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GUIDANCE | COMPLIANCE | TRUST

Overview of ISO 14064-1:2018

HEALTH & SAFETY MANAGEMENT

QUALITY MANAGEMENT

ACCESSIBILITY

ENVIRONMENTAL MANAGEMENT

ENERGY MANAGEMENT



- Founded in 1994, Antaris are leading experts in management systems, risk assessment, health, safety and environmental legislation and legal compliance assessments
- Antaris offer both consulting services and training services in key compliance areas
 - ISO 9001 Quality management system
 - ISO 14001 Environmental management system
 - ISO 45001 Occupational Health & Safety management system
 - ISO 50001 Energy management system
 - ISO 27001 Information security management system
 - Sustainability
 - IE License



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ISO 14064-1:2018

- Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
- Released in December 2018 by ISO TC 207/SC 7 (Greenhouse gas management and related activities)
- Replaces earlier version released in March 2006
- Contributes to the Sustainable Development Goals



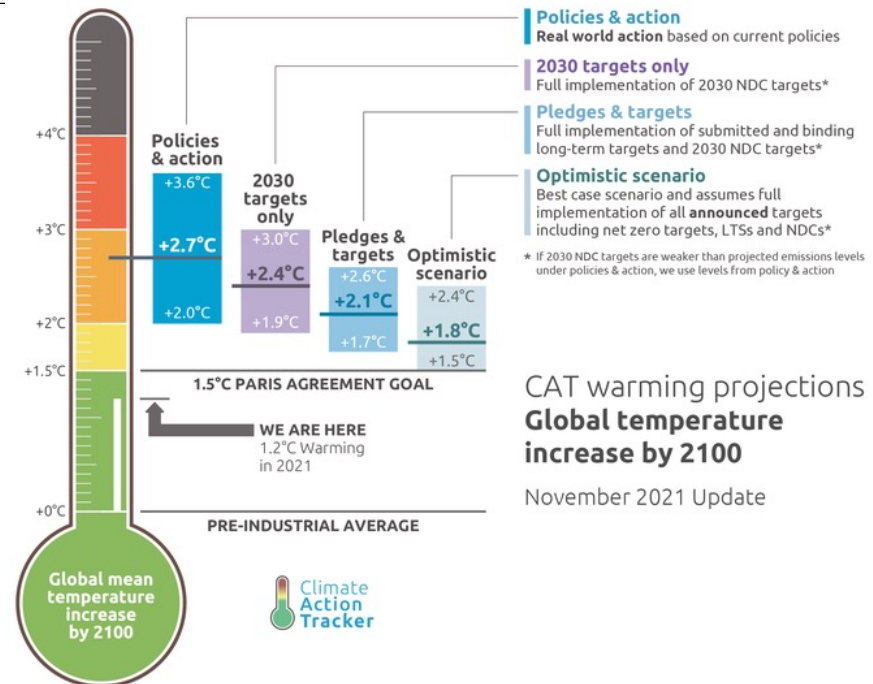
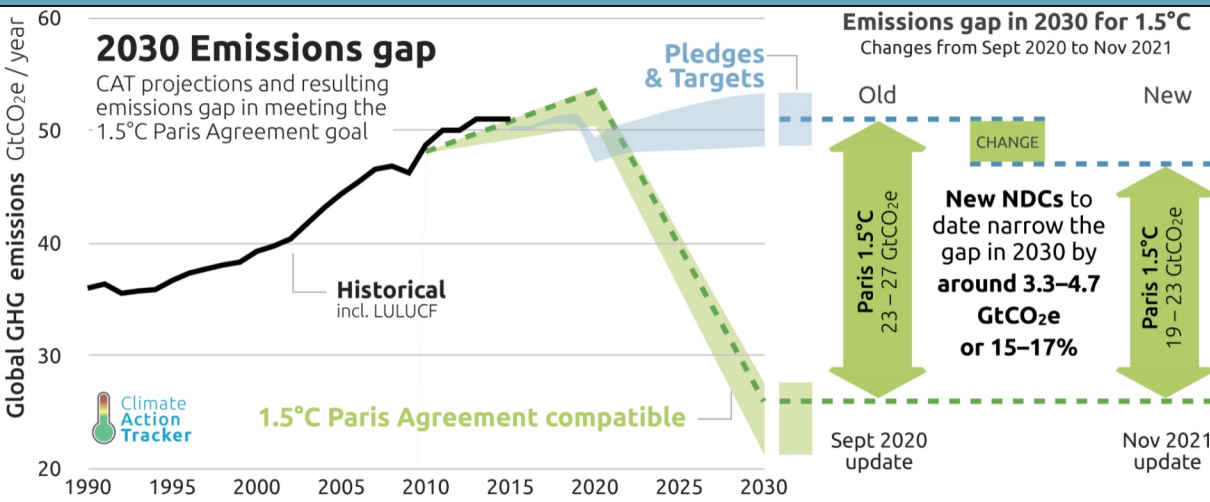
Alignment with UN SDGs



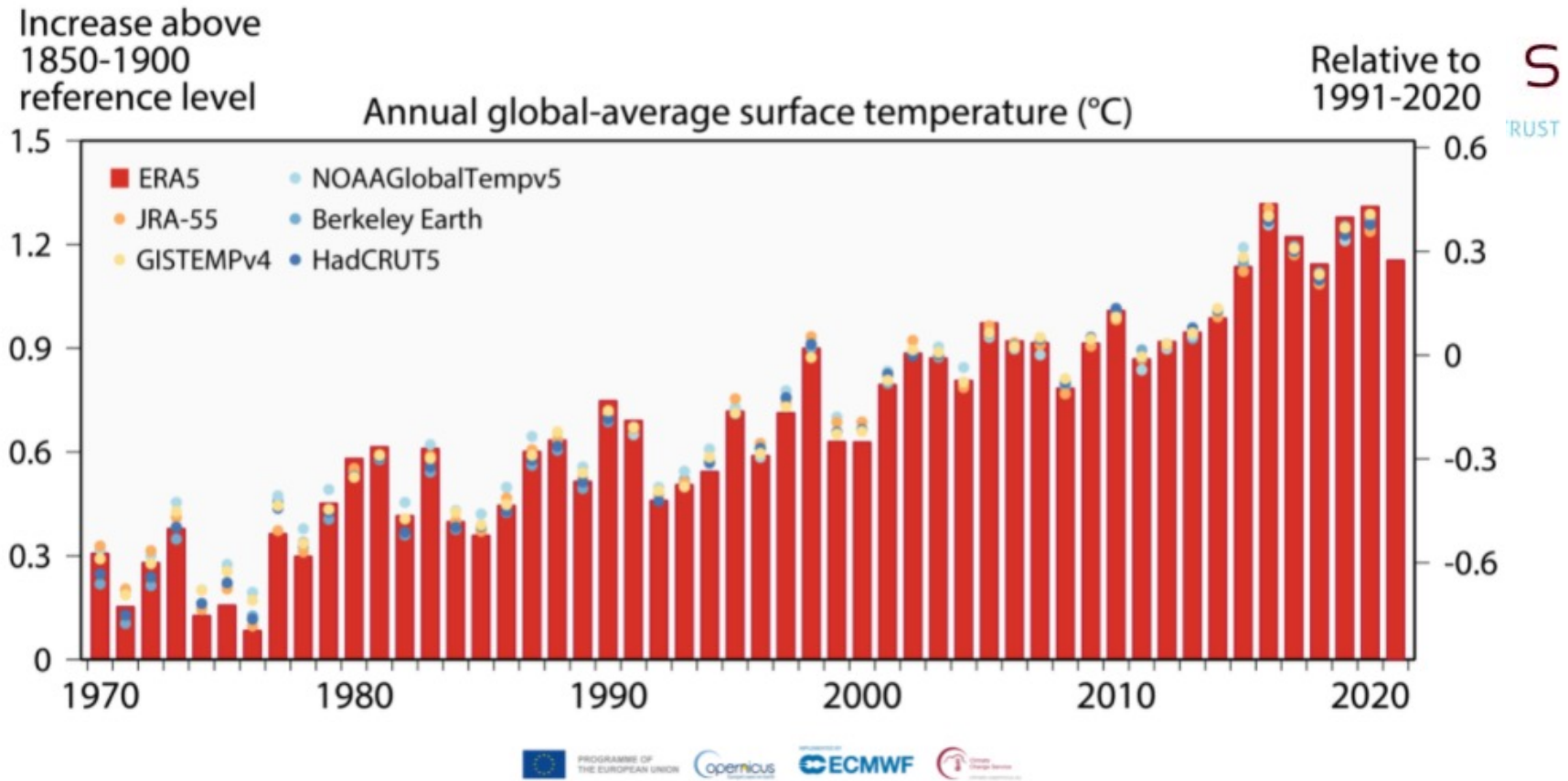
SUSTAINABLE DEVELOPMENT GOALS



Drivers for Change – Need for Voluntary Action



Drivers for Change



Annual averages of global air temperature at a height of two metres estimated change since the pre-industrial period (left-hand axis) and relative to 1991-2020 (right-hand axis) according to different datasets: Red bars: ERA5 (ECMWF Copernicus Climate Change Service, C3S); Dots: GISTEMPv4 (NASA); HadCRUT5 (Met Office Hadley Centre); NOAA GlobalTempv5 (NOAA), JRA-55 (JMA); and Berkeley Earth. Credit: Copernicus Climate Change Service/ECMWF

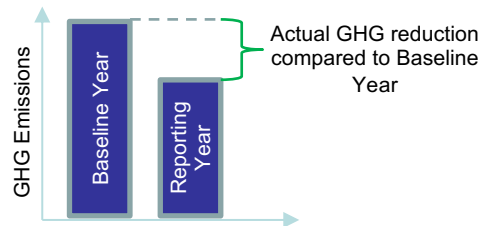


ISO 14064-1 Organisational Level

Combines emissions data across an organisation's Operation

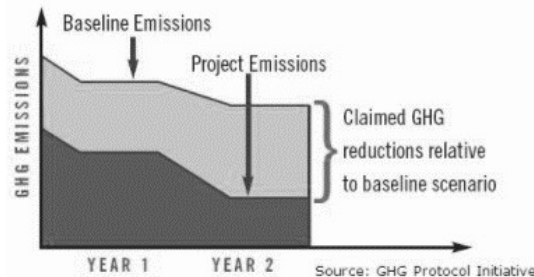
Looks back over emissions that have occurred

Emissions data in reporting year compared with base year



ISO 14064-2 Project Level

- Quantifies avoided GHG emissions by a project in the future
- Impact is estimated through baseline comparison (compared against What-If scenario)



ISO 14067 Product Level

- Product Life Cycle Assessment (LCA)
- Assesses past and future emissions data across all stages of product or service
- Emissions data compared with prior base year



14064 Family of Standards

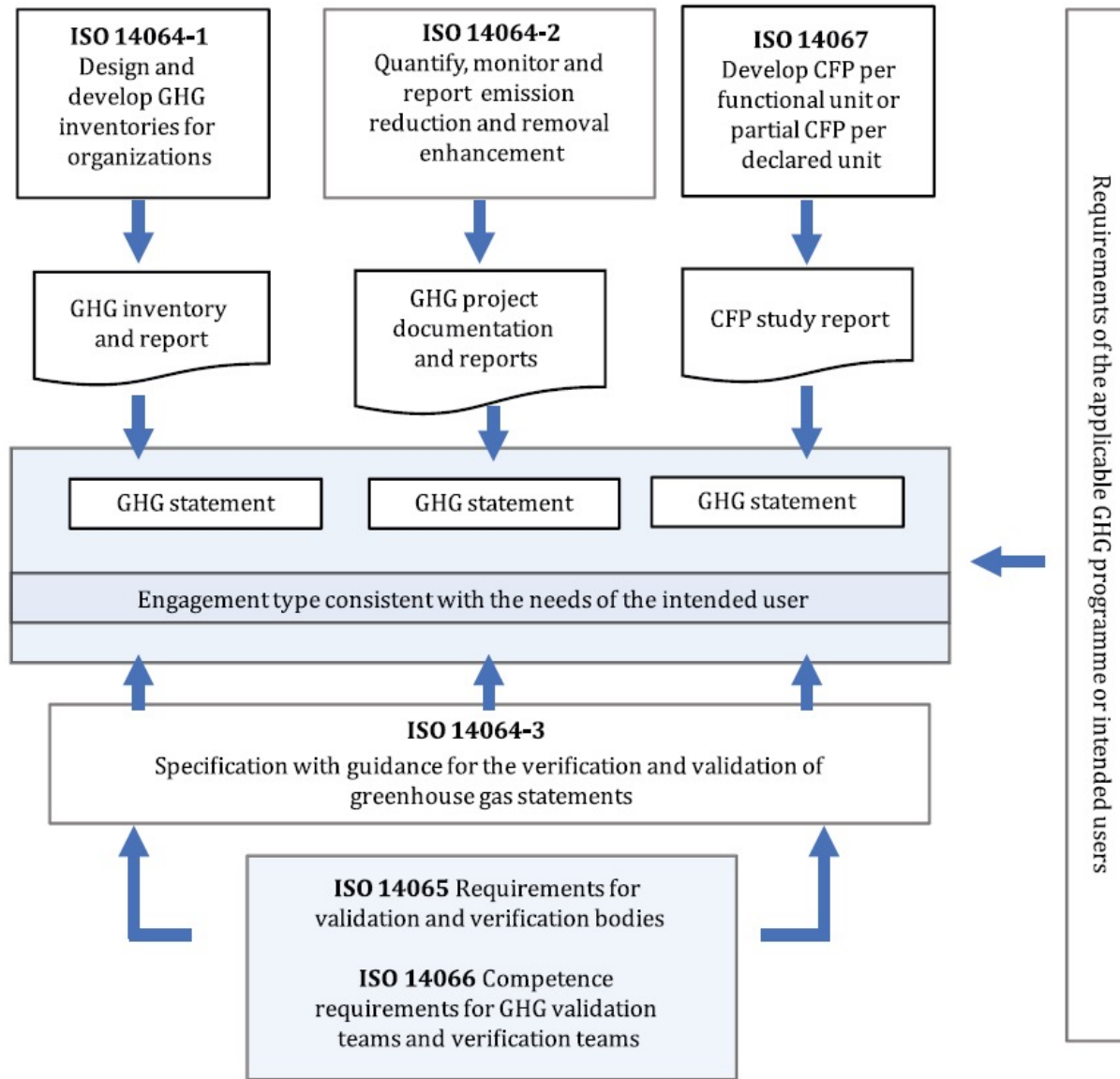
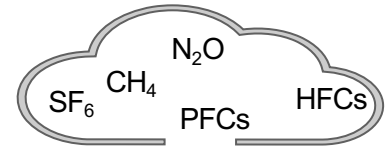


Figure 1 — Relationship among the ISO 14060 family of GHG standards



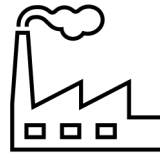
GHG

Gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds



GHG Source

process that releases a GHG into the atmosphere



GHG Reservoirs

component, other than the atmosphere, that has the capacity to accumulate GHGs and to store and release them



GHG Emission

release of a GHG into the atmosphere



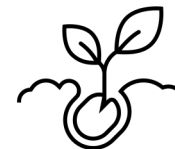
GHG Sink

process that removes a GHG from the atmosphere

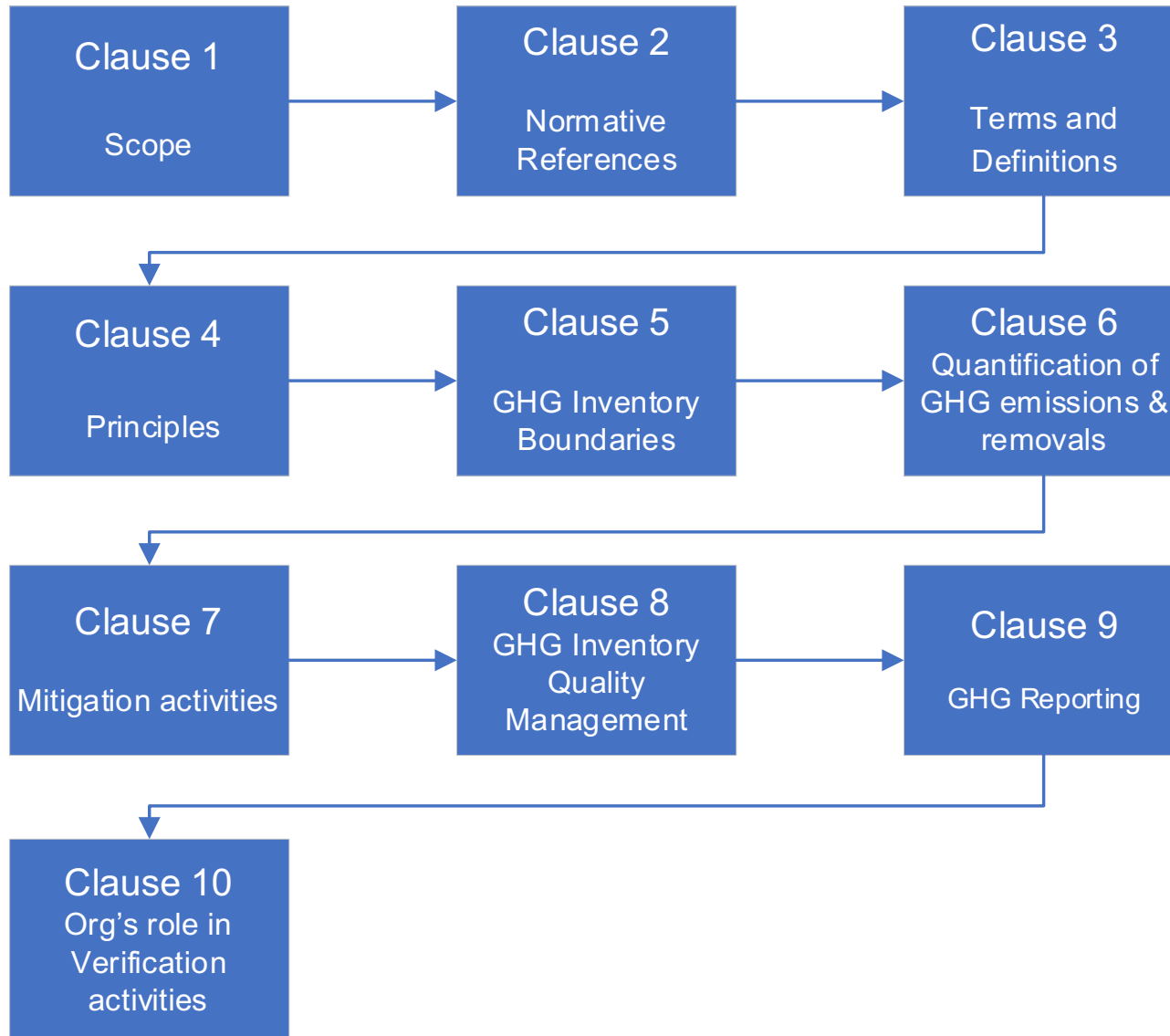


GHG Removal

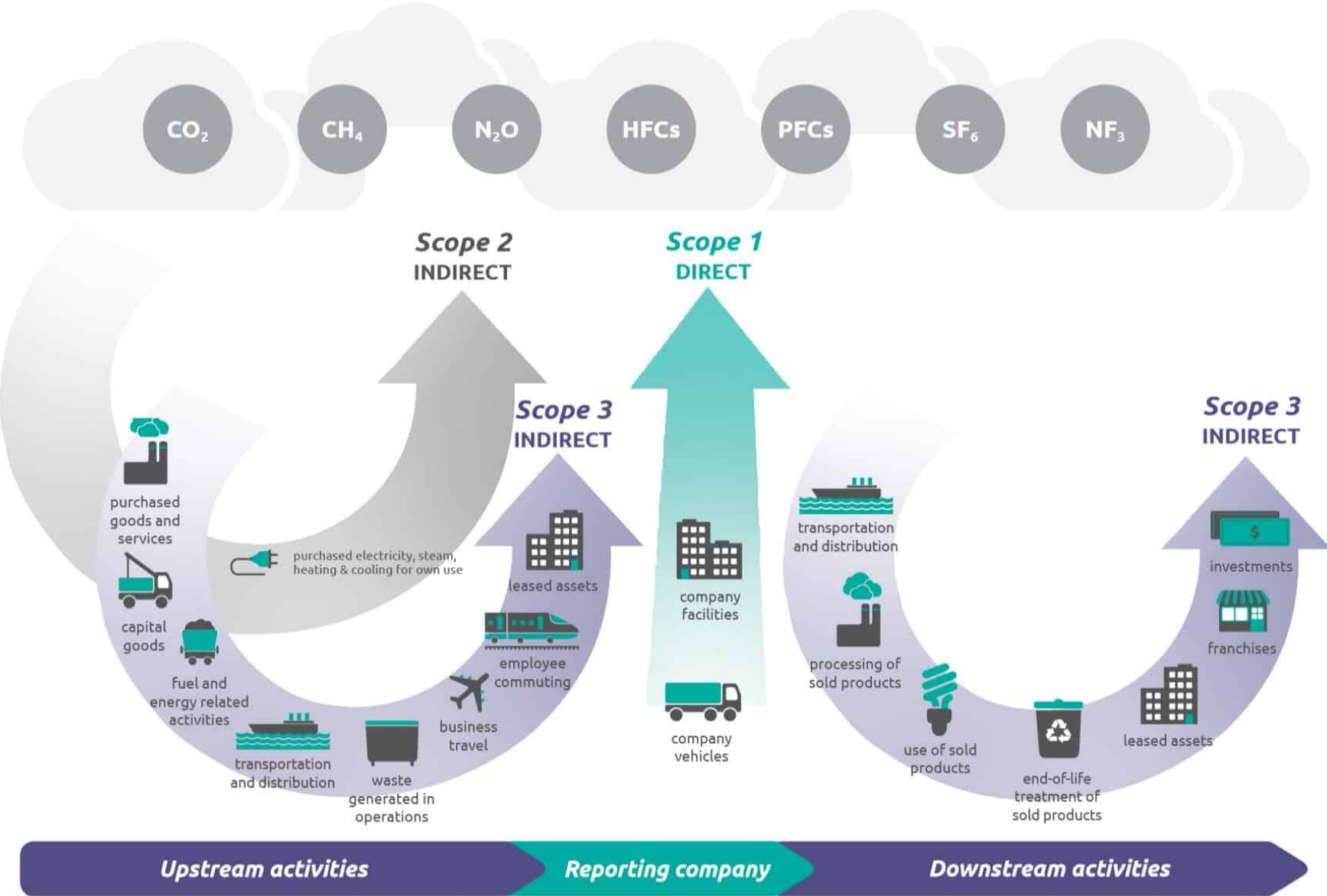
withdrawal of a GHG from the atmosphere by GHG sinks



Structure of Standard (ISO 14064-1)



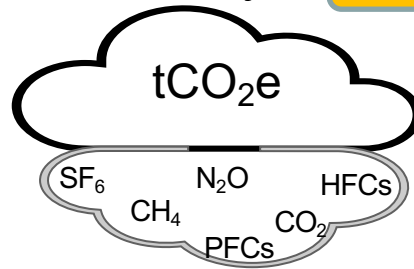
Categorisation of Emissions



Carbon Footprinting

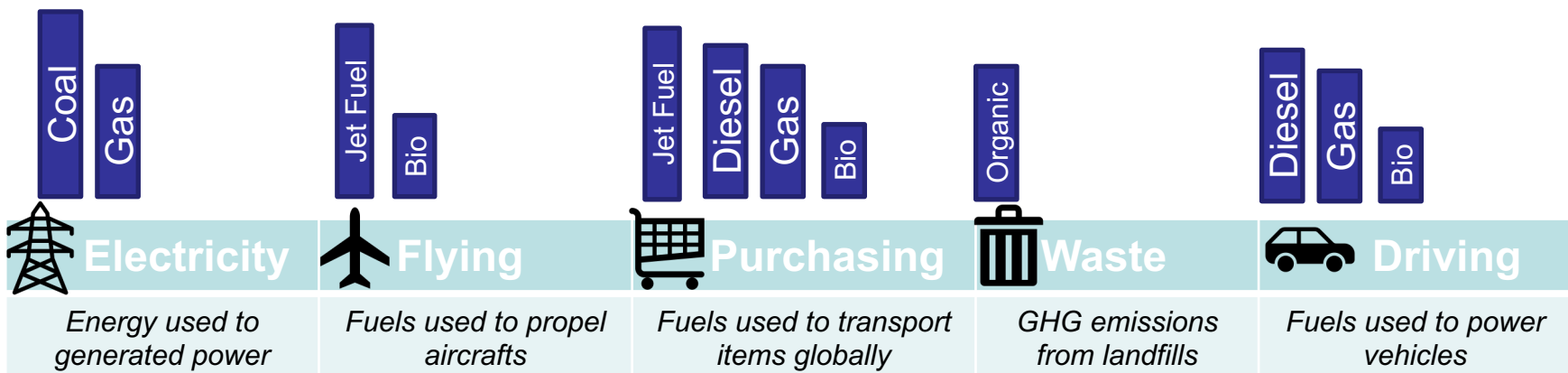


- “The total amount of greenhouse gases emitted to the atmosphere by an activity or organisation over time, expressed in tonnes of carbon equivalent (tCO₂e)”
- A carbon footprint is calculated by: **Energy Used X Emissions Factor**



Each fuel type emits different amounts of CO₂ into the atmosphere per each unit combusted known as its energy intensity (gCO₂/kWh or gCO₂/L)

Each GHG has a varying ability to trap heat in the earth's atmosphere over a period of time known as its Global Warming Potential (GWP_{CO₂}= 1; GWP_{N₂O}=265-298 (over 100 years))

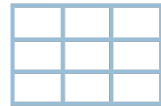


Typical GHG Accounting Process



Define Scope

Set boundaries and select approach



Collect Data



GHG Accounting



GHG Final Report

Organisational Carbon Footprint

Consolidated GHG Statement Content 1/2



Recommended format for consolidated statement of GHG emissions (values shown for illustration only)

REPORTING COMPANY		NAME	CONTACT		To		MM/DD/YYYY				
Person or Entity responsible for the report		NAME	CONTACT		To		MM/DD/YYYY				
Reporting period covered		From	MM/DD/YYYY	To	MM/DD/YYYY						
Organizational boundaries		Attached document									
Reporting boundaries		Attached document									
EMISSIONS	Notes	20xx								Quantitative uncertainty	Qualitative uncertainty
		CO ₂ e	Carbon dioxide (CO ₂)	Methane (CH ₄)	Nitrous oxide (N ₂ O)	Hydrofluoro-carbons (weighted average) (HFCs)	Perfluoro-carbons (weighted average) (PFCs)	Sulfur hexafluoride (SF ₆)	Nitrogen trifluoride (NF ₃)		
		TOTAL (Tonnes p.a.)	1	30	265	5 000	4 000	23 500	16 100		
		GWP									
1	Category 1 : Direct GHG emissions and removals in tonnes CO ₂ e (1)	83 205	83 050	149	6	0	0	0	0		
1.1	Direct emissions from stationary combustion	2 050	2 050	0	0	0	0	0	0	7%	
1.2	Direct emissions from mobile combustion	81 005	81 000	5	0	0	0	0	0	7%	
1.3	Direct process emissions and removals arise from industrial processes	0	0	0	0	0	0	0	0		
1.4	Direct fugitive emissions arise from the release of greenhouse gases in anthropogenic systems	0	0	0	0	0	0	0	0		
1.5	Direct emissions and removals from Land Use, Land Use Change and Forestry	0	0	0	0	0	0	0	0		
Direct emissions in tonnes of CO ₂ from biomass		718	718								
	Indirect Emissions in tonnes CO ₂ e (2)	S/NS[*]	4 157 450								
2	Category 2 : Indirect GHG emissions from imported energy (3)	70 000									
2.1	Indirect emissions from imported electricity	60 000								15%	
2.2	Indirect emissions from imported energy	10 000								10%	
3	Category 3 : Indirect GHG emissions from transportation	614 950									
3.1	Emissions from Upstream transport and distribution for goods	153 200									C
3.2	Emissions from Downstream transport and distribution for goods	320 000									B
3.3	Emissions from Employee commuting includes emissions	12 200									C
3.4	Emissions from Client and visitor transport	NS									
3.5	Emissions from Business travels	129 550									B

Consolidated GHG Statement Content 2/2



4	Category 4: Indirect GHG emissions from products used by organization		3 372 500							
4.1	Emissions from Purchased goods		3 202 500							D
4.2	Emissions from Capital goods		125 000							D
4.3	Emissions from the disposal of solid and liquid waste		45 000							D
4.4	Emissions from the use of assets	NS								
4.5	Emissions from the use of services that are not described in the above subcategories (consulting, cleaning, maintenance, mail delivery, bank, etc.)	NS								
5	Category 5: Indirect GHG emissions associated with the use of products from the organization		100 000							
6.1	Emissions or removals from the use stage of the product		100 000							B
6.2	Emissions from downstream leased assets	NS								
6.3	Emissions from end of life stage of the product	NS								
6.4	Emissions from investments	NS								
6	Category 6: Indirect GHG emissions from other sources	NS								

REMOVALS (4)

Direct removals in tonnes CO ₂ e	100	100	0	0	0	0	0	0	0	C
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STORAGE (5), (6), (7)

Total storage as of year end in tonnes CO ₂ e	10	10	0	0	0	0	0	0	0	C
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CARBON FINANCIAL INSTRUMENTS (8)

Total Renewable Electricity purchased in kWh	575 000	kWh	
Renewable Electricity purchased in kWh with contractual instruments compliant with ISO 14064-1 Annex E	150 000	kWh	
Renewable Electricity purchased in kWh with contractual instruments compliant with ISO 14064-1 Annex E	45 000	kWh	
Renewable Electricity purchased in kWh with contractual instruments compliant with ISO 14064-1 Annex E	375 000	180 000	kWh
Renewable Electricity purchased in kWh with contractual instruments <u>not</u> compliant with ISO 14064-1 Annex E criteria	200 000	kWh	
Offsets from GHG Scheme AA in tonnes CO ₂ e	95 000	CO ₂ e	
Credits from GHG Scheme BB in tonnes CO ₂ e	125 000	CO ₂ e	

Market based emission factors compliant with ISO 14064-1 Annex E		
13 gCO ₂ e/kWh	1,9 tCO ₂ e	See attached document
6 gCO ₂ e/kWh	0,2 tCO ₂ e	See attached document
15 gCO ₂ e/kWh	2,7 tCO ₂ e	See attached document



Organisation Description	Person Responsible
Reporting Period	Organisational Boundaries
Direct GHG emissions (each GHG)	Energy Indirect GHG emissions
Explanation of Exclusions of any GHG sources or sinks	Base Year selected and Base Year GHG inventory
Quantification Approach	GHG emission (or removal) factors and GWP values
Uncertainty assessment	GHG statement referring to ISO 14064
Statement outlines if report is verified including type of verification and level of assurance achieved	

Benefits of its Application and Use



- Provide clarity/transparency to investors
- Reduce the impact of increasing carbon taxes on the organisation
- Identify emission reduction opportunities and increasing profitability by reducing energy consumption.
Less CO₂ = Less Costs
- Helps to win business
- Enhanced reputation and brand value (voluntary statements)
- For Participants in the EU-ETS, GHG savings/credits can be sold to participants who exceed their own emissions cap
- Allows organisations to make scientifically supported (Credible) statements about their sustainability performance





- Avoid double counting of emissions
- Carefully select the base year
- Focus on significant sources of emissions (hotspots)
- Establish a Data Collection Plan
- Where key data is missing, document an appropriate estimation method.
- Retain the data and sources used in base year quantification for use/reference in future years
- Where reporting on Scope 3 emissions, check what data your suppliers have on file.





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