



ICL Group's Scope 1 and Scope 2

# Corporate Carbon Footprint Approach and Methods 2023

January, 2024

# ICL Group's Scope 1 and Scope 2 Corporate Carbon Footprint Approach and Methods 2023

<b>Introduction</b>	<b>3</b>
<b>A. Company Description</b>	<b>4</b>
Overview	4
Structure, Markets and Industries	4
<b>B. Organizational Boundaries</b>	<b>5</b>
Table 1: List of properties	<b>6</b>
<b>C. Operational Boundarie</b>	<b>10</b>
Scope 1 - direct emissions	10
Scope 2 - indirect emissions from purchased energy	10
<b>D. Reporting Period</b>	<b>10</b>
<b>E. Organization's GHG policy and responsibility</b>	<b>10</b>
<b>F. Measuring &amp; reporting approach</b>	<b>11</b>
<b>G. Calculation Methods by Category</b>	<b>12</b>
General Formula Used to Calculate Emissions	12
Table 2: Scope 1 & 2 methods, sources of activity data and emission factors	13
<b>Scope 1</b>	<b>14</b>
1. Scope 1 Stationary and Mobile Combustion	14
2. Scope 1 Fugitive Emissions	15
3. Scope 1 - Explosives	15
4. Scope 1 - Non-Energy Related Process Emission	16
5. Scope 1 - Emissions from Onsite Wastewater Treatment	16
<b>Scope 2</b>	<b>17</b>
Market-based Method	17
Location-based Method	18
<b>H. Data Availability, Exclusions and Uncertainties</b>	<b>19</b>
<b>I. Key Resources</b>	<b>20</b>
Standards and Guidance	20
Primary Sources for Emission Factors	20

## Introduction

---

ICL Group has been systematically monitoring, reporting and verifying (MRV) its Scope 1 & 2 Carbon Footprint reports since 2018. The company has recently also published its first comprehensive, 3rd-party verified Scope 3 Carbon Footprint for 2022 covering both upstream and downstream indirect emissions.

The MRV program and this supporting document have been prepared in accordance with the Greenhouse Gas Protocol (GHG) and ISO 14064-1:2018. The document is intended to provide a framework and reference for the data management approach utilized by ICL Group, developed to ensure reasonable accuracy and integrity of Scope 1 & 2 data collection, calculation, assurance and reporting.

ICL Group intends to release the information listed above to its interested stakeholders as part of its public disclosures and through direct communications, on a case by case basis with interested parties, such as: customers, regulators, analysts, ESG rating agencies and investors.



## A | Company Description

### Overview

ICL Group Ltd. is a leading global specialty minerals company, which creates impactful solutions for humanity's sustainability challenges in the food, agriculture, and industrial markets. ICL leverages its unique bromine, potash, and phosphate resources, its global professional workforce, and its sustainability focused R&D and technological innovation capabilities, to drive the ICL's growth across its end markets.

ICL Group is publicly-traded in the USA and Israel (NYSE: ICL, TASE: ICL). The company has 13,350 employees (as of year end 2023) with 38 production sites in 13 countries and group headquarters in Tel Aviv, Israel, Amsterdam, Netherlands, Shanghai, China and St. Louis, Missouri in the USA. ICL Group produces approximately a third of the world's bromine, and is the world's sixth-largest potash producer.

### Structure, Markets and Industries

ICL Group's integrated business model is mainly structured around three mineral value chains—bromine, potash and phosphate. These minerals are the main raw materials for most of the value-added downstream products in the company's portfolio. Its operations are organized under four reporting segments: Industrial Products (bromine), Potash, Phosphate Solutions and Growing Solutions. The segments represent a specific value chain in which ICL Group holds a leading position – either in terms of market share or cost competitiveness.

The Industrial Products segment primarily operates the bromine value chain, which includes elemental bromine and bromine compounds for various industrial applications. This segment also operates several complementary businesses, mainly phosphorous-based flame retardants and additional Dead Sea minerals for the pharmaceutical, food, oil and gas, and de-icing industries. The Potash segment operates the potash value chain and includes primarily potash fertilizers and the magnesium business, a byproduct of potash production, which produces and sells pure magnesium and magnesium alloys, as well as chlorine and sylvinitite.

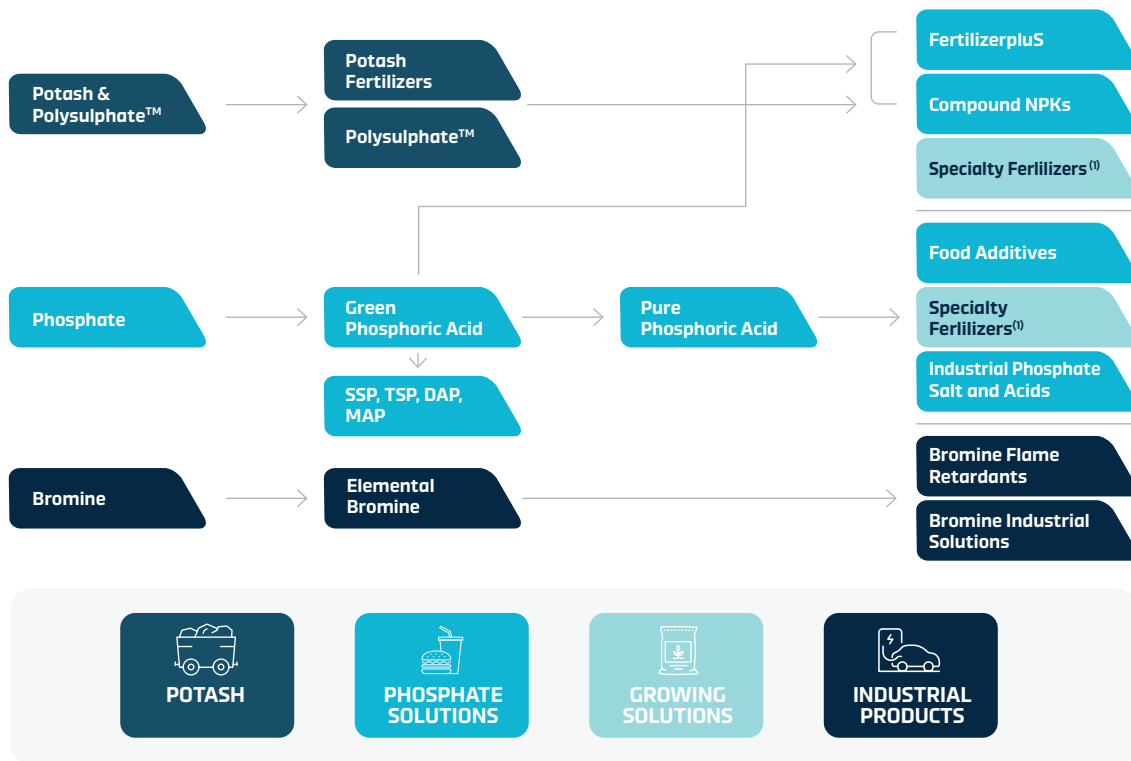
The Phosphate Solutions segment is based on the phosphate value chain. It includes specialty phosphate salts and acids for various food and industrial applications, as well as commodity phosphates, which are used mainly as fertilizers.

The fourth segment, Growing Solutions, includes the specialty fertilizers business. ICL Group is focused on expanding and strengthening its Growing Solutions offerings, by maximizing its existing capabilities and agronomic expertise. The stated strategy calls for expansion and global diversification through opportunistic M&A and, accordingly in 2022, ICL Group integrated the 2021 acquisitions of Fertiláqua, a Brazilian specialty crop nutrition company, and the South American Plant Nutrition business from Compass Minerals (America do Sul). Both acquisitions have helped position ICL as the leading specialty plant nutrition company in Brazil and balance segment seasonality.

# A | Company Description

## Structure, Markets and Industries

### Value Chain



# B | Organizational Boundaries


















ICL Group has chosen to use the Operational Control approach for the purposes of consolidating and reporting GHG emissions.

Using this approach, data necessary for calculating the Scope 1 & 2 emissions was collected from the operations listed below, including all of ICL Group's manufacturing facilities and major logistical operations.



## B | Organizational Boundaries

**Table 1: List of properties**

 Site Name	 Site location	 Country	 Business Segment	 Primary Activity
ICL Brazil São José dos Campos- SJDC	Sao Jose dos Campos	 Brazil	<b>Phosphates</b>	Manufacturing plant
ICL Brazil Cajati	Cajati	 Brazil	<b>Phosphates</b>	Manufacturing plant
ICL Fertilaqua Cruz alta	Cruz alta	 Brazil	<b>Growing Solutions</b>	Manufacturing plant & research facility
ICL Fertilaqua Conchal	Conchal	 Brazil	<b>Growing Solutions</b>	Research facility
ICL Fertilaqua Cidade Ocidental	Cidade	 Brazil	<b>Growing Solutions</b>	Manufacturing plant
ICL America do Sul Iracemápolis	Iracemapolis	 Brazil	<b>Growing Solutions</b>	Research facility
ICL America do Sul Mauá	Mauá	 Brazil	<b>Growing Solutions</b>	Manufacturing plant
ICL America do Sul Uberlândia	Uberlândia	 Brazil	<b>Growing Solutions</b>	Manufacturing plant
ICL America do Sul Suzano 1	Suzano	 Brazil	<b>Growing Solutions</b>	Manufacturing plant
ICL America do Sul Suzano 2	Suzano	 Brazil	<b>Growing Solutions</b>	Manufacturing plant
ICL America do Sul Jacarei 1	Jacarei	 Brazil	<b>Growing Solutions</b>	Manufacturing plant
ICL America do Sul Jacarei 2	Jacarei	 Brazil	<b>Growing Solutions</b>	Manufacturing plant
ICL U.S. Carondelet	Carondelet, Missouri	 United States	<b>Phosphates</b>	Manufacturing plant
ICL U.S. Charleston	North Charleston, South Carolina	 United States	<b>Growing Solutions</b>	Manufacturing plant
ICL U.S. Gallipolis Ferry	Gallipolis Ferry, West Virginia	 United States	<b>Industrial Products</b>	Manufacturing plant

## B | Organizational Boundaries

**Table 1: List of properties**

 Site Name	 Site location	 Country	 Business Segment	 Primary Activity
ICL U.S. Lawrence	Lawrence, Kansas	 United States	<b>Phosphates</b>	Manufacturing plant
ICL U.S. Summerville	Summerville, South Carolina	 United States	<b>Growing Solutions</b>	Manufacturing plant. Currently inactive with minimal activity required to support necessary services.
ICL U.S. Indiana (Hammond)	Hammond, Indiana	 United States	<b>Phosphates</b>	Technical Center
ICL China Shandong (SBCL)	Shandong	 China	<b>Industrial Products</b>	Manufacturing plant
ICL China Shanghai Tari (STI)	Shanghai	 China	<b>Phosphates</b>	Manufacturing plant. Currently inactive with minimal activity required to support necessary services.
ICL China TCKG, YBKGT	Yunnan	 China	<b>Phosphates</b>	Manufacturing plant
ICL China YPH 3C & Haikou	Kunming, Yunnan	 China	<b>Phosphates</b>	Manufacturing plant
ICL Australia Fibrisol	Heatherton	 Australia	<b>Phosphates</b>	Manufacturing plant
ICL Austria Hartberg (ProLactal)	Hartberg	 Austria	<b>Phosphates</b>	Manufacturing plant
ICL Belgium (NU3)	Belgium	 Belgium	<b>Growing Solutions</b>	Manufacturing plant
ICL France Caffiers (Scora)	Calais	 France	<b>Industrial Products</b>	Manufacturing plant
ICL Germany Amfert	Ludwigshafen	 Germany	<b>Growing Solutions</b>	Manufacturing plant
ICL Germany Ladenburg (BK Giulini GmbH)	Ladenburg	 Germany	<b>Phosphates</b>	Manufacturing plant
ICL Iberia Fuentes (Patojos)	Cartagena	 Spain	<b>Growing Solutions</b>	Manufacturing plant

## B | Organizational Boundaries

**Table 1: List of properties**

 Site Name	 Site location	 Country	 Business Segment	 Primary Activity
ICL Iberia Fuentes (Totana)	Totana	 Spain	<b>Growing Solutions</b>	Manufacturing plant
ICL Iberia Fuentes (Escombreras)	Cartagena	 Spain	<b>Growing Solutions</b>	Warehouse and loading facility
ICL Iberia Sallent	Sallent, Catalonia	 Spain	<b>Potash</b>	Manufacturing plant
ICL Iberia Súrria	Catalonia, Súrria	 Spain	<b>Potash</b>	Manufacturing plant
ICL Netherlands Amfert	Amsterdam	 Netherlands	<b>Growing Solutions</b>	Manufacturing plant
ICL Netherlands Heerlen	Heerlen	 Netherlands	<b>Growing Solutions</b>	Manufacturing plant
ICL Netherlands Terneuzen	Terneuzen	 Netherlands	<b>Industrial Products</b>	Manufacturing plant
ICL Turkey Rotem	Bandırma	 Turkey	<b>Growing Solutions</b>	Manufacturing plant
ICL U.K. Amega	Daventry	 United Kingdom	<b>Growing Solutions</b>	Manufacturing plant
ICL U.K. Boulby	Cleveland	 United Kingdom	<b>Growing Solutions</b>	Manufacturing plant
ICL U.K. London (Fibrisol)	London	 United Kingdom	<b>Industrial Products</b>	Manufacturing plant
ICL U.K. Nutberry	Nutberry	 United Kingdom	<b>Growing Solutions</b>	Manufacturing plant
ICL Germany Bitterfeld	Bitterfeld	 Germany	<b>Industrial Products</b>	Manufacturing plant
Dead Sea Bromine (DSB)	Sodom	 Israel	<b>Industrial Products</b>	Manufacturing plant
Dead Sea Magnesium (DSM)	Sodom	 Israel	<b>Potash</b>	Manufacturing plant



## B | Organizational Boundaries

**Table 1: List of properties**

 Site Name	 Site location	 Country	 Business Segment	 Primary Activity
Dead Sea Works (DSW)	Sodom	 Israel	<b>Potash</b>	Manufacturing plant
ICL DSS - Chem. Division	Sodom	 Israel	<b>Industrial Products</b>	Manufacturing plant
ICL Haifa (F&C)	Kiryat Ata	 Israel	<b>Growing Solutions</b>	Manufacturing plant
ICL Haifa IMI	Kiryat Ata	 Israel	<b>Phosphates</b>	Laboratories
ICL Neot-Hovav	Neot Hovav	 Israel	<b>Industrial Products</b>	Manufacturing plant
ICL Periclase	Mishor Rotem	 Israel	<b>Industrial Products</b>	Manufacturing plant
ICL Rotem Oron	Oron	 Israel	<b>Phosphates</b>	Manufacturing plant
ICL Rotem Site	Mishor Rotem	 Israel	<b>Phosphates</b>	Manufacturing plant
ICL Rotem Zin	Zin	 Israel	<b>Phosphates</b>	Manufacturing plant. <small>Currently inactive with minimal activity required to support necessary services.</small>
ICL Sdom CHP	Sdom, Israel	 Israel	<b>Potash</b>	Power plant
ICL T&L Sherut (Sherut-Integrated Transportation)	Ashdod	 Israel	<b>Growing Solutions</b>	Transport & Logistics
ICL T&L Tovala (Mifalei Tovala)	Ashdod	 Israel	<b>Growing Solutions</b>	Transport & Logistics

ICL Group has made the efforts to collect and aggregate data from all the operations listed above for all Scope 1 & 2 emission sources. Any exceptions are detailed below.

## C | Operational Boundaries

ICL Group 2023 sources of scope 1 and scope 2 emissions:

### Scope 1 - direct emissions

- ✓ **Stationary combustion** - emissions derived from fuel consumption by stationary sources
- ✓ **Mobile combustion** - emissions derived from fuels consumption for transportation uses
- ✓ **Fugitive emissions** - leakage of greenhouse gases from refrigeration systems, electrical equipment and cover gas systems
- ✓ **Explosives** - emissions released by use of explosives in mining operations
- ✓ **Process emissions** - emissions released from non-energy related chemical processes
- ✓ **Onsite wastewater treatment** - emissions released during onsite treatment of wastewater

### Scope 2 - indirect emissions from purchased energy

- ✓ **Purchased electricity**
- ✓ **Purchased steam, heat and compressed air**
- ✓ **Onsite renewable energy generation**

## D | Reporting Period

Calendar year 2023.

## E | Organization's GHG policy and responsibility

Following internal discussions, the company's management elected to begin a climate-related initiative in early 2021.

The first phase of the initiative launched a GHG monitoring, reporting and verification program (MRV) for scopes 1 and 2 emissions, intended to provide internal insights regarding corporate, site and product-related GHG emissions. It also serves to enable disclosure of climate-related information to customers, regulators, analysts, ESG rating agencies and investors. In addition, a comprehensive decarbonization plan was launched using the corporate-wide verified emissions for 2018 emissions as its baseline.

## E | Organization's GHG policy and responsibility

As part of the initiative, key policies have been set in place, including for example:

- ✓ Introduction of annual reduction targets to all ICL Group segments and operational units that are consistent with the decarbonization plan.
- ✓ Introduction of the decarbonization targets to ICL Group's annual executive compensation program.
- ✓ Introduction of an internal shadow price for carbon on Capex investments.
- ✓ Procurement of renewable energy across all of ICL Group's geographies with preference to long-term power purchase agreements.
- ✓ Expansion of the site-by-site energy efficiency program to include GHG reductions that are consistent with ICL Group's decarbonization plan.
- ✓ Improve and expand ICL Group's disclosures on climate-related issues under CDP, TCFD and with various ranking agencies.
- ✓ Submission of a declaration to the SBTi organization, wherein the company will commit to establish a near-term, science-based target in accordance with the framework developed by the SBTi organization.

The current assurance process is a direct continuation and integral component of ICL Group's GHG policy. ICL Group strives to continue conducting annual 3rd-party assurance.

## F | Measuring & reporting approach

ICL Group has followed the GHG Protocol Guidelines on how to measure and report greenhouse gas emissions and in accordance with ISO 14064-1:2018. Emissions are reported in tonnes of CO<sub>2</sub> equivalents (CO<sub>2</sub>e).

To support the growing needs regarding ESG metrics, disclosures and analysis, and carbon accounting in particular, ICL group is in the midst of characterising and digitizing the broad range of activity data required for ESG monitoring, reporting and assurance. ICL utilizes a GHG data system powered by ECO-OS as a single-point-of-record for the various regulatory and voluntary tasks.

## G | Calculation Methods by Category

### General Formula Used to Calculate Emissions

ICL Group's GHG calculations follow the formula below unless otherwise indicated:

Activity data x emission factor x global warming potential (GWP) = CO<sub>2</sub> equivalent (CO<sub>2</sub>e) emissions

Where:



**Activity data** is a quantitative measure of a level of activity (e.g. mass of material purchased, kilometers travelled, etc.) that results in GHG emissions.



**Emission factor** is a factor that converts activity data into GHG emissions data (e.g. kg CO<sub>2</sub> emitted per liter of fuel consumed, kg CH<sub>4</sub> emitted per kilometer travelled, etc.).

Where necessary, activity data is converted into a standard unit prior to conversion. For example: when fuels are reported in units of mass or volume, they are first converted to units of energy (kWh) to facilitate the calculation. Most conversion factors are provided in CO<sub>2</sub> equivalent units by the various sources of emissions data, thus a simplified formula can be expressed as:

Activity data x emission factor = CO<sub>2</sub> equivalent (CO<sub>2</sub>e) emissions



**Global warming potential (GWP)** is a factor describing the radiative forcing impact (degree of harm to the atmosphere) of one unit of a given GHG, relative to one unit of CO<sub>2</sub> over a specific multi-year time horizon. Multiplying emissions of a given GHG by its GWP gives us the CO<sub>2</sub> equivalent emissions. Figures for GWPs are set out by the Intergovernmental Panel on Climate Change (IPCC) Assessment Reports (AR). The GWPs used in the calculation of CO<sub>2</sub>e are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) over a 100-year period so that the Conversion Factors are consistent with the latest national inventories, on which they're based. In November 2021, it was agreed by the international community at COP26 that greenhouse gas emissions shall be reported under the Paris Agreement transparency framework using 100-year AR5 GWPs (without climate-carbon feedback). Therefore, from 2023 onwards Conversion Factors will primarily be based on 100-year AR5 GWPs.



## G | Calculation Methods by Category

ICL Group used the methods and emission factors listed below for the purposes of calculating GHG emissions for each category.

**Table 2: Scope 1 & 2 methods, sources of activity data and emission factors**

	Sub-category	Primary Source for ICL Activity Data	Emission Factors (EFs)	Primary Sources for EFs
<b>Scope 1 -</b> Direct emissions	Stationary combustion	Enterprise systems, based on invoices	Secondary energy-based	UK DEFRA/BEIS
	Mobile Combustion	Enterprise systems, based on invoices	Secondary energy-based	UK DEFRA/BEIS
	Fugitive Emissions	Enterprise systems, based on invoices	Secondary mass-based	UK DEFRA/BEIS
	Explosives	Enterprise systems, based on invoices	Secondary mass-based	US EPA and scientific literature
	Process Emissions	Enterprise systems, based on production data	Secondary mass & stoichiometry-based	ICL process engineers
	Onsite Wastewater Treatment	Enterprise systems, based on operational data	Secondary mass-based	UK DEFRA/BEIS & ICL process engineers
<b>Scope 2 -</b> Indirect emissions from energy (market-based)	Purchased Electricity	Enterprise systems, based on invoices	Primary and secondary energy-based	Updates by suppliers, when available; mostly annual national or regional updates
	Purchased Steam, Heat & Compressed Air	Enterprise systems, based on invoices	Primary and secondary energy-based	UK DEFRA/BEIS & where available - supplier specific
	Onsite Renewable Energy	Enterprise systems, based on invoices	Secondary energy-based	UK DEFRA/BEIS
<b>Scope 2 -</b> Indirect emissions from energy (location-based)	Purchased Electricity	Enterprise systems, based on invoices	Secondary energy-based	Annual national or regional updates
	Purchased Steam, Heat & Compressed Air	Enterprise systems, based on invoices	Secondary energy-based	UK DEFRA/BEIS
	Onsite Renewable Energy	Enterprise systems, based on invoices	Secondary energy-based	Annual national or regional updates & UK DEFRA/BEIS

ICL Group has made the efforts to use the best available activity data and emission factors, as available at the time. All sources of data are recorded and cited specifically as part of the QA and validation process for all known activities at ICL Group.

# Scope 1

---

Below are details of the category-specific calculations were employed:

Scope 1 includes direct GHG emissions from sources that are owned or controlled by the company. For example, emissions from combustion in owned or controlled boilers, furnaces, or vehicles; and emissions from chemical production in owned or controlled process equipment.

01

## Scope 1 - Stationary and Mobile Combustion

These two categories include emissions of greenhouse gases resulting from the combustion of all solid, liquid and gaseous fuels utilized by the company facilities and mobile equipment, including fossil fuels, biofuels and other alternative fuels (such as waste-derived fuels).



### Activity data

Activity data includes purchase of fuels recorded from invoices or consumption of fuels recorded from operational systems, into the company's enterprise resources and reported on a monthly or annual basis to the GHG data system. Data is preferably recorded in original units (for example: cubic meters of natural gas, tonnes of diesel fuel or MMBtus of propane) and converted to a standard energy unit (kWh) by the GHG data system. The necessary conversions utilize calorific values and density data provided by sources such as UK DEFRA and USEPA.



### Method

Calculation follows the general formula. To estimate emissions, fuel consumption data are multiplied by best-fit secondary emission factors for each fuel and recorded in tonnes of CO2 equivalents by the GHG data system's reports.

## Scope 1

02

### Scope 1 - Fugitive Emissions

This category includes fugitive emissions of refrigerants, spark-suppression and cover gases that have known global warming potential (GWP) utilized by the company facilities and mobile equipment.



#### Activity data

Activity data includes emissions resulting from replenishment of the company's systems with the corresponding refrigerants and other gases recorded to the company's enterprise resources and reported on a monthly or annual basis to the GHG data system. Data is preferably recorded in original units (predominantly as mass) and converted to a standard mass unit (kilogram) by the GHG data system.



#### Method

Calculation follows the general formula. To estimate emissions, refrigerants data are multiplied by best-fit secondary emission factors for each fuel and recorded in tonnes of CO<sub>2</sub> equivalents by the GHG data system's reports.

03

### Scope 1 - Explosives

This category includes emissions from the explosive combustion at the company's mining operations.



#### Activity data

Activity data includes purchase of explosives recorded from invoices to the company's enterprise resources and reported on a monthly or annual basis to the GHG data system. Data is preferably recorded in original units (predominantly as mass) and converted to a standard mass unit (kilograms) by the GHG data system.



#### Method

Calculation follows the general formula. To estimate emissions, explosives data are multiplied by best-fit secondary emission factors for each fuel and recorded in tonnes of CO<sub>2</sub> equivalents by the GHG data system's reports.

## Scope 1

04

### Scope 1 - Non-Energy Related Process Emissions

This category includes emissions from specific chemical or physical reactions such as release of CO<sub>2</sub> following acidification of phosphate rock.



#### Activity data

Activity data includes the mass of key raw material components in the chemical or physical reaction that is stoichiometrically related to the greenhouse gas release. For certain processes, such as the release of N<sub>2</sub>O during manufacturing of nitrogen-based chemicals, emissions are monitored directly at the point of release, if and when such monitoring is required by local regulatory authorities. Emissions are reported on a monthly or annual basis to the GHG data system. Data is preferably recorded in original units (predominantly as mass) and converted to a standard mass unit (kilograms) by the GHG data system.



#### Method

For activities reporting the mass of key raw material components the calculation multiplies the mass of the raw material by the stoichiometric, mass-based ratio to the greenhouse gas being released and converted to tonnes of CO<sub>2</sub> equivalents by the GHG data system by multiplying the result by the global warming potential of the specific greenhouse gas. For activities reporting the directly monitored mass of emissions the mass is converted to tonnes of CO<sub>2</sub> equivalents by the GHG data system by multiplying the mass by the global warming potential of the specific greenhouse gas.

05

### Scope 1 - Emissions from Onsite Wastewater Treatment

This category includes emissions of greenhouse gases during wastewater treatment processes occurring at the company's facilities or under the company's operational control. The primary source of emissions from wastewater treatment is the result of biological breakdown of organic waste materials releasing carbon dioxide, methane and nitrous oxides.



## Scope 1

---



### **Activity data**

Activity data is the volume and key attributes of the wastewater entering the wastewater treatment facility, predominantly provided by the company's operational records and reported on a monthly or annual basis to the GHG data system. Data is preferably recorded in original units (predominantly as volume) and converted to a standard volume unit (cubic meters) by the GHG data system.



### **Method**

Calculation follows the general formula. Volume of effluent entering the wastewater facility was multiplied by corresponding secondary emission factors.

## Scope 2

---

Scope 2 includes GHG emissions from the generation of purchased electricity consumed by the company. Scope 2 emissions are provided in a dual reporting format, calculated using the market-based and location-based methods, following emission factor hierarchies, as instructed by the GHG Protocol guidance for Scope 2.



### **Market-based Method**

The market-based method shows emissions for which the company is responsible through its purchasing decisions based on contractual emissions, wherever possible. Such contracts may be through power purchase agreements with specific electricity generators or suppliers, or in the case of renewable energy through Accredited Emissions Certificates (EACs), such as guarantees of origin in Europe (GOs), renewable energy credits (RECs) in the USA and international renewable energy credits (iRECs) in a range of countries worldwide.

## Scope 2



### Location-based Method

The location-based method calculates emissions based on electricity consumption at the location where the energy is used, taking into account the fuel mix used to generate electricity within the locations and time periods in which the company operates. The company uses local or country-level grid average emission factors to report location-based emissions for all offices included in the inventory scope.



### Activity Data

The market-based method and location-based method use the same activity data: the amount of electricity consumption compiled on the company's enterprise systems from invoices provided by each facility's energy service provider or local grid operator. Energy is recorded in units of kWh or MWh. Activity data for purchases of steam or compressed air follow a similar procedure. Purchase and retirement (also known as "redemption" or "cancellation") of EACs is recorded in MWh units from contractual purchase agreements and certificates of retirement, respectively.



### Method

Calculations follow the general formula. Under the market-based method, whenever available, activity data for each facility (kWh) are multiplied by supplier-specific emission factors. When such data is not available, but electricity is supplied contractually by a specific technology (e.g. natural gas CHP power plant or nuclear power plant), activity data is multiplied by secondary emission factors for the specific technology provided by IPCC or local regulatory authorities. When no specific contractual evidence is available, activity data is multiplied by the local grid emission factor representing the residual mix reported by local or national grid operators or national regulatory body (such as the USEPA) or by an international body regulating or compiling such information (such as the EU AIB). When there is no data available regarding the residual mix for a specific facility's location, an emission factor representing the average mix is used instead. Under the location-based method, activity data for each facility (kWh) are multiplied by the local grid emission factor as reported by the local or national grid operators or regulatory body or by an international body compiling such information.

## H | Data Availability, Exclusions and Uncertainties

**Limitation of the use of secondary emission factors.** Using secondary (e.g. "industry-average" or "national-average") emission factors is less granular than using a supplier-specific approach, whereby suppliers provide high-quality product carbon footprints or detailed Scope 1 and 2 data that can be used to calculate supplier-specific emissions for every form of energy purchased. ICL Group strives to continuously move from the current hybrid approach towards a supplier-specific approach as more suppliers ready themselves for reporting of more granular emission factors.

**Acquisition of new assets.** New industrial operations in Brazil were acquired and owned by ICL Group over the course of 2021 fiscal year. These industrial operations include: ICL Fertilaqua, ICL America do Sul. Their emissions were first recorded in the 2022 scope 1 & 2 emissions report and are included in this current report as well. However, these sites were not under ICL operational control during the baseline year being used by ICL to set its decarbonization targets. Thus, ICL is also reporting its total emissions on a same-site basis in various official communications, clearly stating the distinction and always alongside the total amount of emissions for the company.

**Site-specific limitations.** At the site ICL U.S. Summerville, USA 2023 data was not available, due to inactivity. Thus, an approximation based on 2022 data was used.

# I | Key Resources

## Standards and Guidance

- [1] WRI & WBCSD. 2004. The GHG Protocol: A Corporate Accounting and Reporting Standard. Revised 2105 Edition.  
<https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>
- [2] WRI & WBCSD. 2015. GHG Protocol Scope 2 Guidance. Supplement to the GHG Protocol Corporate Accounting and Reporting Standard.  
<https://ghgprotocol.org/sites/default/files/2023-03/Scope%202%20Guidance.pdf>
- [3] ISO. 2018. ISO 14064-1:2018(en) Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.  
<https://www.iso.org/obp/ui/en/#iso:std:iso:14064:-1:ed-2:v1:en>

## Primary Sources for Emission Factors

- [4] UK Department for Energy Security and Net Zero (formerly: DEFRA) and Department for Business, Energy & Industrial Strategy (formerly: BEIS). Government conversion factors for company reporting of greenhouse gas emissions.  
<https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>
- [5] US Environmental Protection Agency (EPA). Center for Corporate Climate Leadership GHG Emission Factors Hub.  
<https://www.epa.gov/climateleadership/ghg-emission-factors-hub>
- [6] US Environmental Protection Agency (EPA). Emissions & Generation Resource Integrated Database (eGRID).  
<https://www.epa.gov/egrid>
- [7] EU AIB. European Residual Mix Factors.  
<https://www.aib-net.org/facts/european-residual-mix>
- [8] Australian Government Dept of Climate Change, Energy, the Environment & Water. The National Greenhouse Accounts (NGA) Factors.  
<https://www.dcceew.gov.au/climate-change/publications/national-greenhouse-accounts-factors>
- [9] Israel Ministry of Environmental Protection. Methods for Calculating Emissions and Transfers in the PRTR.  
[https://www.gov.il/en/Departments/General/calculation\\_methodology](https://www.gov.il/en/Departments/General/calculation_methodology) (English).  
[https://www.gov.il/he/departments/general/calculation\\_methodology](https://www.gov.il/he/departments/general/calculation_methodology) (Hebrew).
- [10] Climate Transparency. Country profiles.  
<https://www.climate-transparency.org/countries>
- [11] The Carbon Footprint. Emission factor database.  
<https://www.carbonfootprint.com/factors.aspx>
- [12] The Ecoinvent Association. The ecoinvent database.  
<https://ecoinvent.org/the-ecoinvent-database/>

### Disclaimer

The Company has made good faith and reasonable efforts to ensure the accuracy of the information presented in this Scope 1 and 2 emissions disclosure. This report and associated materials have been prepared utilizing international and industry standard methodologies to describe our approach towards the calculations of scope 1 and 2 greenhouse gas emissions. Although Company believes the report and its information to be reliable, neither a guarantee, nor a warranty express or implied is made regarding the information provided, as it may be subject to updates and revisions as additional information becomes available in the future or certain third-party data required for the preparation of this report is amended. While we strive to use reputable sources, the Company is not responsible for the accuracy or reliability of third-party data, and no endorsement or warranty is provided for such information. The information provided herein is not intended to be a substitute for any technical, regulatory, legal or other professional advice, in any relevant jurisdiction, on any subject matter.