hierarchy is used to determine the appropriateness of data sources:

- 1) Financial data (in compliance with SOX)
- 2) Production data (measurement-based)
- 3) Calculated data (result based on a calculation, taking into account one or both of the above sources)
- 4) Estimated data (result based on a calculation, taking into account taking into account one or more of the above sources, including one or more assumptions)

If multiple sources of data are available, the one highest in the hierarchy (1 is highest, 4 is lowest) will be included in our environmental data collection process.

² GRI Standards – Global Reporting Initiative, 2022.

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4.2.2 GHG Substances and Global Warming Potentials

In line with the Kyoto Protocol, this standard regards the following substances as GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

GHGs other than CO_2 are converted to CO_2 -equivalents in order to compare these emissions to CO_2 emissions. The Global Warming Potentials (GWPs) taken into account to convert GHG emissions other than CO_2 to CO_2 -equivalents are taken from the latest available IPCC Assessment Report³.

4.2.3 <u>Hierarchy of Conversion and Emission Factors</u>

The following hierarchy of conversion factors (for energy consumption) and emission factors (for GHG emissions) is used to calculate energy and GHG emission results as accurate as possible:

- 1) Factors provided by the energy supplier.
- 2) Factors provided by national authorities (regional factors are of higher value than national factors).
- 3) Factors provided by international organizations.

If multiple sources of conversion/emission factors are available, the one highest in the hierarchy (1 is highest, 3 is lowest) will be included in our environmental calculations.

4.2.4 Biogenic emissions

Biogenic emissions are reported separately from Scope 1 and Scope 2 GHG emissions. This is in line with the approach proposed by the GHG Protocol⁴.

4.2.5 GHG Emission Corrections for Cokes and Coal

In determining GHG emissions resulting from the reduction of petroleum cokes in chlorinators and coal in kilns and smelters, fixed carbon content of the raw material (based on samples as provided by the supplier) and blow-over of the reduction process (based on process measurements) are taken into account. The stochiometric equation of 1 metric ton of reductant (100% fixed carbon

⁴ A Corporate Accounting and Reporting Standard, Revised Edition - The Greenhouse Gas Protocol, 2015.

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³ Assessment Report 6 – Intergovernmental Panel on Climate Change, 2022.



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content) resulting in 3.67 metric tons of CO_2 is corrected accordingly, taking into account both factors.

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4.2.6 <u>Combined Heat and Power (CHP) Plants owned by third party</u>

In case Tronox receives electricity and/or steam from a CHP plant, it can be the case this energy was generated partly by fossil sources and partly by biogenic sources. The percentage of total GHG emissions allocated to Scope 2 emissions equals the percentage of the fossil part of the energy source and the percentage allocated to biogenic emissions equals the biogenic part of the energy source.

4.2.7 <u>Electricity, heating, cooling, and steam sold</u>

In determining the quantity of energy sold, primary energy consumption is taken into account. In other words, the energy that was used to produce what was sold is the basis for our calculations (for example, if Tronox sells steam which was produced by natural gas, the natural gas consumption should be counted). In this way the sold energy is corrected by a production loss percentage. In the case of sold renewable electricity, no correction is applied.

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5 CONSEQUENCES

A breach of this standard may result in disciplinary action up to and including termination of employment, in accordance with local policies.

6 STANDARD REVIEW AND EXCEPTIONS

This standard will be reviewed in accordance with business needs. Only the VP of SHEQ (Executive Sponsor) or his/her delegate is authorized to approve exceptions to this standard. Executive Sponsors are listed in the Policy Governance Policy 10.01.

7 RELATED INFORMATION

The policies related to Ethics, Compliance and Whistleblower Hotline can be found in the "Global Policy and Guidelines Library" section of the Intranet (https://intro.tronox.com/). Employees are responsible for reading the Company's policies.

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