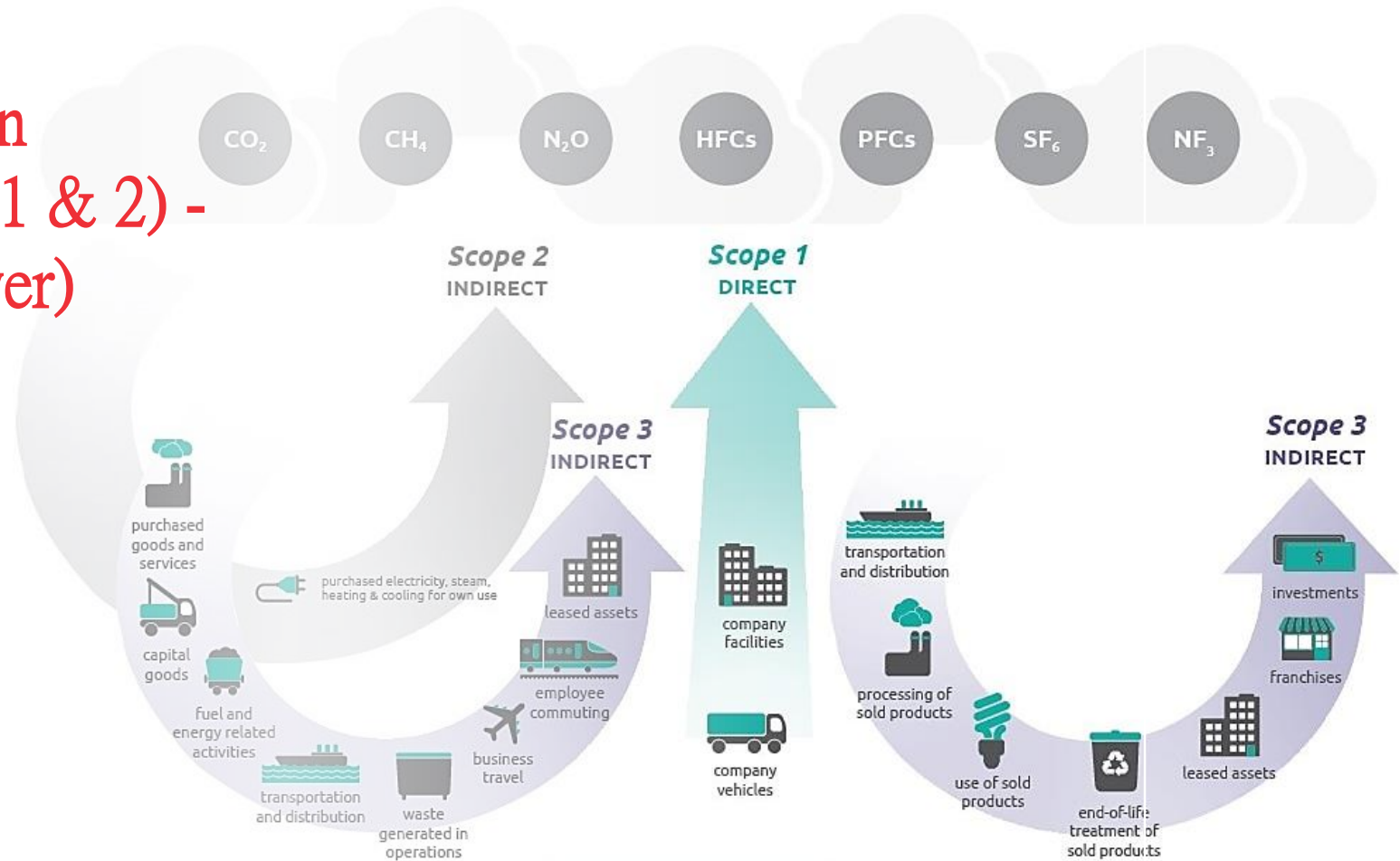


Deep Dive into CASG SME Questionnaire

**Practical Guide for SMEs on
Carbon Accounting (Scope 1 & 2) -
Calculation Exercise (Answer)**



Answers

Scope 1: Towngas

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8
A	B	C	D	E	F	G	H
Source description with location (e.g., boilers, furnaces, ovens, and emergency electricity generator etc.)	Amount of fuel used (Unit)	CO ₂ emission factor*	CO ₂ emissions in tonnes of CO ₂ equivalent ((B×C)/1000)	CH ₄ emission factor*	CH ₄ emissions in tonnes of CO ₂ equivalent ((B×E)/(1000×1000)×28)	N ₂ O emission factor*	N ₂ O emissions in tonnes of CO ₂ equivalent ((B×G)/(1000×1000)×265)
Office kitchen	1,750	2.549	4.46075	0.0446	0.00219	0.0099	0.00459
Total: 4.46753 Tonnes CO ₂ e	-	-	4.46075	-	0.00219	-	0.00459

Scope 1: Air conditioning

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
A	B	C	D	E	F	G
Type of refrigerant	Amount of HFC/PFC at the beginning of the reporting period (kg)	Amount of HFC/PFC purchased during the reporting period (kg)	Amount of HFC/PFC disposed (through environmentally responsible means) during the reporting period (kg)	Amount of HFC/PFC at the end of the reporting period (kg)	GWP of refrigerant*	HFC/PFC emissions in tonnes of CO ₂ equivalent ((B+C-D-E)×F/1000)
R412A	80	180	60	90	350	38.50
Total	-	-	-	-	-	38.50 Tonnes CO₂e

Answers

Scope 1: In-house vehicle fleet

Step 1	Step 2		Step 3	Step 4	Step 5	Step 6	Step 7	Step 8
A	B	C	D	E	F	G	H	I
Source description (by different vehicle and fuel types)	Fuel Information		CO ₂ emission factor*	CO ₂ emissions in tonnes of CO ₂ equivalent ((B×D)/1000)	CH ₄ emission factor*	CH ₄ emissions in tonnes of CO ₂ equivalent ((B×F)/(1000×1000)×28)	N ₂ O emission factor*	N ₂ O emissions in tonnes of CO ₂ equivalent ((B×H)/(1000×1000)×26 5)
	Amount of fuel used (litres)	Fuel Type						
Passenger car	2,000	Unleaded	2.360	4.720	0.253	0.014	1.105	0.586
Heavy goods vehicle	6,000	Diesel	2.614	15.684	0.145	0.024	0.072	0.114
Total: 21.142 Tonnes CO ₂ e	-		-	20.404	-	0.038	-	0.700

Answers

Scope 2: Electricity

Step 1	Step 2	Step 3	Step 4
A	B	C	D
Facility/source description (i.e., area/facilities the electricity bill is reporting)	Amount of electricity purchased(kwh)	Emission factor (kg/ CO ₂ e/ kWh)	Indirect GHG emissions in tonnes of CO ₂ equivalent(BxC/1000)
Factory electricity	6,000,000	0.39	2,340
Total	-	-	2,340 Tonnes CO₂e

Scope 2: Towngas

Step 1	Step 2	Step 3	Step 4
A	B	C	D
Facility/source description (i.e., area/facilities the Towngas bill is reporting)	Amount of Towngas purchased(Unit)	Emission factor (kg/Unit)	Indirect GHG emissions in tonnes of CO ₂ equivalent(BxC/1000)
Office kitchen	1,750	0.576	1.008
Total	-	-	1.008 Tonnes CO₂e