

Carbon Footprint Tool Project

Calculation Tool

for Oil & Gas

Valves Manufacturers

and their supply chain



Project initiative by Valvecampus



Italian Valves Manufacturers Association

45 member companies

Mission

Training, Promotion, Support for the Italian Valves Industry,
Technical Partner of the IVS – Industrial Valve Summit of
Bergamo

Driver of the project

ESG and Carbon Footprint



ESG stands for Environmental, Social, and Governance, which are three key factors used to measure the sustainability and ethical impact of a company or investment. **ESG** balance refers to the assessment of these factors to evaluate a company's overall sustainability performance.

The **ESG** balance of sustainability measures how well a company performs across these three dimensions. It aims to assess the company's commitment to sustainable practices, responsible governance, and social impact. Investors, stakeholders, and consumers are increasingly considering ESG factors in their decision-making processes to support companies that align with their values and prioritize sustainable development.

Driver of the project ESG and Carbon Footprint



Environmental

This aspect focuses on a company's impact on the environment. It includes factors such as carbon emissions, energy usage, waste management, water conservation, and efforts towards environmental conservation. Companies with a strong ESG balance in the environmental category would prioritize sustainability practices, have clear environmental goals, and take steps to minimize their negative impact on the environment.

Driver of the project

ESG and Carbon Footprint



Social

The social dimension of ESG looks at a company's relationships with its employees, customers, suppliers, communities, and other stakeholders. Factors considered include labor practices, diversity and inclusion, employee welfare, human rights, customer satisfaction, community engagement, and philanthropy. A company with a positive social ESG balance would prioritize fair and safe working conditions, foster diversity and inclusion, and contribute positively to the communities it operates in.

Driver of the project

ESG and Carbon Footprint



Governance

Governance refers to the system of rules, practices, and processes through which a company is directed and controlled. It encompasses factors such as board composition, executive compensation, transparency, ethics, risk management, and shareholder rights. A company with a strong governance ESG balance would have transparent and accountable management, effective board oversight, and policies that promote integrity and responsible decision-making.

Driver of the project ESG and Carbon Footprint



The Council and European Parliament reached a provisional political agreement on the Corporate Sustainability Reporting Directive (CSRD). The application of the regulation will take place in three stages:

- 1 January 2024 for companies already subject to the non-financial reporting directive
- 1 January 2025 for large companies that are not presently subject to the non-financial reporting directive
- 1 January 2026 for listed SMEs, small and non-complex credit institutions and captive insurance undertakings

Carbon Footprint



The ValveCampus Board has defined a project with the scope of developing a tool to help its members to calculate and report its carbon footprint with a uniform methodology, developed and supported by a well known and respected partner.

Step 1

Carbon Footprint Tool Spread Sheet

Step 2

Customize Scope 3 Calculation

Step 3

Carbon Footprint Calculation

Carbon Footprint tool



The tool developments has the following targets:

Calculation based on international standards

Designed to be used by both manufacturers and their supply chain

Quick deployment by collecting data already available to the Management

Provide uniform and auditable results

Low impact to the organization

Scalable to consider global operations/international supply chains

Carbon Footprint tool



Scope 1, Scope 2, and Scope 3 are commonly used categories for classifying and measuring greenhouse gas (GHG) emissions within an organization's operations or supply chain. These categories are defined by the Greenhouse Gas Protocol, a widely recognized standard for GHG accounting and reporting.

By considering and measuring emissions across all three scopes, organizations can gain a more comprehensive understanding of their Carbon Footprint and identify opportunities for emissions reductions and sustainability improvements throughout their operations and supply chain.

Carbon Footprint tool



Scope 1

Scope 1 emissions refer to direct GHG emissions that result from sources owned or controlled by the reporting entity. These emissions are produced from activities such as combustion of fossil fuels in owned or leased facilities, company-owned vehicles, or emissions from industrial processes. Examples include emissions from onsite boilers, company-owned vehicles, or fugitive emissions from production facilities.

Carbon Footprint tool



Scope 2

Scope 2 emissions represent indirect GHG emissions associated with the generation of purchased electricity, heat, or steam consumed by the reporting entity. These emissions occur as a result of the production of electricity or heat by a third party, which is then consumed by the reporting entity. Scope 2 emissions are considered indirect because the emissions occur at sources outside the organization's direct control but are a consequence of its electricity or heat consumption.

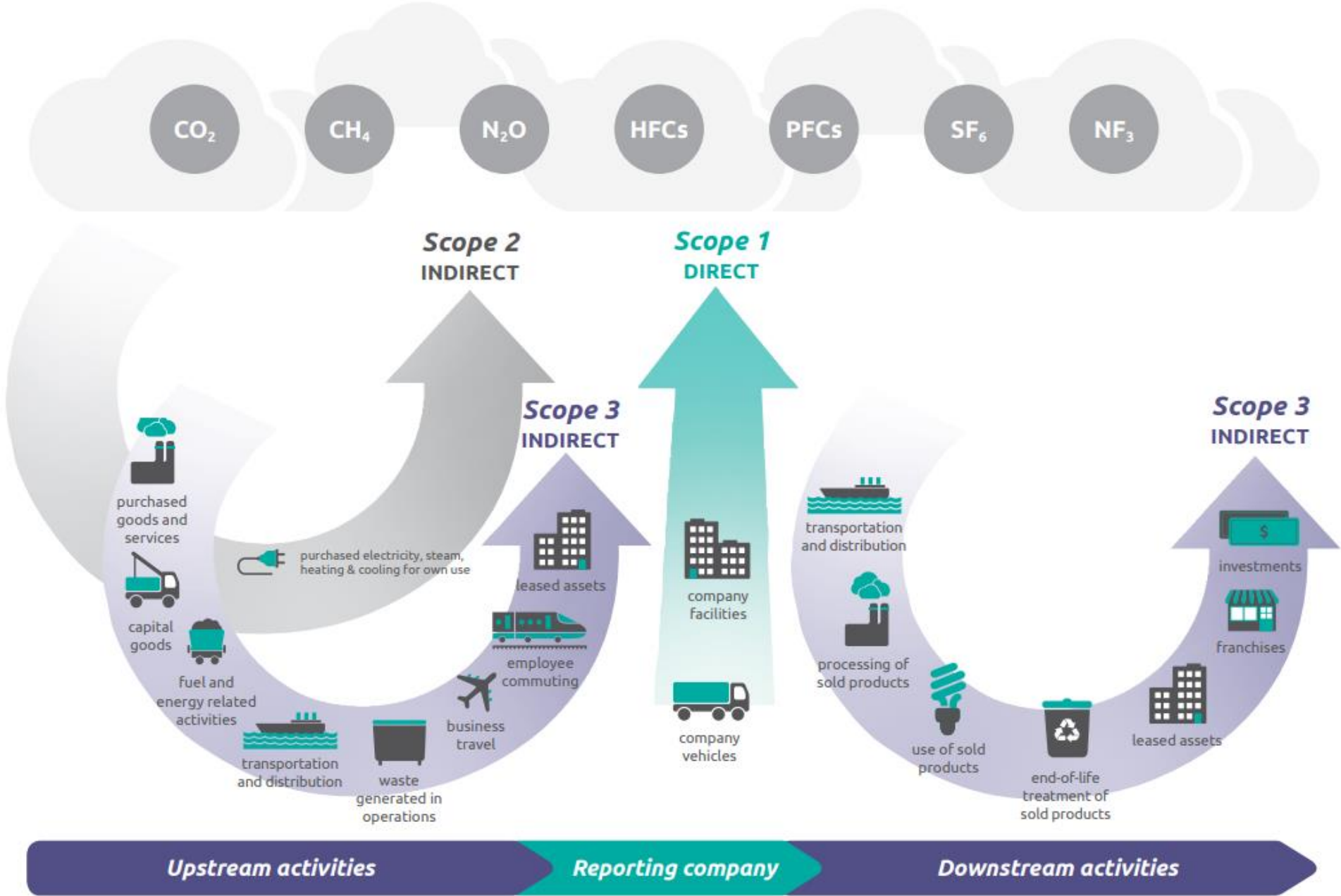
Carbon Footprint tool



Scope 3

Scope 3 emissions encompass all other indirect GHG emissions that occur in the value chain of the reporting entity, including both upstream and downstream activities. These emissions are typically outside the organization's direct operational control but are associated with its activities. Scope 3 emissions can include emissions from purchased goods and services, business travel, employee commuting, transportation and distribution, use of products or services, and waste disposal.

Figure [1] Overview of GHG Protocol scopes and emissions across the value chain



Scope 3 Emission Categories



Purchased Goods and Services



Capital Goods



Fuel and Energy-Related Activities



Upstream Transportation and Distribution



Waste Generated in Operations



Business Travel



Employee Commuting



Upstream Leased Assets



Downstream Transportation and Distribution



Processing of Sold Products



Use of Sold Products



End-of-Life Treatment of Sold Products



Downstream Leased Assets



Franchises



Investments

Carbon Footprint tool



New step

The emissions from Scope 3 are the most challenging to calculate because it requires strong collaboration from suppliers, who themselves face challenges in calculating their Scope 3 emissions!

Therefore, how to break free from this impasse?

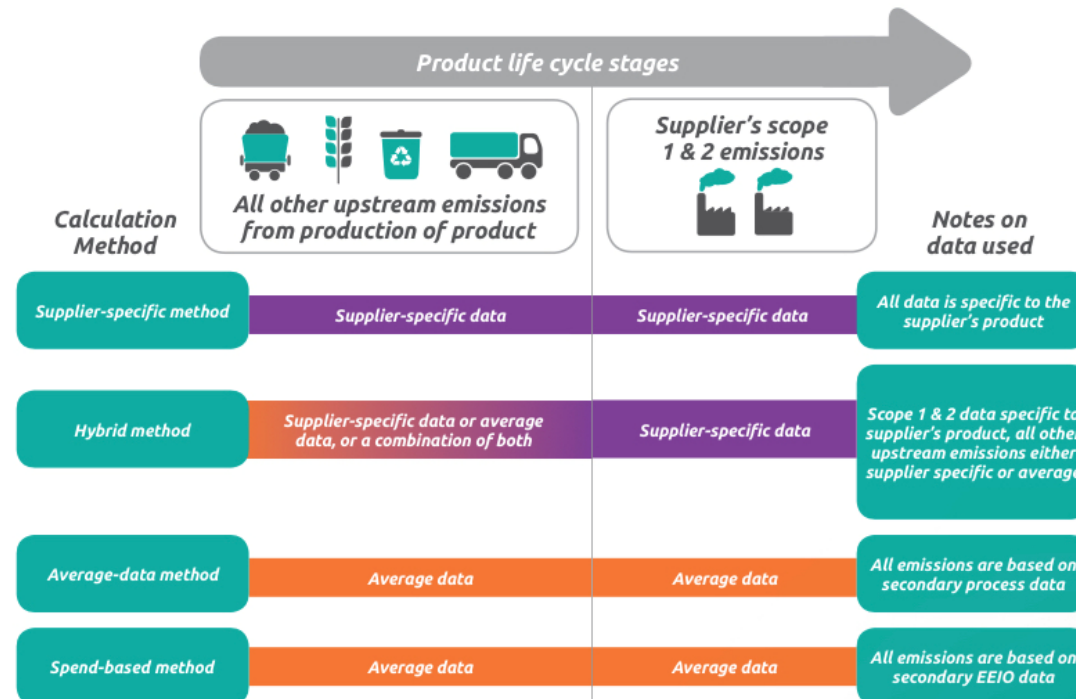
Technical Guidance for Calculating Scope 3 Emissions (version 1.0)

*Supplement to the Corporate Value Chain (Scope 3)
Accounting & Reporting Standard*



- **Supplier-specific method** – collects product-level cradle-to-gate GHG inventory data from goods or services suppliers.
- **Hybrid method** – uses a combination of supplier-specific activity data (where available) and secondary data to fill the gaps. This method involves:
 - collecting allocated scope 1 and scope 2 emission data directly from suppliers;
 - calculating upstream emissions of goods and services from suppliers' activity data on the amount of materials, fuel, electricity, used, distance transported, and waste generated from the production of goods and services and applying appropriate emission factors; and
 - using secondary data to calculate upstream emissions wherever supplier-specific data is not available.
- **Average-data method** – estimates emissions for goods and services by collecting data on the mass (e.g., kilograms or pounds), or other relevant units of goods or services purchased and multiplying by the relevant secondary (e.g., industry average) emission factors (e.g., average emissions per unit of good or service).
- **Spend-based method** – estimates emissions for goods and services by collecting data on the economic value of goods and services purchased and multiplying it by relevant secondary (e.g., industry average) emission factors (e.g., average emissions per monetary value of goods).

Figure [1.1] Different data types used for different calculation methods



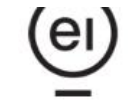
Carbon Footprint tool



Set up a model that allows the reporting entity to independently calculate Scope 3 emissions (without relying on suppliers), prioritizing Category 1 emissions and utilizing international databases (such as the Ecovent Database) to calculate emissions for the other 14 categories.

Upstream scope 3 emissions

| <i>Category</i> | <i>Category description</i> | <i>Minimum boundary</i> |
|--|---|---|
| 1. Purchased goods and services | <ul style="list-style-type: none">• Extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in Categories 2 - 8 | <ul style="list-style-type: none">• All upstream (cradle-to-gate) emissions of purchased goods and services |



Ecovent Database

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**For the availability of
environmental data
worldwide**

**Publisher of the world's
most consistent & transparent
life cycle inventory database**



Light

Dark

Carbon Footprint tool



ValveCampus will continue to be involved in development and promotion of the tool:

- Maintain and improve the tool power of calculation
- Update the tool to the evolving framework of the international standard
- Promote the tool to the EPCs and End Users as a working Standard
- Implement to tool as a requirement for the supply chain of the VC members
- Last step: Carbonfootprint per unit of product



Thank you