MKS PAMP SA

A. ZAUCB00211 – 999.9 Gold Carbon Neutral Kilobar
B. ZAULB00117 – Gold 999.9 - 400 oz Large Bar (Carbon Neutral)
C. ZAULB00121 - Gold995+ - 400 oz Large Bar (LBMA - Carbon Neutral)
D. ZAULB00122 - Gold 995+ - 400 oz Large Bar (SWISS - Carbon Neutral)

Qualifying Explanatory Statement

in support of the

Achievement of and ongoing commitment to carbon neutrality

Application Period: 1st July 2022 – 30th June 2023

Date: 1st July 2022. **Updated**: 8th February 2023

1. Executive summary

This document is the Qualifying Explanatory Statement (QES) which provides collected evidence in support of the declaration that MKS PAMP SA:

1. has achieved carbon neutrality for its A. ZAUCB00211 – 999.9 Gold Carbon Neutral Kilobar, B. ZAULB00117 - Gold 999.9 - 400 oz Large Bar (Carbon Neutral), C. ZAULB00121 - Gold995+ - 400 oz Large Bar (LBMA - Carbon Neutral) and D. ZAULB00122 - Gold 995+ - 400 oz Large Bar (SWISS - Carbon Neutral) marketed globally for the period commencing July 2022 to June 2023 (see Section 3); and
2. is committed to maintaining carbon neutrality for its A. ZAUCB00211 – 999.9 Gold Carbon Neutral Kilobar, B. ZAULB00117 - Gold 999.9 - 400 oz Large Bar (Carbon Neutral), C. ZAULB00121 - Gold995+ - 400 oz Large Bar (LBMA - Carbon Neutral) and D. ZAULB00122 - Gold 995+ - 400 oz Large Bar (SWISS - Carbon Neutral) (see section 4).

The carbon neutrality declaration has been made and the collected supporting evidence has been provided in accordance with the requirements prescribed by PAS 2060:2014 – Specification for the demonstration of carbon neutrality.

Marwan Shakarchi
CEO
05/01/2023

2. General information

PAS 2060 Requirement	Information Relating to the Carbon Neutral Declaration
Entity making PAS 2060 declaration:	MKS PAMP SA
Subject of PAS 2060 declaration:	A. ZAUCB00211 – 999.9 Gold Carbon Neutral Kilobar B. ZAULB00117 - Gold 999.9 - 400 oz Large Bar (Carbon Neutral), C. ZAULB00121 - Gold995+ - 400 oz Large Bar (LBMA - Carbon Neutral) D. ZAULB00122 - Gold 995+ - 400 oz Large Bar (SWISS - Carbon Neutral) Emissions included: - Raw materials - Inbound transportation - Manufacturing - Downstream Distribution - End of Life
Description of Subject:	A. Cast bullion bar made of 1 kg of fine gold (999.9 purity). B. Cast bullion bar made of 12.5 kg of fine gold (999.9 purity). C. Cast bullion bar made of 12.5 kg of fine gold (995+ purity). D. Cast bullion bar made of 12.5 kg of fine gold (995+ purity).

Rationale for selection of the subject:	Out of our cast products range, this product has consistently the highest number of pieces produced, which accounts for a significant amount of MKS PAMP SA's operational emissions. This cast bar is in the same product family, a staple in our gold bar sales.
Boundary:	Cradle-to-Grave
Type of conformity assessment:	Independent third-party certification (see Annex 4)
Baseline date for PAS 2060 programme:	1st July 2022-30th June 2023
Individuals responsible for evaluation and provision of data necessary for declaration:	Tamara Jomaa-Shakarchi- Head of ESG Giovanni Calabria – ESG Manager Marco Villari – ESG Officer

3. Declaration of achievement of carbon neutrality

PAS 2060 Requirement	Information relating to the carbon neutral declaration
Declaration of achievement:	Carbon neutrality of A. ZAUCB00211 – 999.9 Gold Carbon Neutral Kilobar, B. ZAULB00117 - Gold 999.9 - 400 oz Large Bar (Carbon Neutral), C. ZAULB00121 - Gold995+ - 400 oz Large Bar (LBMA - Carbon Neutral) and D. ZAULB00122 - Gold 995+ - 400 oz Large Bar (SWISS - Carbon Neutral) achieved by MKS PAMP SA in accordance with PAS 2060 in June 2022 for the period commencing 1st July 2022, certified by the Carbon Trust.
Recorded carbon footprint of the subject during the period stated above	**2 731.24** kgCO2e/kg of gold. **54 624.8** tCO_2e based on forecast sales of 20,000 kg total for products (A) + (B).
Carbon footprint reduction target for period	As MKS PAMP SA Carbon Neutral Gold bars is a new product, in the first year of certification, the product emission data will be used as a baseline year for future reduction. As such, no reduction is targeted in Year 1 (1st July 2022 – 30th June 2023). Reduction is targeted as of Year 2 (1st July 2023 – 30th June 2024). MKS PAMP SA plans to reduce the product footprint by at least 1.22 % from Year 1, translating into a reduction of at least 33.32 kg of CO2 emissions per kg of gold. See Annex 2 for further details on year-on-year targeted reductions.

Carbon footprint reduction achieved for period	As MKS PAMP SA Carbon Neutral Gold bars is a new product, in the first year of certification, the product emission data will be used as a baseline year for future reduction. As such, no reduction has taken place Year 1 (1 July 2022-30 June 2023). Reduction is targeted as of Year 2. See section 3.3 for further details.
Carbon offsets purchased	**54 625** tCO_2e See section 3.4 for further details.

3.1. Carbon footprint methodology

PAS 2060 Requirement	Information relating to the carbon neutral declaration
Description of the standard and methodology used to determine GHG emissions and reductions	The methodology for calculating the carbon footprint was developed to be in accordance with the requirements of ISO 14067 and PAS 2060:2014. The methodology is as follows: The footprint was calculated by the Carbon Trust, using primary data provided by MKS PAMP SA for operations from 1st January 2020 to 31st December 2020. The annual footprint was divided by the mass of gold bar output to yield a $kgCO_2e$ footprint per kg. The estimated total footprint of the subject of neutrality was calculated based on estimated sales volume and will be finalised in a reconciliation process in the next certification cycle, once actual sales data is available. MKS PAMP SA produces many products at their facility in addition to the gold bars. Therefore, MKS PAMP SA allocated raw material inputs, outputs, and utility usage for each process step based on the mass output of all products manufactured at their factory. Inbound and outbound transportation distances and modes were provided by MKS PAMP SA, and end-of life emissions were calculated using secondary data and assumptions. Activity data was multiplied by emission factors to calculate emissions. For the virgin gold supply, MKS PAMP SA provided the Carbon Trust with supplier-specific emission factors based on reported figures and calculations. Since MKS PAMP SA also uses recycled gold as an input, the virgin gold emission factor was inputted into the EU Product Environmental Footprint Circular Footprint Formula to yield the overall emission factor that was applied to the gold input. Other emission factors were sourced from Government publications (i.e. BEIS), Ecoinvent v3.7.1., and published literature.
Justification for the selection of the methodologies chosen	The carbon footprint of the listed product was calculated using a recognised methodology that was based on the following document:

	- ISO 14067 - an internationally recognised approach to the calculation of representative product CO2e footprints which meets the requirement of PAS 2060 for the substation of GHG emissions. The GHG emissions that are accounted for in the footprint study of the product are based on the 100-year Global Warming Potential figures published in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report, 2014 and include those required by the GHGP Product Standard. Further, the following assumptions were made in quantifying GHG emissions: <u>Raw materials:</u> - The virgin emission factor for gold was provided by PAMP for the top 78% of suppliers on a mass basis; the weighted average emission factors was applied to all virgin inputs. - Potassium fluoroborate emission factor was not reported in Ecoinvent 3.7.1 so the EF for sodium fluoroborate was used instead. - Certain EFs for chemicals were not available, proxies were used, for example trimercaptotriazine. - Black water and white water are outputs provided by PAMP. It is assumed that water consumption is the sum of these two. <u>Packaging:</u> In the absence of specific information, it is assumed that raw materials used in packaging are virgin materials. Since packaging makes up a small proportion of the total footprint, this has a negligible impact. <u>End of Life:</u> In terms of the PEF CFF, it is assumed that there is a 100% recycling rate of the gold bar at the end of its life. Products that are large, high purity metals (such as a solid gold bar), will usually be recycled. Products with metals in small amounts, especially where combined or alloyed with other materials, are unlikely to be recycled. For packaging end-of-life, an EU average was used due to the absence of global factors. However, this does not have a material impact on the footprint

3.2. Carbon footprint summary

Carbon Footprint *(for latest footprinting year)*	**Information relating to the carbon neutral declaration**
Total Carbon Footprint	**54 624.8** tCO2e based on forecast sales of 20,000 kg total for products (A) + (B). Actual sales will be reviewed during reconciliation at the end of the certification period and the footprint, and number off offsets required, will be adjusted.
Carbon Footprint per functional unit	The total emissions per functional unit is as follows: **2 731.24** kgCO2e/kg See Annex 1 for further details.

3.3. Carbon reduction

PAS 2060 requirement	**Information relating to the carbon neutral declaration**
Reductions achieved	As MKS PAMP SA Carbon Neutral Gold bars is a new product, in the first year of certification, the product emission data will be used as a baseline year for future reduction. As such, no reduction has taken place Year 1 (1 July 2022-30 June 2023). Planned reductions for all four products (A), (B), (C) and (D) are as follow: Intensity reduction: 33.32 kgCO2e/kg for Year 2 (1st July 2023 – 30th June 2024) from Year 1 (1st July 2022 – 30th June 2023). Percentage intensity reduction: 1.22% for Year 2 (1st July 2023 – 30th June 2024) from Year 1 (1st July 2022 – 30th June 2023).
Baseline period	1st July 2022 – 30th June 2023 (Year 1)
Confirmation that there has been no change to the definition of the subject	The subject remained unchanged at every stage of the methodology. There has been no material change to the subject.
Description of the means by which reductions have been achieved and any applicable assumptions or justifications	As MKS PAMP SA Carbon Neutral Gold bars are new products, in the first year of their certification, reduction has not been achieved yet. See section 4.1 for the carbon management plan that details MKS PAMP SA planned means for reduction.

3.4. Carbon offsets

PAS 2060 Requirement	Information Relating to the Carbon Neutral Declaration
Offset methodology	Carbon Credits amounting to a total of **54,625 tonnes of CO2e** are purchased from the CDM and VCS programs, offsetting for Scope 1, 2, and 3 of the emissions from the fabrication of products A and B. See Annex 3 for methodology details.
Offset Confirmation	The offsets generated represent genuine, additional GHG emission reductions in areas of the products' value chain. Projects involved in delivering offsets meet the criteria of additionality, permanence, leakage, and double counting. Carbon offsets are verified by an independent third-party verifier. The credits from the selected carbon offset projects are: - Only issued after the emission reduction has taken place. - Retired within 6 months from the date of the declaration of achievement. - Supported by publicly available project documentation on a registry which provides information about the offset project, quantification methodology and validation and verification procedures. - Stored and retired in an independent and credible registry.
Offsets	Full details of the carbon offsets included in making this declaration are provided in Annex 3.

4. Declaration of ongoing commitment to carbon neutrality

PAS 2060 Requirement	Information Relating to the Carbon Neutral Declaration
Declaration of on-going commitment:	MKS PAMP SA commits to maintain carbon neutrality for ZAUCB00211 – 999.9 Gold Carbon Neutral Kilobar, ZAULB00117 - Gold 999.9 - 400 oz Large Bar (Carbon Neutral), ZAULB00121 - Gold995+ - 400 oz Large Bar (LBMA - Carbon Neutral) and ZAULB00122 - Gold 995+ - 400 oz Large Bar (SWISS - Carbon Neutral) in accordance with PAS 2060 for the period July 2022 – June 2023. Carbon neutrality for ZAUCB00211 – 999.9 Gold Carbon Neutral Kilobar and ZAULB00117 – 999.9 Gold Carbon Neutral Large Cast Bar for the period July 2023 – June 2024 will be achieved by June 2024.

4.1. Carbon management plan

PAS 2060 Requirement	Information Relating to the Carbon Neutral Declaration
Targets for GHG reduction for the defined subject appropriate to the timescale for achieving carbon neutrality	Based on the data period of baseline Year 1 (1 July 2022- 30 June 2023), MKS PAMP SA aims to reduce the GHG emissions of all four products (A) ZAUCB00211 – 999.9 Gold Carbon Neutral Kilobar, (B) ZAULB00117 - Gold 999.9 - 400 oz Large Bar (Carbon Neutral), (C) ZAULB00121 - Gold995+ - 400 oz Large Bar (LBMA - Carbon Neutral) and (D) ZAULB00122 - Gold 995+ - 400 oz Large Bar (SWISS - Carbon Neutral) as follows: Short Term: In Year 2 (1st July 2023- 30th June 2024), by at least 1.22 % from Year 1, translating into at least 33.3kg CO2e reduced emissions per kg of gold. Medium Term: In Year 5 (1st July 2026 – 30th June 2027), by at least 4.88 % from Year 1, translating into 133.3 kg CO2e reduced emissions per kg of gold. Long Term: In Year 8 (1st July 2029 – 30th June 2030), by at least 8.54 % from Year 1, translating into 233.2 kg CO2e reduced emissions per kg of gold. Moreover, MKS PAMP SA has set SBTi-approved GHG reduction targets for their Scope 1,2 and 3 by 2030, which demonstrates the company's wider ambitions on overall GHG emission reduction goals.
Planned means of achieving avoided GHG emissions	MKS PAMP SA developed a strategy to minimize its GHG emission by focusing on avoidance in the manufacturing processes where the company has complete control (scope 1 and 2 of the product's emissions) and on reduction process where the company has more limited control such as the inbound of raw material (scope 3 of the product's emissions). As such, the plan to avoid GHG emissions lay primarily in MKS PAMP SA manufacturing process at its production site, as these are in our complete control. MKS PAMP SA has planned the following short-term: Avoid the use of Diesel in boilers: Diesel was the second highest emission source in our manufacturing process, and as such, we have been working since 2019 to stop using Diesel in all our processes. MKS PAMP SA did an initial transformation to natural gas in 2020, and although shifts in gas supplies have varied in Europe, MKS PAMP SA has committed to avoiding using Diesel at all costs.

	Avoid using fossil fuels for electricity: Committed to sourcing 100% of its electricity from renewable sources, MKS PAMP SA is currently purchasing Swiss Hydroelectric certificates. The shift to 100% renewable sources across its site aligns with our SBTi commitments for 2030. MKS PAMP SA has been sourcing 100% renewable electricity as of January 2022 (and as of 2017 at its Production facility) and plans to continue to source 100% renewable electricity long-term. Avoid using an excess of energy in our manufacturing: MKS PAMP SA has conducted a complete energy analysis of its manufacturing process to ensure that a plan for energy monitoring is in place as of FY24. Better energy management would avoid excess GHG emissions across its production.
Planned means of achieving and maintaining GHG emissions reduction	The majority of GHG emissions related to the product lay in the inbound of raw gold materials. MKS PAMP SA will take the following actions to ensure that reduction occurs: 1. Select sources that have set GHG emissions reduction goals, have taken steps to reduce or adopt additional reduction initiatives. 2. Redraft our refining contracts and onboarding document of our precious metal suppliers to include information on GHG emission. 3. Revise our strategy to include a greater focus on new clients' base that have GHG considerations. 1. Source selection The general sourcing of gold bars includes a mix of mined and recycled sources. The sourcing mix usually depends on market fluctuation regarding the pricing of the material and availability of different sources, and the end consumer's demand. MKS PAMP SA plans to set specific mechanisms to ensure that GHG emissions are considered while making decisions on our sourcing mix. **Short-term focus: Maximize recycled materials.** GHG emission reduction plans at mining sites take time to implement. As such, MKS PAMP SA commits to making choices in the balance of the overall mix (mined vs. recycled) of our general feed which is used to produce the Carbon Neutral bars. MKS PAMP SA intends to maximize secondary recycled materials when mines have not yet adopted actions to ensure necessary GHG emission reduction in their activities. **Medium-term focus: Establish internal controls for sourcing carbon emission management**. MKS PAMP SA plans to continuously monitor its supply flow to ensure no significant discrepancies in the sourcing mix. Intake in sources is done daily at the production site once each shipment is received. MKS PAMP SA will put in place a process led by the ESG team that estimates monthly the overall and per kg GHG footprint for precious metals input and compare it to targets. Adjustments will be sought to address excesses. When that process is

	in place, the effective vs. targets figures will be reported to strategic teams within MKS PAMP SA on a quarterly basis. **Long-term focus:** MKS PAMP SA is committed to providing the most stable sourcing balance ahead of 2030. It is primordial to MKS PAMP SA that GHG emission reduction occurs across mining and recycling suppliers. **Evaluate our working relations with mining sources**. MKS PAMP SA will collaborate with its mining partner to ensure GHG reductions in their activities and will choose to supply from mines depending on their reduction capacity. **Improve our refining capacity for recycled materials**. MKS PAMP SA plans to expand its refining process to include infrastructure and technology better adapted to intake recycled materials, increasing its capacity for recycled sources. MKS PAMP SA has considered the potential effects that an increase in supply from secondary sources may lead to an increase in emission related to the refining of the material as the composition of the inbound material may require more energy & chemicals for the fine metal refined. 2. Client-relation documents MKS PAMP SA starts working with clients only after the compliance department approves the clients' onboarding process. To ensure that new clients' emission reduction pathways align with MKS PAMP SA strategy, we will require mining clients to disclose their GHG reduction ambition during this process. Accordingly, we will not take on new mining clients who do not present any pathway for reduction. For existing clients, MKS PAMP SA will revise their refining contract to ensure disclosure of their GHG emissions and allow MKS PAMP SA to act accordingly. **Short-term focus: Amend existing refining contract within mining sources.** MKS PAMP SA includes a clause that requires clients to disclose their names to MKS PAMP SA and Scope 1, 2 and 3 GHG current and prospective data only for our internal evaluation purpose by 3rd party consultants or auditors mandated by MKS PAMP SA and bound by strict confidentiality clauses. This information will not be disclosed to any other external party, without the consent of the client. **Medium-term focus: Incorporate carbon measurement and reduction requirements in clients' onboarding forms and compliance reviews**. MKS PAMP SA will ensure clients disclose their GHG data, intention to reduce carbon emissions, ambitions, and action plans. Clients will be reviewed and onboarded based on their commitment to GHG reductions and their capacity to act. **Long-term focus: Formalize clients' carbon reduction targets**. MKS PAMP SA plans to add in their contractual agreements with mines, carbon reduction pathways that they set with the clients. Based on the

	meeting MKS PAMP SA will hold with the client (in line with their sales strategy), they will set joint reduction emission targets adapted to each supplier that align with MKS PAMP SA's Scope 3 reduction target. 3. Governance and strategy MKS PAMP SA sales team is the primary interface with our precious metal supplier. They meet with suppliers regularly (including through on-site visits) and have the most in-depth understanding of the applicability of GHG emissions reduction targets. MKS PAMP SA intends to adapt its governance documents (bylaws) to ensure that its sales strategy includes GHG emissions consideration while engaging with current precious metal suppliers and target new suppliers. **Short-term focus**: **Change MKS PAMP SA bylaws to include sustainability.** MKS PAMP SA will modify the objectives and the duties of the company purpose to mention the necessity for it to strive for a material positive impact on society and the environment. In line with the Swiss Board Alliance 2030 initiative, these amendments will allow greater internal enforceability and a clear message to our precious metal supplier on our GHG reduction commitments. **Short-term focus: Conduct market analysis.** MKS PAMP SA will analyze mines based on their GHG emissions and will focus on starting or increasing working relationships with those who emit less GHG or have plans to reduce their GHG emissions in the coming years. **Medium-term focus: Meet with precious metals suppliers regularly.** MKS PAMP SA will meet with mines regularly and allocate a part of their plan to GHG emission reduction. The aim would be to: - Sensitize mines with MKS PAMP SA reduction actions. - Acquire firsthand yearly carbon emission data from our mining sources. - To collaborate with the mine to set a pathway for GHG reduction (MKS PAMP SA would then include this pathway in refining contracts). **Long-term focus: Onboard new clients**. MKS PAMP SA will work towards establishing business relationships with new clients that have GHG emissions in line with our GHG emissions goals.
The offset strategy to be adopted for residual emissions	For a count of 20 tonnes total production of ZAUCB00211 – 999.9 Gold Carbon Neutral Kilobar, ZAULB00117 - Gold 999.9 - 400 oz Large Bar (Carbon Neutral), ZAULB00121 - Gold995+ - 400 oz Large Bar (LBMA - Carbon Neutral) and ZAULB00122 - Gold 995+ - 400 oz Large Bar (SWISS - Carbon Neutral) we are estimating **54,625** tCO2e necessary to be offset. This estimate is based on forecasted sales. There will be a reconciliation at the end of the certification period to ensure that the

	correct number of credits are purchased to offset the emissions of the actual volume sold during the certification period. See Annex 3 for the nature of the offsets and number of credits.

Annex of Qualifying Explanatory Statement

Annex 1: Greenhouse gas emissions summary

A1.1 Carbon footprint details

Product	Stock Keeping Unit	Geographic Area	Total Net gCO_2e not rounded	gCO_2 per Functional Unit not rounded	gCO_2 per Functional Unit rounded	Functional Unit
Gold Bars	ZAUCB00211-999.9 Gold Carbon Neutral Kilobar	Global	54,624,800,000	2,731,240	2,800,000	1 Kilobar
	ZAULB00117 - Gold 999.9 - 400 oz Large Bar (Carbon Neutral)					
	ZAULB00121 - Gold995+ - 400 oz Large Bar (LBMA - Carbon Neutral)					
	ZAULB00122 - Gold 995+ - 400 oz Large Bar (SWISS - Carbon Neutral)					

A1.2 Methodology overview

Requirement	Information Relating to the Carbon Neutral Declaration
Boundary of the product	MKS PAMP SA is a provider of financial and physical trading services, and precious metals refinery based in Switzerland and member of the MKS PAMP GROUP. The products are MKS PAMP SA Gold bars (1kg and 12.5kg) and are part of a range of precious metal cast bars produced at MKS PAMP SA. The 1kg and 12.5 kg gold bars are manufactured at the MKS PAMP SA

	refinery in Ticino, Switzerland to the highest industry standards. These bars are primarily used by clients for investment purposes and are sold to banks, financial institutions, governments, and state mints worldwide.
Boundary of carbon footprint (the greenhouse gas emissions system considered)	Carbon Trust Assurance Limited certified that MKS PAMP SA has calculated the carbon footprint representing all Gold Bars Cradle-to Grave Business-to- Consumer and marketed globally in accordance with PAS 2060:2014. MKS PAMP SA Gold bars are finished products that are produced at MKS PAMP SA refinery in Ticino, Switzerland and shipped to customers globally. The bullion bars are sold through our sales teams based in our MKS PAMP SA group offices. The cradle-to-grave product carbon footprint includes all emissions from raw material extraction, value chain logistics (up and downstream distribution), manufacturing, packaging, and storage from the sourcing site to MKS PAMP SA refinery to the end-of-life storage of the product. Further information on each stage is listed below: **Raw materials** Gold inputs come from both virgin and recycled sources. The short-term mix of both being dependent on market fluctuation regarding the pricing of the material and availability, and the end consumer's demand. The carbon neutral product is based on MKS PAMP SA general feed of sources from the baseline year 2020 and includes approximately 50% mined and 50% recycled sources. **Inbound Transportation** Raw materials are systematically transported from suppliers based globally to MKS PAMP SA's manufacturing facility in Ticino, Switzerland. This by air or sea and road. **Manufacturing** Once the raw material is received it is wight analysed for purity and to make sure that its composition follows correct norms It then passes through the refinery and foundry, and the banking to produced bouillon products. For manufacturing, electricity was the main energy source and 100% of the electricity was derived from hydroelectric power. Other energy sources used at the plant were natural gas and propane. **Packaging** Packaging is carried out as MKS PAMP SA's facility. 1kg gold bars are individually packaged in protective plastic rolls with a paper certificate each. 25 bars are packaged in one plastic box for shipping. 12.5kg bars are packaged in wooden pallets, each containing about 500kg of gold. **Downstream distribution**

	Finished products are transported by road from MKS PAMP SA in Switzerland to Zurich airport or to the final customers in Switzerland. For the 1kg gold bar, the products are flown to Malaysia, Thailand, USA, and India. From here, the products are transported to the end customer, by air and/or road. **End-of-life** Clients traditionally keep purchase gold bars in vaulting facilities. For the gold bars it is assumed 100% of the metal is recycled. It is only the packaging that would be dispose of.
Functional unit	1 Kilobar

A1.3 Lifecycle Overview

Life cycle stage	Description	GHG Emissions Category	Excluded emissions & Justification	Primary data sources	Secondary data sources	Data quality and uncertainties
Raw Materials	Gold, other inputs and packaging	Scope 3 Category 1 and 2		The total mass of the raw material inputs for each footprinted product over the reporting year. Type of provenance (mined vs recycled), amount in gr and in oz, sourced from the supplier, weighted coefficient, origin of the source, and when	The emissions factors for the gold sources (both recycled and mined) were calculated using the EU Product Environmental Footprint Circular Footprint Formula (PEF CFF). The emission factors for mined sources were calculated from specific suppliers and provided by MKS PAMP SA.	**Gold**: MKS PAMP SA provided the gold sourcing data of the used mines, with the mines name anonymized due to pre-existing confidentiality provisions in contractual agreements between MKS PAMP SA and its clients. The certification team was thus, unable to provide the direct mapping to each individual used source, and the calculated figures are in

				available emission intensity	Recycled emission factors were taken from literature and averaged. For other chemical inputs, emission factors were taken from the FPX v4.5 database (mostly BEIS 2020) or EcoInvent 3.7.1. In the cases when the emission factors were not available in either database, an emission factor of a similar chemical was applied from EcoInvent. If this also wasn't available, a generic emission factor was applied – 'chemical, organic' or 'chemical, inorganic' (also from EcoInvent).	consequence affirmed only at aggregated level. The plausibility check was conducted against industry data, per the requirement of ISO 14067 standard. MKS PAMP SA has taken measures to ensure that disclosures of mine-specific data including the name of the source will be available in the future, as it is a prerequisite for recertification. **Other inputs**: Obtaining supplier-specific emission factors would increase the accuracy of the footprint as generic emission factors would no longer be required. **Packaging**: Increase percentage of recycled percentage within for example the packaging of the finished materials, this would decrease the overall emissions.
Inbound transport	Transport of raw materials from supplier to	Scope 3 Category 4	Inbound packaging of gold was excluded due to immateriality	Suppliers' location, the distance and mode of transport (air, sea, road), and the distance used by	Emission factors were applied to these activity data which derive from Carbon Trust FPC v4.5 transportation calculator.	Attaining more clarity over the transportation stages could improve footprint accuracy. For example, it may be that the suppliers use electric vehicles,

	MKS PAMP SA			each of the mode of transport.		or particularly efficient logistical practices.
Manufacturing	Fuels (Gas, Propane), Electricity, and waste	Scope 1, Scope 2, Scope 3 Category 5		Based on invoice of suppliers of MKS PAMP SA. Electricity: MWh / year for electricity Natural gas and propane: m3 / year for each process step. Waste: data in percentage of mass of product (kg) is waste per year.	Electricity and fuels: The full lifecycle emission factor for hydroelectric power was taken from www.hydropower.org Emission factors from BEIS 2020 were used for natural gas and propane. For each process step a specific amount of kgCO2e emissions were associated with them, namely for example the first moulting or the anode casting. Waste: BEIS 2020 was used for waste treatment emission factors.	N/A
Downstream Distribution	Transport of Gold Bars from MKS PAMP	Scope 3 Category 9		Locations (country) the product was transported to, the distance and mode of transport (air, sea,	Emission factors were applied to these activity data which derive from Carbon Trust FPC v4.5	Attaining more clarity over the transportation stages could improve footprint accuracy. For example, it may be that the

	SA to global markets			road), and the distance used by each of the mode of transport.	transportation calculator.	
Use Phase		Scope 3 Category 11 and 13	Not Applicable, no energy associated with use	N/A	N/A	N/A
End of life	Disposal of Gold and Packaging	Scope 3 Category 12	Gold, as it is considered infinitely recycled.	Packaging: The mass of materials for one box or pallet of packaging and the disposal methods of the packaging.	Packaging: These masses were then scaled up to account for the total production output for each product. Emission factors applied to these packaging materials came from the Carbon Trust's FPX v4.5 database.	N/A

A1.4 Geographical Areas of Emissions Overview:

Geographical Area	Relevant Emissions				
	Raw Material (Gold + Other Input)	Inbound Transportation	Manufacturing	Downstream Distribution	End of life
Global	2,720.8 kgCO2e	6.0 kgCO2e	0.2 kgCO2e	4.3 kgCO2e	0.0 kgCO2e

Annex 2: Greenhouse gas emissions reduction trajectory

The below tables state the target trajectory for reducing greenhouse gas emissions associated with the product or service advertised. The trajectory includes quantified annual progress targets, covering at least the ten years following the publication of the report.

SKU	Geography	Functional Unit	Requirement	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032
ZAUCB00211 **ZAULB00117** **ZAULB00121** **ZAULB00122**	**Global**	**kgCO2e / kilobar**	**Carbon footprint per functional unit**	2,731.2 *(kgCO2e)*	2,731.2 *($kgCO_2e$)*	2,697.9 *($kgCO_2e$)*	2,664.6 *($kgCO_2e$)*	2,631.2 *($kgCO_2e$)*	2,597.9 *($kgCO_2e$)*	2,564.6 *($kgCO_2e$)*	2,531.3 *($kgCO_2e$)*	2,498 *($kgCO_2e$)*	2,464.6 *($kgCO_2e$)*	2,4333.5 *($kgCO_2e$)*
			Percentage reduction target	0 % (Base Year)	1.22 %	2.44 %	3.66 %	4.88 %	6.1 %	7.32 %	8.54 %	9.76 %	10.9 %	12.12 %
			Reduction realised	N/A										

Annex 3: Offsets

The below information relates to the compensation of residual emissions (i.e. offsetting):

The volume of emissions reduced or sequestered via carbon offsetting corresponds to the residual emissions of the products in question. As per the requirements of PAS2060, it has been confirmed the offsets have been retired on a public registry to avoid double accounting.

The internal process for ensuring there is no double accounting of offsets is as follows: MKS PAMP SA has designated an officer within the ESG team to oversee that all purchased offsets are correctly accounted for. MKS PAMP SA has set up a manual accounting system (in line with its financial accounting system) to track offset allocation supported by our data system (Power Bi). Once offsets are retired, they are assigned to the corresponding SKU within the system, MKS PAMP SA calculates the total amount of offsets available per product. After every purchase of a Carbon Neutral Gold Bar, the ESG officer will make a report to the product management team with the amount (in kg) of product sold, the associated carbon offsets, and the remaining amount of Carbon Neutral gold and offsets available. Our offsetting team, sales team, and the head of ESG will then control these amounts for accuracy. The offset selected are from the projects listed below. Details on which project has been used to offset the GHG emission of the product is described on the QR code associated with the specific product.

Project name	Country	Project type	Standard	Type of credits	Total credits	Generation period	Retirement date	Reference No. & link to registry	Offset volume (tCO_2e)	Offset Price	Justification for choice of offset
Afforestation of degraded grasslands in Vichada, Colombia	Colombia	Agriculture Forestry and Other Land Use	VCS CCB	Afforestation	70	2020	March 1st 2023	https://registry.verra.org/ Reference: 2512	70	$18/tCo2	Based on its global footprint, MKS PAMP SA decided to focus on avoidance projects. Carbon avoidance projects contribute to climate action by preventing carbon that would have been released into the atmosphere. MKS PAMP SA selected projects that generate renewable energy: with three different technologies in three different geographies.

											Identifying offset projects had three key criteria for MKS PAMP SA 1) the project had to leverage the power of technology 2) the project had to be based in a country where it either operates or sources from and 3) be in line with its corporate values.
VTRM Renewable Energy 2	Brazil	Energy industries (renewable/non-renewable sources)	VCS	Wind	10,000	2019-2020	July 5th 2022	https://registry.verra.org/ Reference: 1903	10,000	below $10/tCO2	Based on its global footprint, MKS PAMP SA decided to focus on avoidance projects. Carbon avoidance projects contribute to climate action by preventing carbon that would have been released into the atmosphere. MKS PAMP SA selected projects that generate renewable energy: with three different technologies in three different geographies. Identifying offset projects had three key criteria for MKS PAMP SA 1) the project had to leverage the power of technology 2) the project had to be based in a country where it either operates or

											sources from and 3) be in line with its corporate values.
SOUBRE HYDROPOWER PROJECT	Ivory Coast	Energy industries (renewable/non-renewable sources	VCS	Hydro	10,900	2019 & 2021	July 5th 2022	https://registry.verra.org/ Reference: 1522	10,900	below $10/tCO2	Based on its global footprint, MKS PAMP SA decided to focus on avoidance projects. Carbon avoidance projects contribute to climate action by preventing carbon that would have been released into the atmosphere. MKS PAMP SA selected projects that generate renewable energy: with three different technologies in three different geographies. Identifying offset projects had three key criteria for MKS PAMP SA 1) the project had to leverage the power of technology 2) the project had to be based in a country where it either operates or sources from and 3) be in line with its corporate values.
SOUBRE HYDROPOWER PROJECT	Ivory Coast	Energy industries (renewable/non-	VCS	Hydro	7,100	2019 & 2021	July 5th 2022	https://registry.verra.org/ Reference: 1522	7,100	below $10/tCO2	Based on its global footprint, MKS PAMP SA decided to focus on avoidance projects. Carbon avoidance projects contribute to climate action by

		renewable sources									preventing carbon that would have been released into the atmosphere. MKS PAMP SA selected projects that generate renewable energy: with three different technologies in three different geographies. Identifying offset projects had three key criteria for MKS PAMP SA 1) the project had to leverage the power of technology 2) the project had to be based in a country where it either operates or sources from and 3) be in line with its corporate values.
SOLAR PHOTOVOLTAIC PROJECT BY GIRIRAJ RENEWABLES PRIVATE LIMITED	India	Energy industries (renewable/non-renewable sources	VCS	Solar	26,625	2019-2020	July 5th 2022	https://registry.verra.org/ Reference: 1786	26,625	below $10/tCO2	Based on its global footprint, MKS PAMP SA decided to focus on avoidance projects. Carbon avoidance projects contribute to climate action by preventing carbon that would have been released into the atmosphere. MKS PAMP SA selected projects that generate renewable energy: with three different

											technologies in three different geographies. Identifying offset projects had three key criteria for MKS PAMP SA 1) the project had to leverage the power of technology 2) the project had to be based in a country where it either operates or sources from and 3) be in line with its corporate values.
							Total tonnes (tCO_2e) offset		**54,625**		

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RETIRED UNITS

From Vintage	To Vintage	Serial Number	Quantity of Units	Unit Type	Project ID	Project Name	Project Type	Additional Issuance Certifications	Origination Program	Project Site State/Province	Project Country/Area	Account Holder	Retirement Reason	Beneficial Owner	Retirement Reason Details	Date of Retirement
01/01/2020	03/12/2020	13348-492093018-492093087-VCS-VCU-394-VER-CO-14-2512-01012020-03122020-1	70	VCU	2512	AFFORESTATION OF DEGRADED GRASSLANDS IN VICHADA, COLOMBIA	Agriculture Forestry and Other Land Use	CCB-No Distinction		Vichada	Colombia (CO)	ClearSky Limited	Retirement for Person or Organization	MKS PAMP SA	Retired on behalf of MKS PAMP SA, as part of their requirements for Carbon Neutrality certification given by Carbon Trust for the production of their bars numbered N000001 & N000002.	01/03/2023

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https://registry.verra.org/mymodule/rpt/CertificateInfo.asp?b=1&rhid=191535

UNIT INFORMATION REPORT

UNIT INFORMATION

Verification Period	15/09/2016-03/12/2020
Vintage Period	01/01/2020-03/12/2020
Originating Program	NA
Serial Number	13348-492093018-492093087-VCS-VCU-394-VER-CO-14-2512-01012020-03122020-1
Additional Certification(s)	CCB-No Distinction
Unit Type	VCU
Quantity of Units	70

Serial Number Help

ORIGINATING PROJECT INFORMATION

Project ID	2512
Project Name	AFFORESTATION OF DEGRADED GRASSLANDS IN VICHADA, COLOMBIA
Primary Project Type	Agriculture Forestry and Other Land Use
Additional Project Type(s)	NA
Project Site State/Province	Vichada
Project Site Country/Area	Colombia (CO)
Project VVB	Colombian Institute for Technical Standards and Certification (ICONTEC)
Crediting Period Start Date	15/09/2016
Crediting Period End Date	14/09/2046
Project Document	View

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RETIRED UNITS

From Vintage	To Vintage	Serial Number	Quantity of Units	Unit Type	Project ID	Project Name	Project Type	Additional Issuance Certifications	Origination Program	Project Site State/Province	Project Country/Area	Account Holder	Retirement Reason	Beneficial Owner	Retirement Reason Details	Date of Retirement
01/04/2019	31/12/2019	9729-128091810-128118434-VCS-VCU-997-VER-IN-1-1786-01042019-31122019-0	26625	VCU	1786	Solar Photovoltaic Project by Giriraj Renewables Private Limited	Energy industries (renewable/non-renewable sources)			Karnataka, Uttar Pradesh, Maharashtra	India (IN)	PACT Capital AG	Retirement for Person or Organization	MKS PAMP SA	These offsets are being retired on behalf of MKS PAMP SA as part of their requirements for Carbon Neutrality certification given by the Carbon Trust.	05/07/2022

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https://registry.verra.org/mymodule/rpt/CertificateInfo.asp?b=1&rhid=165060

UNIT INFORMATION REPORT

UNIT INFORMATION

Verification Period	01/04/2019-30/09/2020
Vintage Period	01/04/2019-31/12/2019
Originating Program	NA
Serial Number	9729-128091810-128118434-VCS-VCU-997-VER-IN-1-1786-01042019-31122019-0
Additional Certification(s)	NA
Unit Type	VCU
Quantity of Units	26,625

Serial Number Help

ORIGINATING PROJECT INFORMATION

Project ID	1786
Project Name	Solar Photovoltaic Project by Giriraj Renewables Private Limited
Primary Project Type	Energy industries (renewable/non-renewable sources)
Additional Project Type(s)	NA
Project Site State/Province	Karnataka, Uttar Pradesh, Maharashtra
Project Site Country/Area	India (IN)
Project VVB	LGAI Technological Center, S.A. (Applus+)
Crediting Period Start Date	02/03/2018
Crediting Period End Date	01/03/2028
Project Document	View

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RETIRED UNITS

From Vintage	To Vintage	Serial Number	Quantity of Units	Unit Type	Project ID	Project Name	Project Type	Additional Issuance Certifications	Origination Program	Project Site State/Province	Project Country/Area	Account Holder	Retirement Reason	Beneficial Owner	Retirement Reason Details	Date of Retirement
01/01/2021	30/06/2021	12389-408761291-408772190-VCS-VCU-291-VER-CI-1-1522-01012021-30062021-0	10900	VCU	1522	Soubre Hydropower Project	Energy industries (renewable/non-renewable sources)			San Pedro Province	Cote D'Ivoire (CI)	Concord Resources Limited	Retirement for Person or Organization	MKS PAMP SA	These offsets are being retired on behalf of MKS PAMP SA as part of their requirements for Carbon Neutrality certification given by the Carbon Trust	05/07/2022

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UNIT INFORMATION REPORT

UNIT INFORMATION

Verification Period	01/07/2020-30/06/2021
Vintage Period	01/01/2021-30/06/2021
Originating Program	NA
Serial Number	12389-408761291-408772190-VCS-VCU-291-VER-CI-1-1522-01012021-30062021-0
Additional Certification(s)	NA
Unit Type	VCU
Quantity of Units	10,900

Serial Number Help

ORIGINATING PROJECT INFORMATION

Project ID	1522
Project Name	Soubre Hydropower Project
Primary Project Type	Energy industries (renewable/non-renewable sources)
Additional Project Type(s)	NA
Project Site State/Province	San Pedro Province
Project Site Country/Area	Cote D'Ivoire (CI)
Project VVB	Tuev Nord Cert GmbH (Tuev Nord)
Crediting Period Start Date	25/05/2017
Crediting Period End Date	24/05/2027
Project Document	View

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RETIRED UNITS

From Vintage	To Vintage	Serial Number	Quantity of Units	Unit Type	Project ID	Project Name	Project Type	Additional Issuance Certifications	Origination Program	Project Site State/Province	Project Country/Area	Account Holder	Retirement Reason	Beneficial Owner	Retirement Reason Details	Date of Retirement
01/03/2019	30/09/2020	11090-279847352-279857351-VCS-VCU-1491-VER-BR-1-1903-01032019-30092020-0	10000	VCU	1903	VTRM Renewable Energy 2	Energy industries (renewable/non-renewable sources)			Piaui	Brazil (BR)	Concord Resources Limited	Retirement for Person or Organization	MKS PAMP SA	These offsets are being retired on behalf of MKS PAMP SA as part of their requirements for Carbon Neutrality certification given by the Carbon Trust	05/07/2022

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https://registry.verra.org/mymodule/rpt/CertificateInfo.asp?b=1&rhid=166415

UNIT INFORMATION REPORT

UNIT INFORMATION

Verification Period	01/03/2019-30/09/2020
Vintage Period	01/03/2019-30/09/2020
Originating Program	NA
Serial Number	11090-279847352-279857351-VCS-VCU-1491-VER-BR-1-1903-01032019-30092020-0
Additional Certification(s)	NA
Unit Type	VCU
Quantity of Units	10,000
Serial Number Help	

ORIGINATING PROJECT INFORMATION

Project ID	1903
Project Name	VTRM Renewable Energy 2
Primary Project Type	Energy industries (renewable/non-renewable sources)
Additional Project Type(s)	NA
Project Site State/Province	Piaui
Project Site Country/Area	Brazil (BR)
Project VVB	Earthood Services Private Limited
Crediting Period Start Date	02/08/2017
Crediting Period End Date	01/08/2027
Project Document	View

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RETIRED UNITS

From Vintage	To Vintage	Serial Number	Quantity of Units	Unit Type	Project ID	Project Name	Project Type	Additional Issuance Certifications	Origination Program	Project Site State/Province	Project Country/Area	Account Holder	Retirement Reason	Beneficial Owner	Retirement Reason Details	Date of Retirement
01/01/2019	31/12/2019	10356-206078730-206085829-VCS-VCU-291-VER-CI-1-1522-01012019-31122019-0	7100	VCU	1522	Soubre Hydropower Project	Energy industries (renewable/non-renewable sources)			San Pedro Province	Cote D'Ivoire (CI)	Concord Resources Limited	Retirement for Person or Organization	MKS PAMP SA	These offsets are being retired on behalf of MKS PAMP SA as part of their requirements for Carbon Neutrality certification given by the Carbon Trust	05/07/2022

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https://registry.verra.org/mymodule/rpt/CertificateInfo.asp?b=1&rhid=132032

UNIT INFORMATION REPORT

UNIT INFORMATION

Verification Period	25/05/2017-30/06/2020
Vintage Period	01/01/2019-31/12/2019
Originating Program	NA
Serial Number	10356-206078730-206085829-VCS-VCU-291-VER-CI-1-1522-01012019-31122019-0
Additional Certification(s)	NA
Unit Type	VCU
Quantity of Units	7,100

Serial Number Help

ORIGINATING PROJECT INFORMATION

Project ID	1522
Project Name	Soubre Hydropower Project
Primary Project Type	Energy industries (renewable/non-renewable sources)
Additional Project Type(s)	NA
Project Site State/Province	San Pedro Province
Project Site Country/Area	Cote D'Ivoire (CI)
Project VVB	Tuev Nord Cert GmbH (Tuev Nord)
Crediting Period Start Date	25/05/2017
Crediting Period End Date	24/05/2027
Project Document	View

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Annex 4: Independent third-party assurance

CARBON TRUST

Carbon Neutral Label

MKS PAMP

has achieved carbon neutrality and is committed to on-going carbon neutrality of the total carbon footprint of its

Gold 999.9 and 995+ Carbon Neutral Kilobars & Large Cast Bars

Carbon Trust Assurance has certified that this project has met all of the requirements for using the Carbon Trust Carbon Neutral Label.

CARBON TRUST CERTIFIED — The carbon footprint of this product has been certified carbon neutral

A full description of the scope of certification and a detailed list of certified results can be found in the associated Certification Letter CERT-13314.

Awarded: 1st July 2022 Valid Until: 30th June 2023

for and on behalf of Carbon Trust Assurance Ltd,

Hugh Jones,
Managing Director

Annex 5: Additional supporting information for interested parties

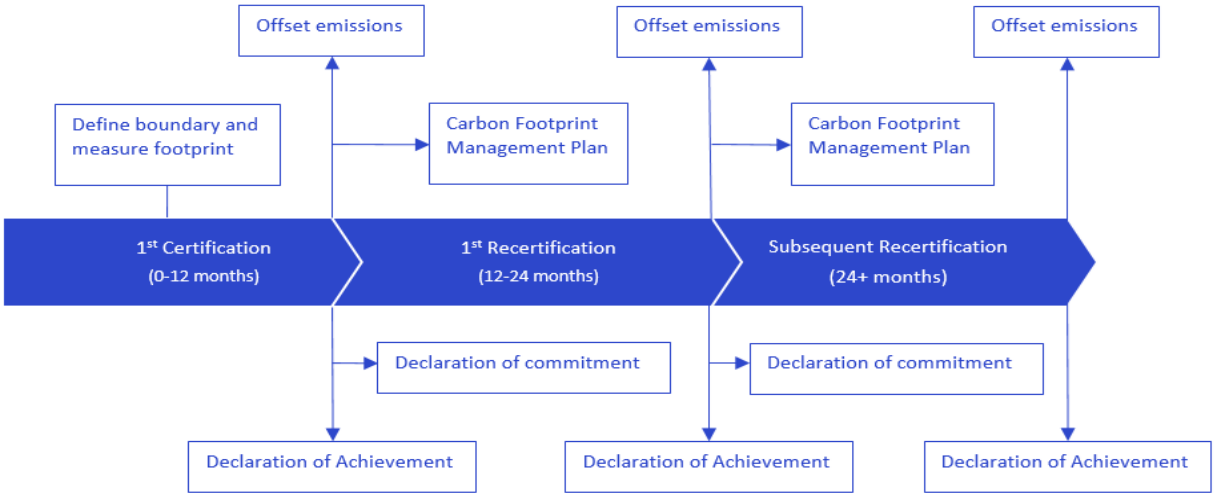

Figure 1. PAS 2060 certification process

Source: Carbon Trust. Adapted from "BSI - PAS 2060:2014: *Specification for the demonstration of carbon neutrality: Figure 1 – Illustration of the cyclical process for demonstrating carbon neutrality, taking into account permitted baseline period exceptions*". [Simplified version]

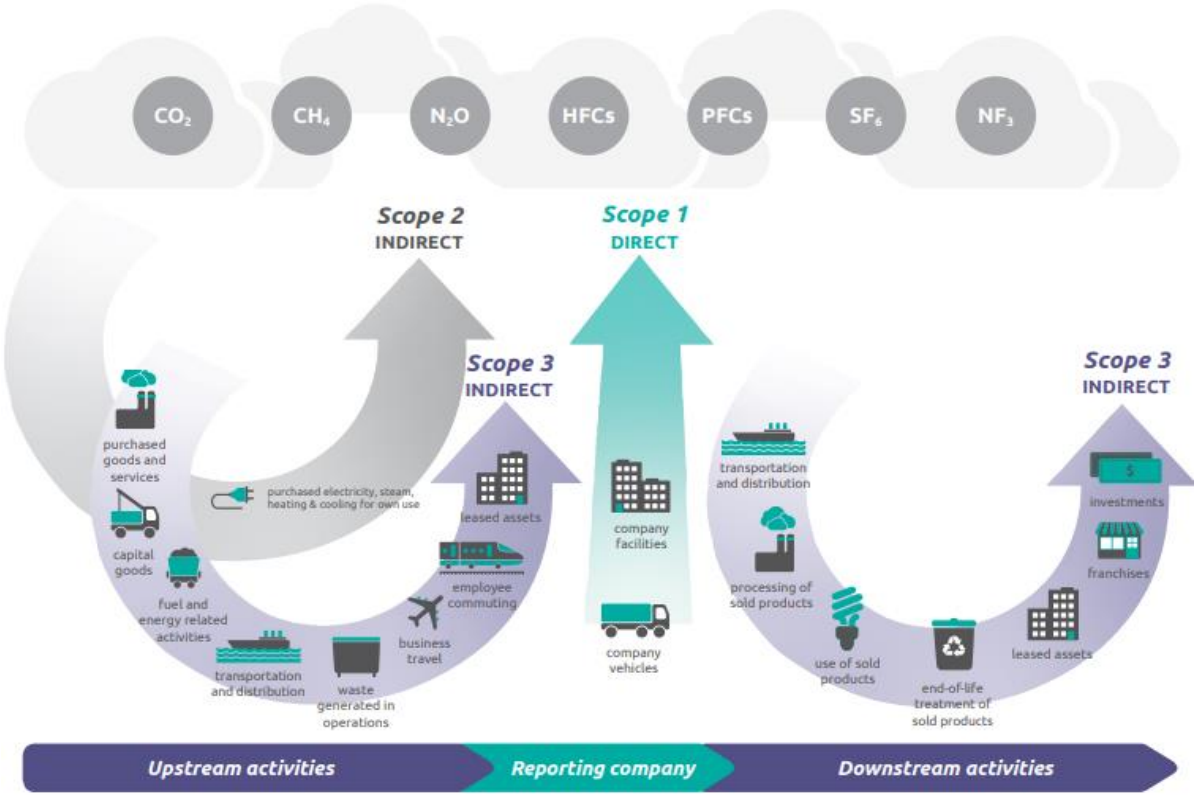

Figure 2. Organisational carbon footprinting

Source: Greenhouse Gas Protocol: http://ghgprotocol.org/