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Herman is experienced in management planning and decision-making processes amidst a climate of competition and risk. He provides advice regarding economic analysis, strategic planning, negotiation strategies, contract evaluation, and conflict resolution, and he coordinates large, high-stake projects in the Caspian and Middle East regions. He is an expert in the evaluation of reserves and future income under a variety of fiscal terms and model contracts. Herman has also implemented Corporate Reserves Management Systems for several companies in his career.

Prior to joining Ryder Scott, he spent 10 years with Exxon Mobil. Herman holds a BS degree and an MS degree in Petroleum Engineering from the University of Tulsa. He is a licensed Professional Engineer in the state of Texas.

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**SEC PROPOSED
ENHANCEMENT AND STANDARDIZATION
OF
CLIMATE-RELATED DISCLOSURES**

By: Herman G. Acuña

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ACKNOWLEDGMENTS

I would like to thank the following individuals for their contributions to this presentation:

- Mr. Sandeep Khurana, P.E.
*Head Advisor Midstream and Upstream Integrated Services,
Vice President*
- Ms. Marylena Garcia, P.E.
Senior Vice President

SEC PROPOSED STANDARDIZED CLIMATE-RELATED DISCLOSURES

- Effective February 8, 2010, the SEC provided guidance regarding disclosure related to climate change.¹
- In May 2020, the SEC Investor Advisory Committee approved recommendations urging the Commission to begin updating reporting requirements for issuers to include decision-making material pertaining to environmental, social, and governance (ESG) factors.²
- A press release on March 3, 2021 announced the SEC Division of Examinations 2021 examination priorities with an enhanced focus on climate-related risks.³

Sources: ¹ <https://www.sec.gov/rules/interp/2010/33-9106.pdf>

² <https://www.sec.gov/news/public-statement/lee-climate-change-disclosures>

³ <https://www.sec.gov/news/press-release/2021-39>

SEC PROPOSED STANDARDIZED CLIMATE-RELATED DISCLOSURES

On March 21, 2022, the SEC proposed rules to enhance and standardize climate-related disclosures for investors.⁴

Comment period open for a maximum of 30 days after publication in the Federal Register or 60 days after the date of issuance and publication on sec.gov (May 20, 2022).

- Add 17 CFR 210.14-01 and 14-02 (Article 14 of Regulation S-X);
- Add 17 CFR 229.1500 through 1507 (subpart 1500 to 1507 Regulation S-K);
- Other amendments;
- Disclosure for the latest fiscal year and historical fiscal year(s) in financial filings – generally current along with 2 prior periods (3 years).

Source: ⁴ <https://www.sec.gov/news/press-release/2022-46>

PROPOSED DISCLOSURE REQUIREMENTS

Disclosure requirements can be broadly described by the following:

1. Disclosure of climate-related risks and opportunities that could materially impact business results.



2. Quantitative disclosure of greenhouse gas (GHG) emissions.

CO ₂ e emissions ('000 tonnes)	2010	2009	Adjusted base year	Target	Percentage change	
			2007	2012	2009/2010	2007/2010
Scope 1	432	521	645	364	-17%	-33%
Scope 2	1,293	1,386	1,494	1,038	-7%	-13%
Total Scope 1 and 2 emissions	1,725	1,907	2,139	1,402	-10%	-19%
Scope 3	7,245	7,320	8,001	6,101	-1%	-9%
Total emissions	8,970	9,227	10,140	7,503	-3%	-12%

Greenhouse gas emissions intensity (CO ₂ e '000 tonnes/Plp M revenue)	2010	2009	Adjusted base year 2007	Target 2012
Scope 1	0.100	0.157	0.229	0.057
Scope 2	0.299	0.418	0.531	0.162
Scope 3	1.675	2.208	2.841	0.953
Total	2.074	2.783	3.601	1.172

3. Corporate management systems and governance of climate-related risks and strategies.



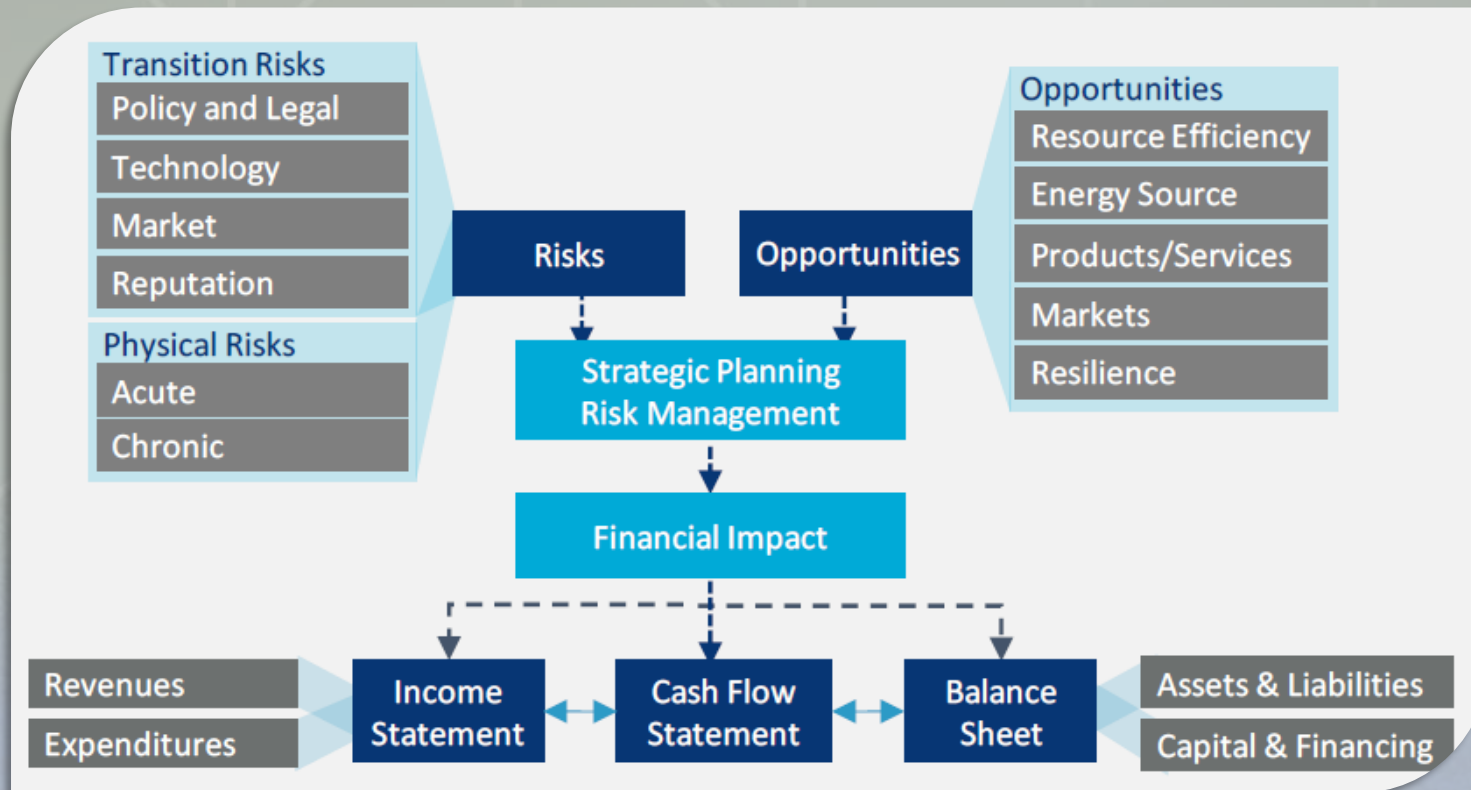
SEC PROPOSED STANDARDIZED CLIMATE-RELATED DISCLOSURES

- Proposed standardized climate-related disclosures are consistent, for the most part, with the following reporting frameworks:
 - The Task Force on Climate-Related Financial Disclosures (TCFD)
 - The Greenhouse Gas Protocol (GHG Protocol)
- The advantage of these frameworks is that they are already widely accepted and utilized for voluntary disclosures by leading companies.



WHAT IS THE TCFD?

Created by the Financial Stability Board (FSB) in 2015, the TCFD provides consistent disclosure guidelines of the financial impact of climate-related risks and opportunities in an organization rather than the impact of an organization to the environment.



Four widely adopted recommendations



WHAT IS THE GHG PROTOCOL?

- The GHG Protocol is a corporate accounting and reporting standard developed by:



WORLD
RESOURCES
INSTITUTE



World Business Council for
Sustainable Development

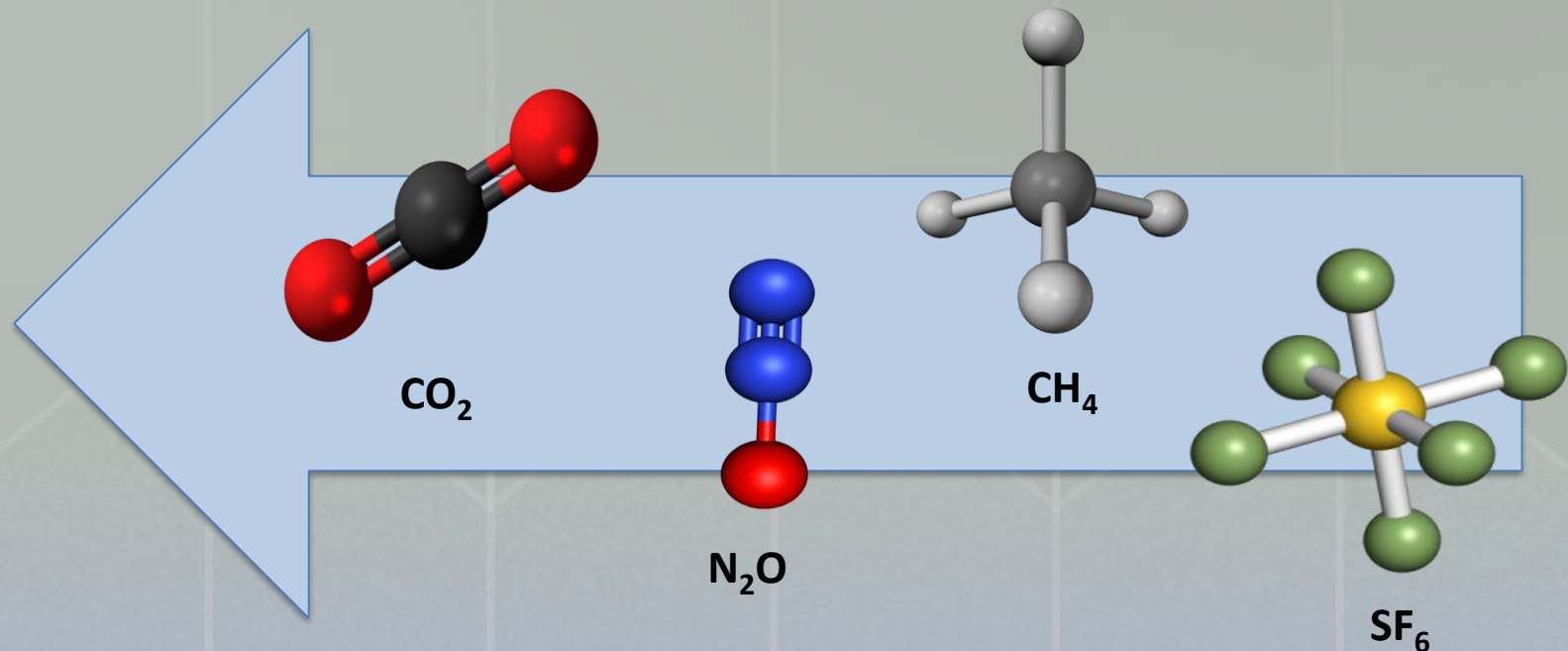
- Multi-stakeholder partnership of businesses, NGOs, Governments and others;
- Provides standards and tools to help companies measure, manage and report carbon emissions;
- Identifies, explains, and provides options for greenhouse gas inventory best practices.

DISCLOSURE OF CLIMATE-RELATED RISKS AND OPPORTUNITIES

- Climate-related risks and opportunities that have or are likely to have a material impact on the business and financial statements.
 - Short-term, medium-term, and long-term as defined by the registrant
- How the climate related risks and opportunities have or are likely to affect the registrant's strategy, business model, and outlook, including:
 - Disclosure of carbon offsets and renewable energy credits,
 - Internal carbon pricing assumptions,
 - Scenario analysis.
- Registrant's climate-related targets, goals, and transition plan, if any.

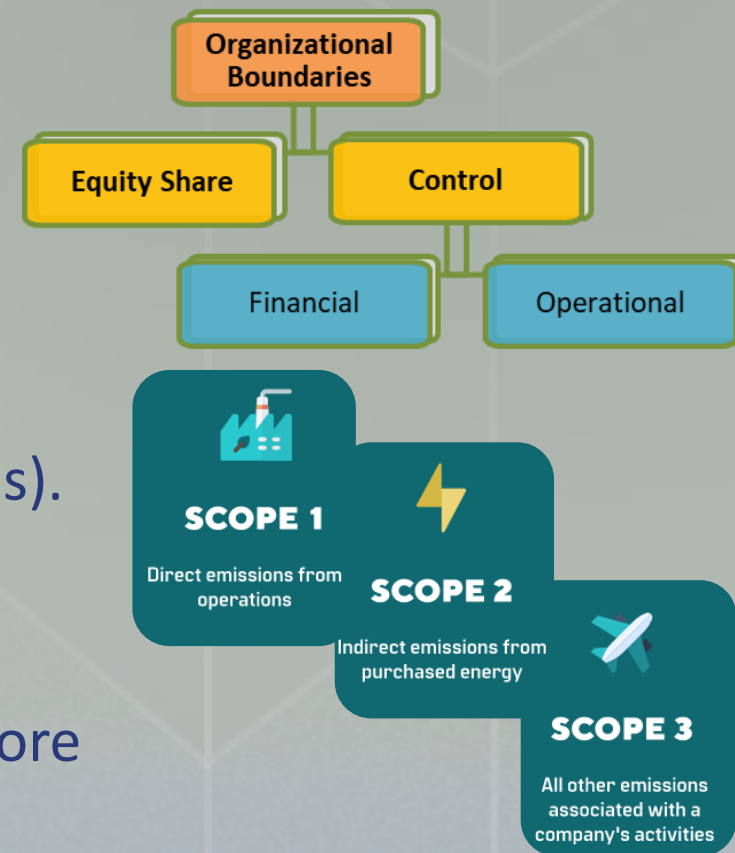
QUANTITATIVE DISCLOSURE OF GHG EMISSIONS

- GHGs are defined consistently with the GHG Protocol and widely accepted frameworks, such as the Kyoto Agreement, the UN Framework Convention on Climate Change, the U.S. Energy Information Administration, and the EPA:
 - Carbon dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous oxide (N₂O)
 - Nitrogen trifluoride (NF₃)
 - Hydrofluorocarbons (HFCs)
 - Perfluorocarbons (PFCs)
 - Sulfur hexafluoride (SF₆)
- Calculation methodology, including boundaries, approaches, and tools.



QUANTITATIVE DISCLOSURE OF GHG EMISSIONS

- Key elements of the quantitative disclosures include:
 - Organizational/reporting boundaries;
 - GHGs' sources, sinks and reservoirs (SSRs);
 - Equity Share vs. Operational and/or Financial Control Share
- Scope 1 GHG emissions (direct emission).
- Scope 2 GHG emissions (indirect emissions from energy purchases).
- Scope 3 GHG emissions (other indirect) if material or reduction goals (SEC recognizes this is a difficult task and SRC exempt).
- Emissions of individual GHGs and the aggregated GHG (CO₂e) before offsets.
- Absolute (total) terms and terms of carbon intensity (Mtons /unit of total revenue and production) based on Scopes 1 and 2 and Scope 3 separately.



IDENTIFYING EMISSIONS BY SCOPE

SCOPE

1



- Direct fuel use and combustion of fuel
Process emissions usually only in certain industry sectors:
 - oil,
 - gas,
 - aluminum,
 - cement, etc.
- Office based organizations will have no direct emissions, except for vehicles, AC

SCOPE

2



- Almost all businesses generate indirect emissions due to the purchase of electricity for use in their processes or services
 - Electricity
 - Heat
 - Steam
 - Cooling

(optional)

SCOPE

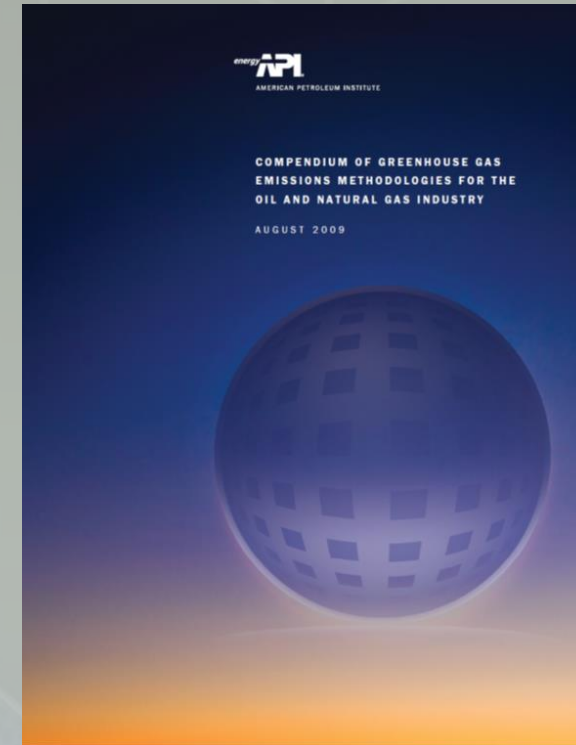
3



- Emission along the value chain upstream and downstream:
 - Extraction and production of raw materials;
 - Transportation;
 - Use of sold products and services. Etc.

CALCULATION APPROACHES

1. Direct Measurements: By monitoring GHG concentration and flow rate.
 - Continuous Emissions Monitoring System (CEMS)
2. Stoichiometric Calculations: Mass of emissions can be directly related to fuel burn.
 - Balancing of chemical equations or material balance
3. Estimate Emissions: Multiply activity data (ex: fuel use data) by documented emission factors.
 - Most common approach
 - Emission factors may be provided by professional organizations, governments or GHG Program



Companies should use the most accurate calculation available to them that is appropriate for their reporting.

GLOBAL WARMING POTENTIAL AND CO₂ EQUIVALENT

- Aggregation of GHG emissions based on their individual global warming potential⁵.

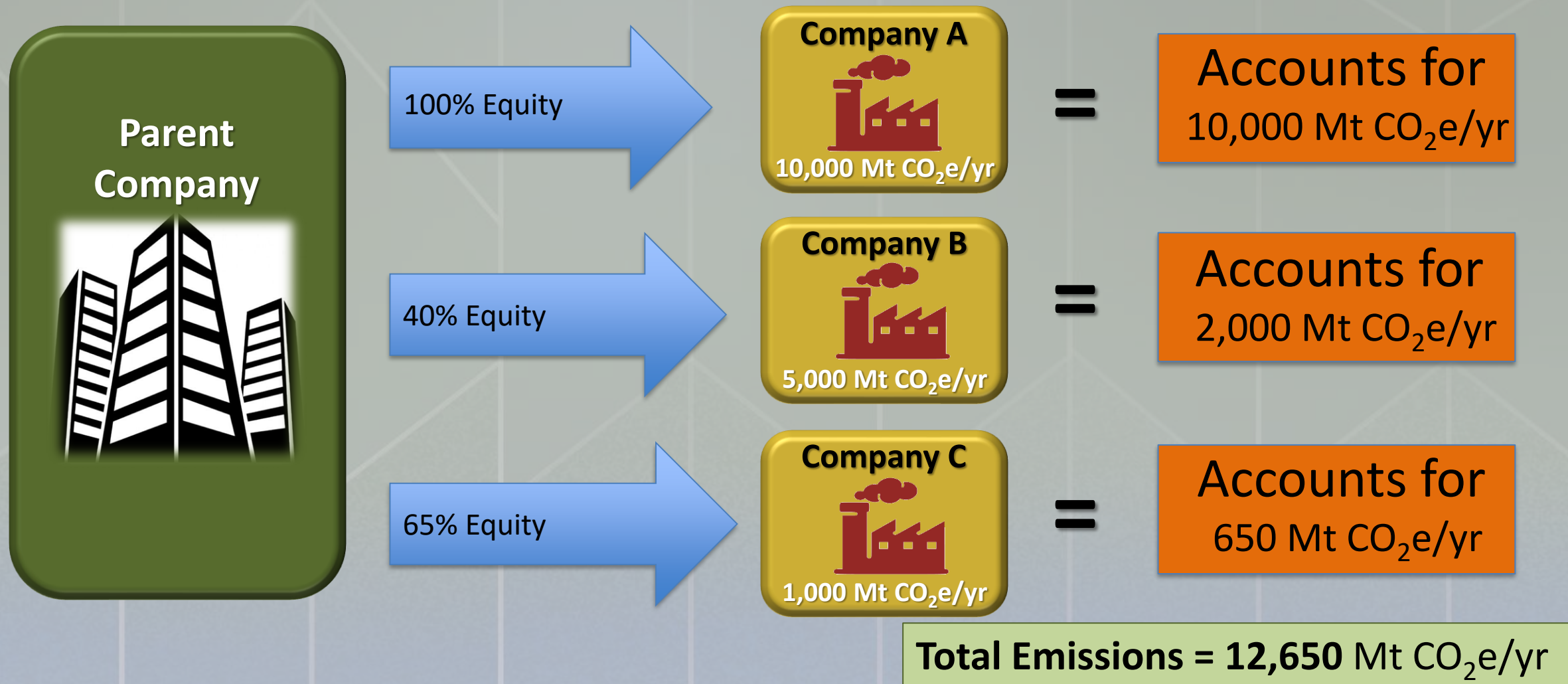
$$CO_2e = \sum_{i=1}^n GHG_i \times GWP_i \text{ (Eq. A-1)}$$

- Where:
 - CO₂e = Carbon dioxide equivalent, metric tons/year.
 - GHG_i = Mass emissions of each greenhouse gas, metric tons/year.
 - GWP_i = Global warming potential for each greenhouse gas
 - n = The number of greenhouse gases emitted.

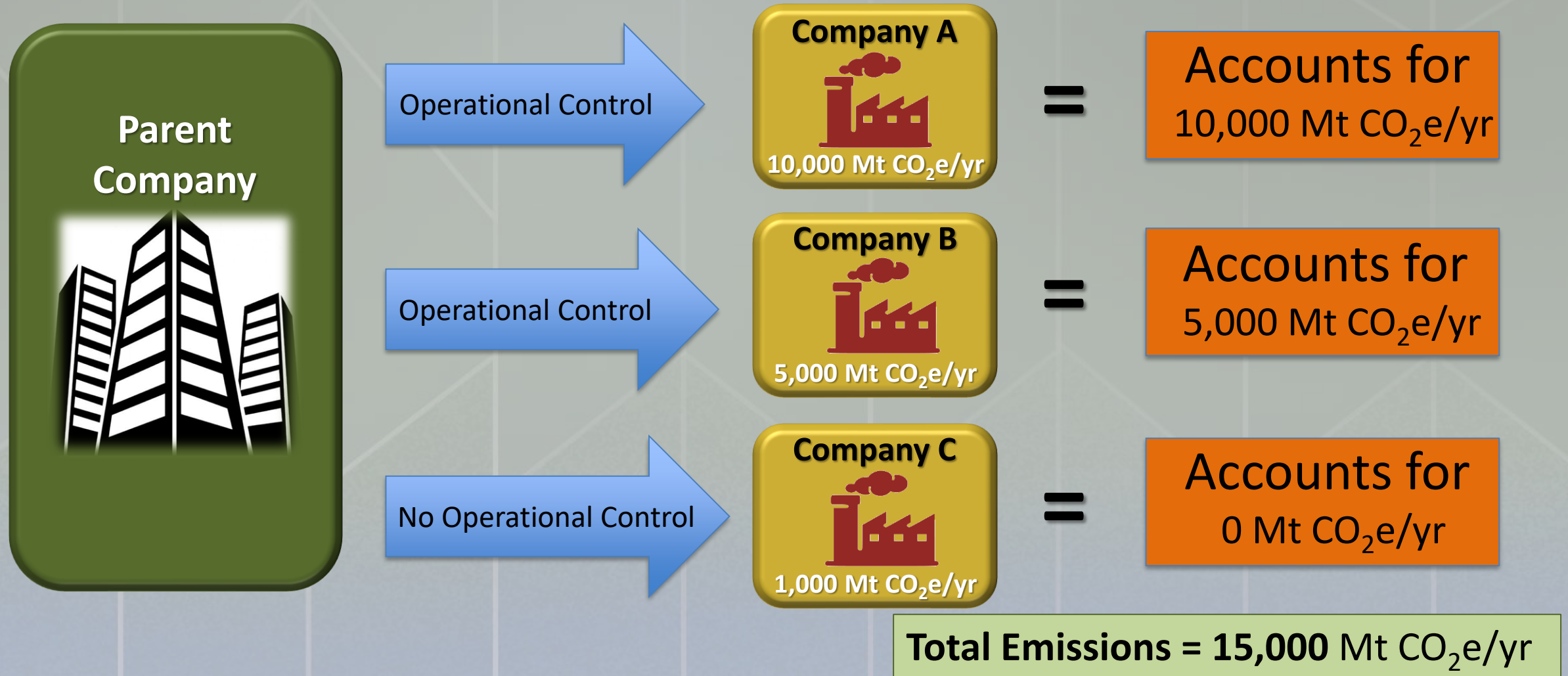
Species	1 MT CO ₂ e
CO ₂	1
CH ₄	25
N ₂ O	298
HCFCs	14,800
CF ₄	7,390
SF ₆	22,800

Source: ⁵ 40CFR 98

EQUITY SHARE DISCLOSURES

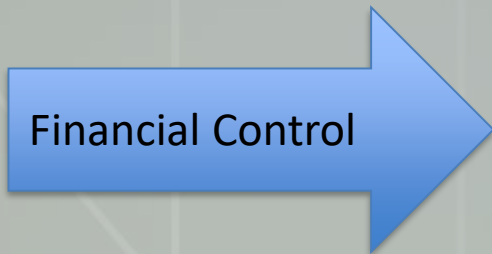


OPERATIONAL CONTROL DISCLOSURES



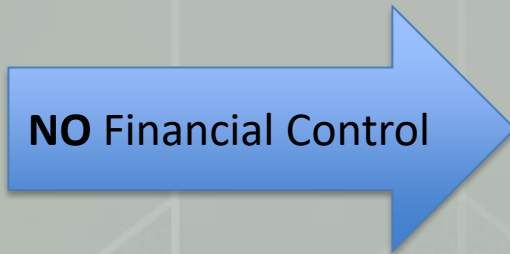
FINANCIAL CONTROL DISCLOSURES

WHOLLY OWNED



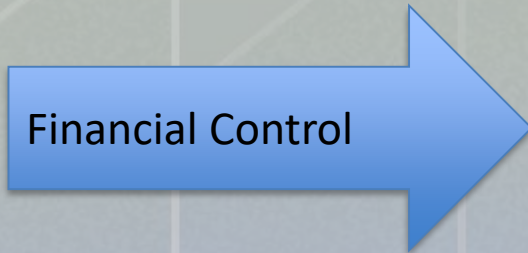
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Accounts for
10,000 Mt CO₂e/yr



=

Accounts for
0 Mt CO₂e/yr



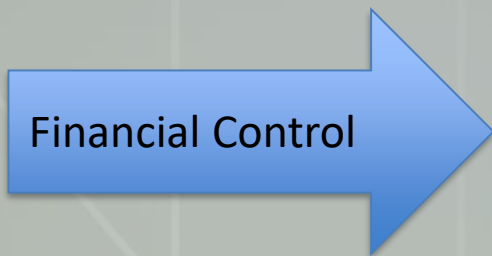
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Accounts for
1,000 Mt CO₂e/yr

Total Emissions = 11,000 Mt CO₂e/yr

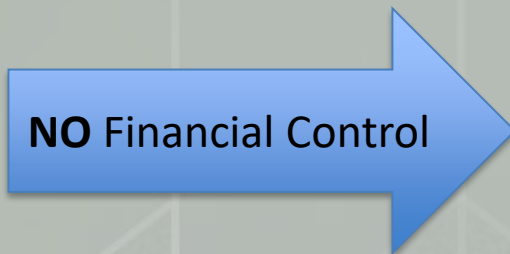
FINANCIAL CONTROL DISCLOSURES – JV CASE

JOINT VENTURE



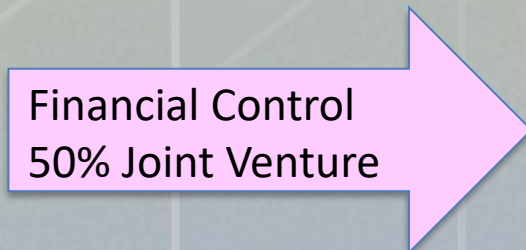
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Accounts for
10,000 Mt CO₂e/yr



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Accounts for
0 Mt CO₂e/yr

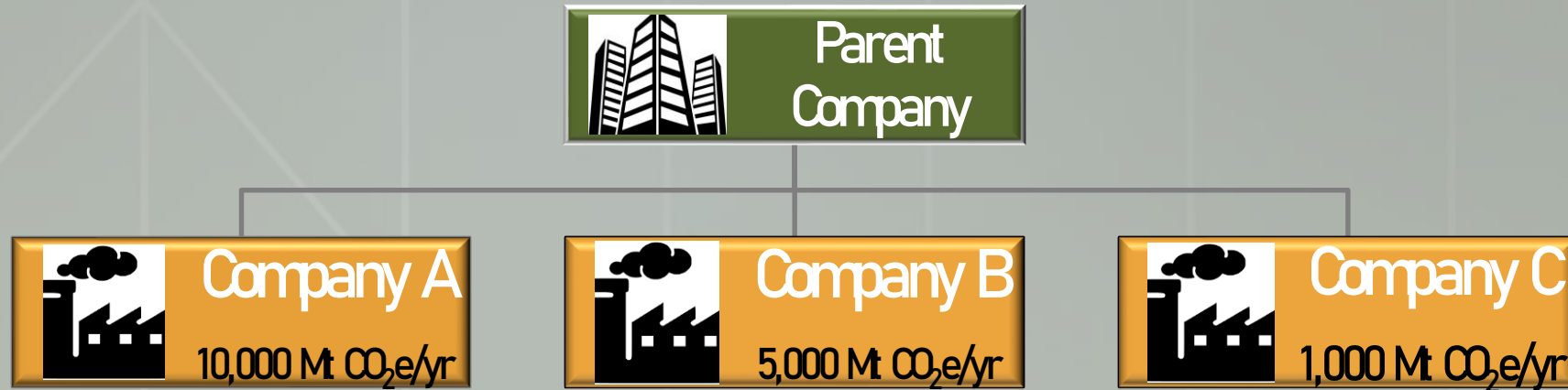


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Accounts for
500 Mt CO₂e/yr

Total Emissions = 10,500 Mt CO₂e/yr

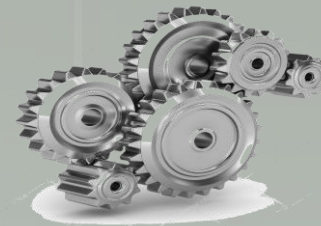
PARENT COMPANY DISCLOSURES



APPROACH	EMISSIONS (Mt CO ₂ e/yr)
Equity Share	12,650
Financial Control Wholly Owned	11,000
Financial Control with Joint Venture	10,500
Operational Control	15,000

WHICH APPROACH IS BEST?

- Equity Share
 - Alignment with financial accounting practices.
 - Commercial reality because method assigns ownership of GHG emissions proportionally to the registrant's economic interest.
- Operational Control
 - Government reporting that monitor and enforce compliance.
 - Registrant's performance and goal tracking.
 - Limited to no access to data in sector's without operational control
- Financial Control
 - Alignment with financial accounting practices.
 - Liability and risk management



CORPORATE MANAGEMENT SYSTEMS AND GOVERNANCE

- Company oversight and governance of climate-related risks by the board and management.
- Processes for identifying, assessing, and managing climate-related risks.
- Integration of those methods into the overall corporate management system or process.

PHASED DISCLOSURE APPROACH

- If the proposed rules are effective by December 2022, and the filer has a December 31st fiscal year-end:

Registrant Type	Disclosure Compliance Date		
	All proposed disclosures, including GHG emissions metrics: Scope 1, Scope 2, and associated intensity metric, but excluding Scope 3	GHG emissions metrics: Scope 3 and associated intensity metric	
Large Accelerated Filer	Fiscal year 2023 (filed in 2024)	Fiscal year 2024 (filed in 2025)	
Accelerated Filer and Non-Accelerated Filer	Fiscal year 2024 (filed in 2025)	Fiscal year 2025 (filed in 2026)	
SRC	Fiscal year 2025 (filed in 2026)	Exempted	

Filer Type	Scopes 1 and 2 GHG Disclosure Compliance Date	Limited Assurance	Reasonable Assurance
Large Accelerated Filer	Fiscal year 2023 (filed in 2024)	Fiscal year 2024 (filed in 2025)	Fiscal year 2026 (filed in 2027)
Accelerated Filer	Fiscal year 2024 (filed in 2025)	Fiscal year 2025 (filed in 2026)	Fiscal year 2027 (filed in 2028)

Phased-in Compliance

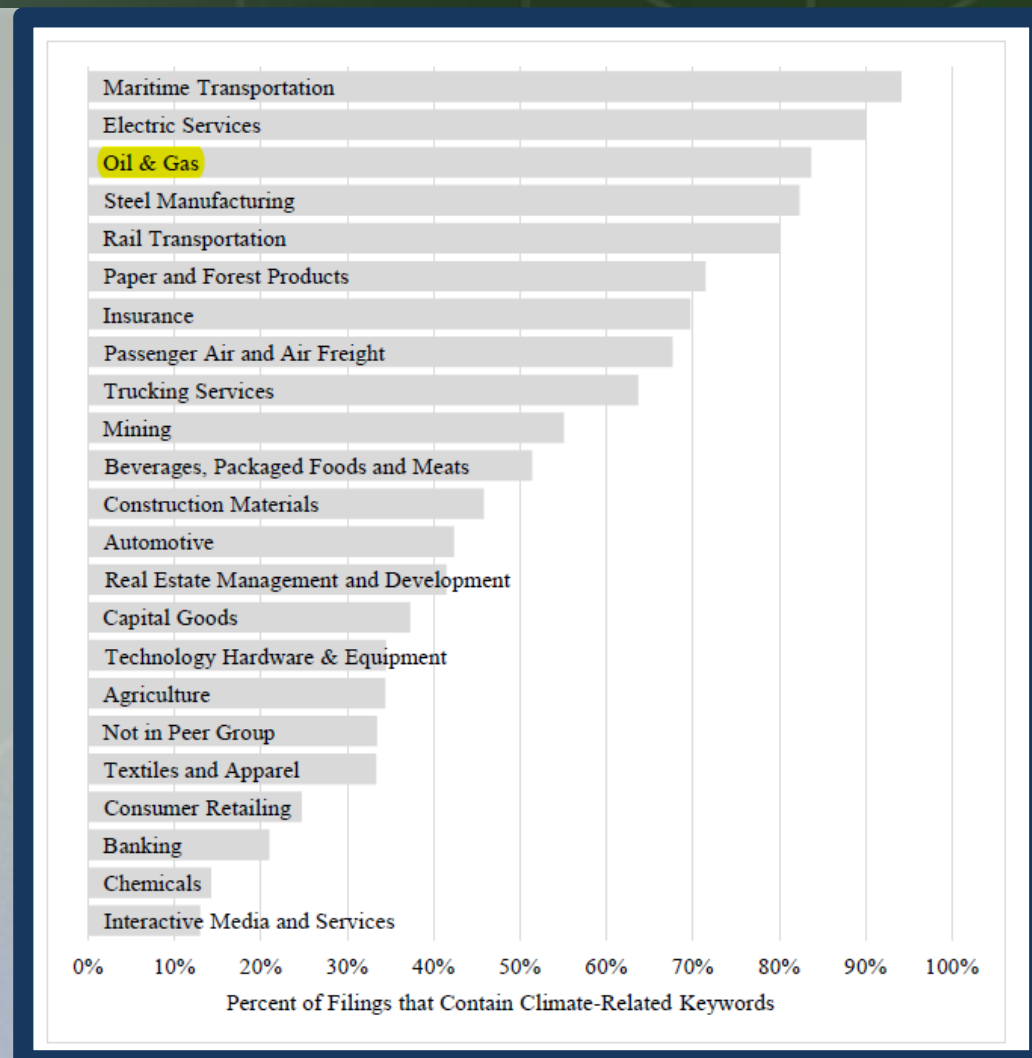
Type of Assurance Required

- Accelerated filers and large accelerated filers are required to have, at a minimum, an independent attestation of Scope 1 and 2 disclosures (17 CFR 229.1505).

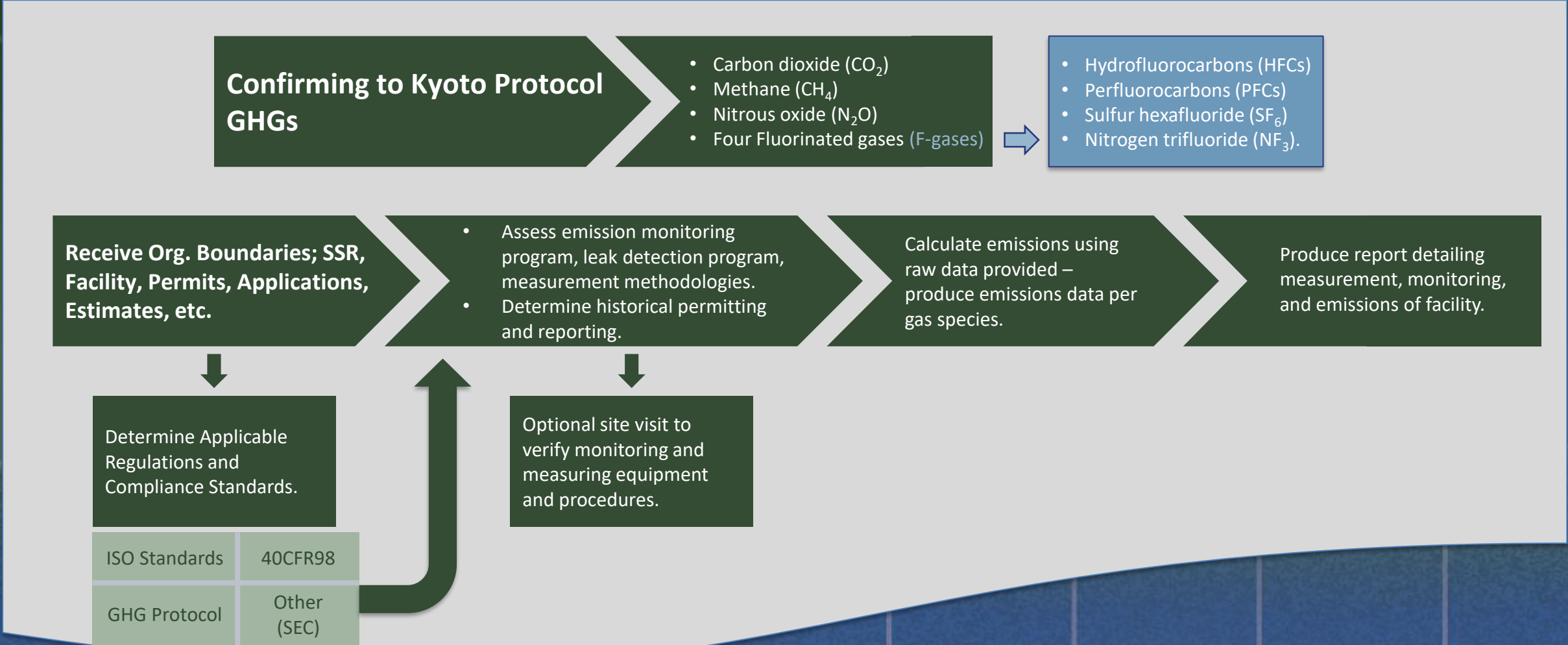
See 17 CFR 240.12b-2 for definition of “accelerated filer” and 17 CFR 240.12b-2 for definition of “large accelerated filer.”

AFFECTED PARTIES

- Registrants subject to disclosure requirements in the below forms:
 - 10-K
 - 20-F
 - S-1, F-1, S-3, F-3, S-4, F-4, S-11, 6-K
- Domestic and foreign private issuers.
- CFR 229.1507 instructions for interactive data filing in accordance with the EDGAR filer manual.



OUR METHODOLOGY BASED ON GHG PROTOCOL



RYDER SCOTT COMPANY IS READY



Greenhouse Gas Verification & Validation Manual

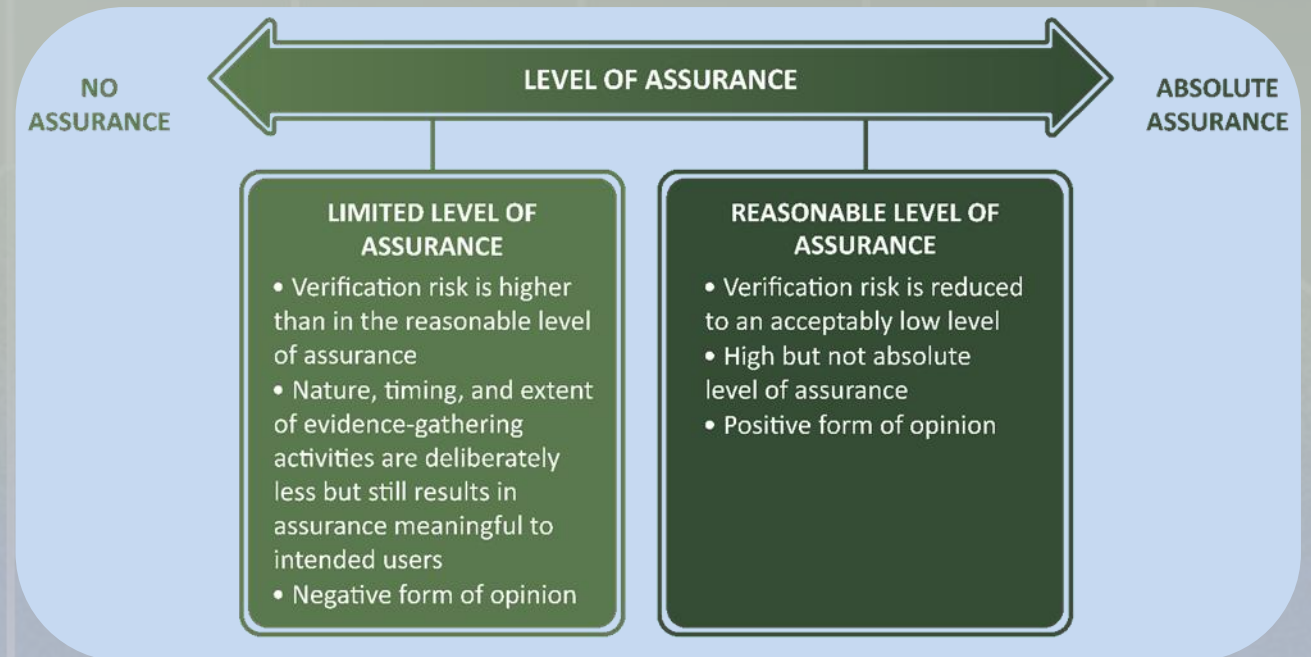
Modeled after ISO 14064-3:2019

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GHG VV Manual Version March 2022
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QUESTIONS?