

Revision to the Petroleum Industry Guidelines for Reporting GHG Emissions

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What is IPIECA?



- Global oil and gas association for environmental and social issues
- Formed 1974
- Only global association for both upstream and downstream oil and gas industry
- Help members improve their performance
- Principle channel with UNEP
- Membership covers over half of the world's oil production



IPIECA members



Overview of oil and gas GHG guidelines



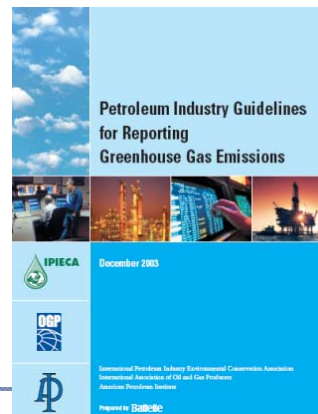
IPIECA / API / OGP guidelines

- 2001 – *API emissions estimation methodologies* (also 2004; 2009)
- 2003 – *Guidelines on reporting GHGs*
- 2009 – *Addressing uncertainty in GHG inventories Pilot*

Also

- 2005 – *Guidance on Voluntary Sustainability Reporting (also 2011)*

In 2011 we revised VSR guidance, and GHG reporting guidelines



- IPIECA / API guidelines:
 - Based on WRI/WBCSD GHG Protocol
 - Builds on it – tailored for O&G industry
- Their Purpose
 - provide guidance, not standards
 - promote consistency and reliability
- Why revise?
 - Reflect changing science and practice
 - Member experience
 - Keep in line with other guidelines



Revisions to the guidelines:

- 1) Introduction, scope
- 2) Reporting principles
- 3) **Setting the boundaries**
- 4) Tracking emissions over time
- 5) **Identification of industry GHGs to report**
- 6) **Evaluation of emissions**
- 7) **Reporting**
- 8) Inventory assurance

Ch. 3 Boundaries

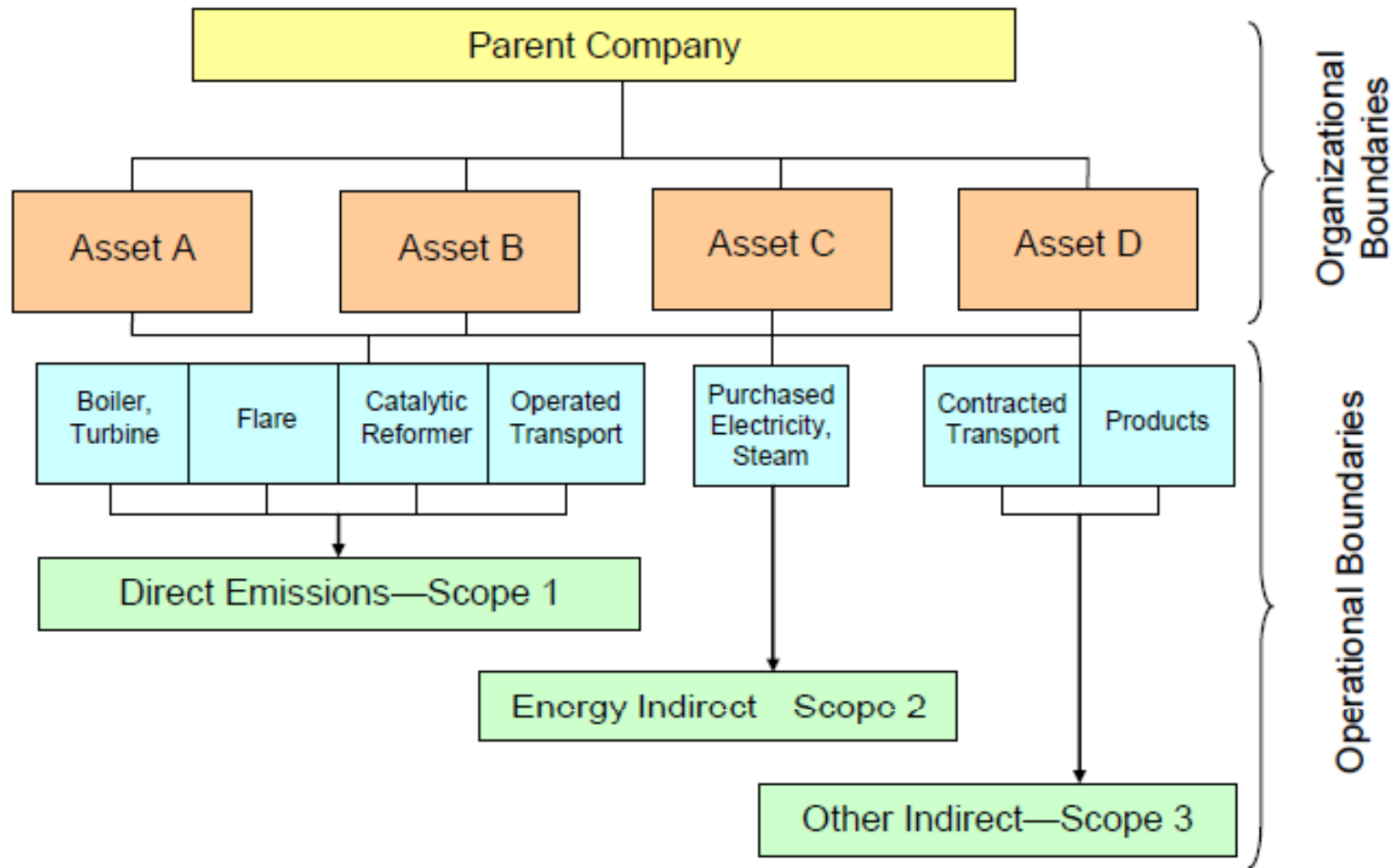
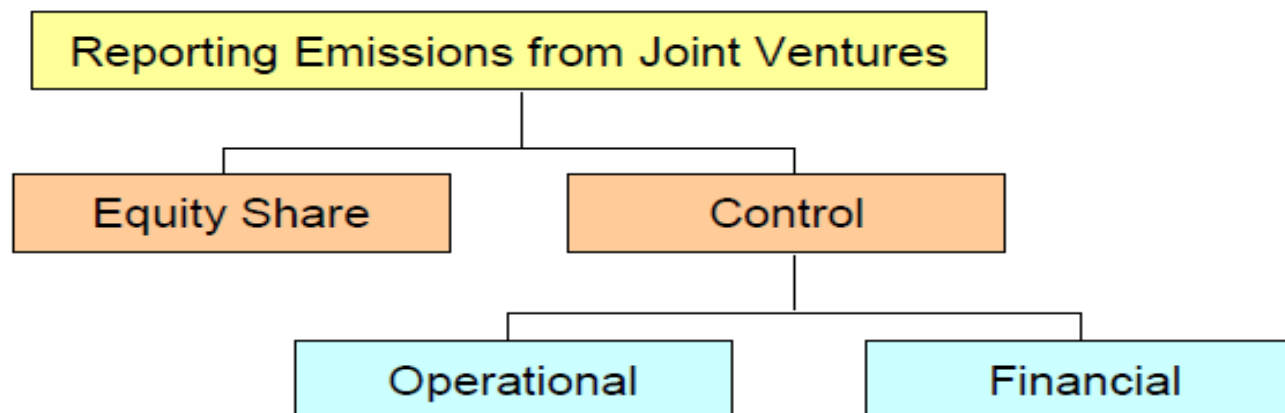


Figure 3-1. Organizational and Operational Boundaries of a Company

- approaches for **organizational boundaries**:
 - Alongside equity share; operational control; added **financial control**



- Accounting for emissions:
 - If asset wholly owned/operated, boundaries clear
 - But partial owner/operation, more complex...
 - **equity share** of ownership ($X\%$)
 - **control** of the asset / joint venture ($100\% / 0\%$)

- Equity share
 - Similarity with financial accounting
 - Good for assessing liability and risk
 - Requires more resources / access to data
- Operational control
 - Easier to obtain data
 - Good for performance tracking
 - Mandatory schemes including EU ETS
- Financial control
 - Still emerging
 - Similarity to financial accounting
 - Does not cover many emissions from JVs

Guidelines: no recommendation which approach to report;
lays out the pros and cons of each

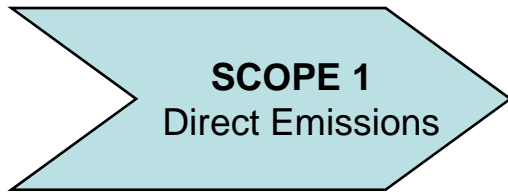
Equity/financial control for industry investments IPIECA

Investment type	organization relationship	by equity share	financial control
Subsidiary	The petroleum company either wholly owns the subsidiary, or enough of its voting stock, that it has full control of the subsidiary (e.g. through election of the board of directors).	According to the ownership share of the subsidiary (100% for wholly-owned subsidiaries).	100% of GHG emissions.
Joint venture that operates as a separate company	Several corporations have formed a company by combining some of their existing assets and/or capital. The several corporations are the sole shareholders.	According to the ownership share of each of the parent corporations in the new company.	0% of GHG emissions*.
Joint venture to develop a production asset	Corporations work in partnership to develop the asset without forming a new company. One serves as operator.	Based on the terms of the arrangement with the other parties—typically according to the working interest.	Based on the terms of the arrangement with the other parties—typically according to the working interest.
Joint venture with state oil co. and foreign co's to produce oil, with production sharing agreement	For example, a state oil company has 40% interest in venture, and several companies each have 15% interest or less, including the operator.	Based on company's share of net production.	Not covered specifically by financial control rules.
Own stock in publicly traded co — significant share of ownership	For example, a separate company in which the petroleum company has significant influence.	According to the ownership share of the petroleum company in the corporation.	0% of GHG emissions.
Own stock in publicly traded co — small share of ownership	For example, a separate company in which the petroleum company has made an investment, but does not have significant influence**.	Petroleum company reports no GHG emissions from the company in which it has invested, consistent with financial accounting.	Petroleum company reports no GHG emissions from the company in which it has invested, consistent with financial accounting.

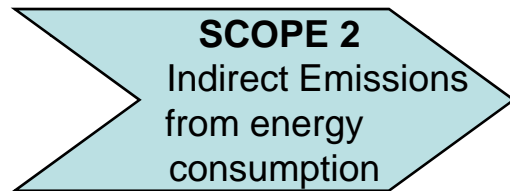
- A key step is to identify the **Reporting Units**
 - Smallest practical building blocks reflecting internal management
 - Can be all or part of a subsidiary company, joint venture, investment, facility, plant, office, or business location
- Reporting units should:
 - Represent pieces of business unlikely to be split
 - Operated by a single company
 - Have a single company equity share
 - Cover a narrow range of activities within one country or region
- Allows data to be consolidated in multiple ways

Ch. 3 Setting operational boundaries

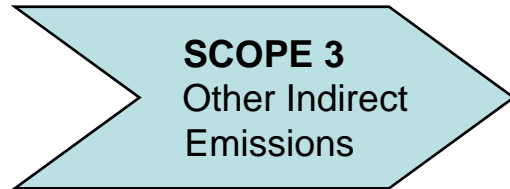
- Operational boundaries – aligned closer to *Protocol*



e.g. process emissions, flaring, fugitive emissions



e.g. emission associate with the import of electricity,
steam, heating (hot water), and cooling



e.g. product use, 3rd party shipping, hydrogen production,
purchased products/materials, business travel

Companies should account Scope 1 and Scope 2
Companies should report Scope 1
Choose whether to report Scope 2 and 3
Lays out pros and cons of reporting indirect emissions

- Reporting Scope 3 still emerging
- Expanded discussion of Scope 3
 - Emissions from product use
 - Emissions from hydrogen production
 - Emissions from other large sources
 - Minor scope 3 emissions inc. employee travel
- Accounting for industry Scope 3 challenging
 - Uncertainty of data
 - Accuracy of estimations methods

Make no recommendations on reporting Scope 3,
recommend accounting for some Scope 3 emissions

- Added IPCC AR4 GWP factors for information
- Recommended to use GWP factors inline with national reporting
 - IPCC Second Assessment Report GWP factors until at least 2012
 - UN may transition after 2012 – then switch to IPCC AR4
- Of particular interest - methane (GWP 21 → 25)

- Guidelines significantly reworked
 - Serves as companion to *Uncertainty* document
 - Focus on technical uncertainty from known sources
- Notes common technical uncertainties
- Provides some suggestions on how to resolve

Address uncertainty from source types in the context of their potential contribution to overall uncertainty. Focus on the largest sources!

- Discussion of de minimis, separate from materiality
- Used to calculate significance of a source
 - Usually based on estimated % of total emissions, or a fixed value
 - Can introduce bias
- Voluntary reporting guidance varies
 - GHG Protocol does not recognize excluding emission sources
 - The Climate Registry also does not allow for de minimis exclusion
 - ISO 14064-1 allows exclusion where sources are not material

Do not recommend setting specific level –
a level may be significant for one facility, but not for another.
Companies that do apply a numerical threshold should document it.
May decide to use simplified estimation approach.

- Demand to report *normalized* GHG Emissions
 - Of interest to stakeholders and management
 - Track performance over time and facilitate product comparisons
- Warning on output measures!
 - They represent gross indicators of production
 - Do not take into account varying nature of operations
 - Only normalize based on factors which make sense
 - Only compare like-like
 - Must use same organizational boundary as emissions
- Bases for normalizing within our industry
 - Are only viable at a sub-sector level
 - New *SR Guidance* recommends sub-sector factors
 - Normalizing based on \$ not appropriate

Thank you



IPIECA

the global oil and gas industry association
for environmental and social issues

www.ipieca.org

- After 7 years, guidelines needed update to
 - reflect scientific and technical developments
 - reflect actual experiences of implementing guidelines
 - maintain consistency with other oil industry documents and national/international GHG standards or guidelines

- 2011 revision, has significant improvements:
 - Aligned with *Sustainability Reporting Guidance*
 - Chapter 3 – on setting boundaries
 - Chapter 4 – on tracking emissions over time
 - Chapter 5 – added AR4 GWP factors
 - Chapter 6 – incorporates discussion of uncertainty and de minimis
 - Chapter 7 – reporting emissions, inc. normalization

- Principles are based on *GHG Protocol*
- Main aim of the principles is to ensure that reporting is true, credible and unbiased

The reporting principles:

Relevance – boundaries selected to reflect organization's emissions

Completeness – account for all sources, document exclusions

Consistency – use consistent methods and document any changes

Transparency – provide a clear audit trail; disclose assumptions

Accuracy – ensure no systemic bias; quantify and reduce uncertainty

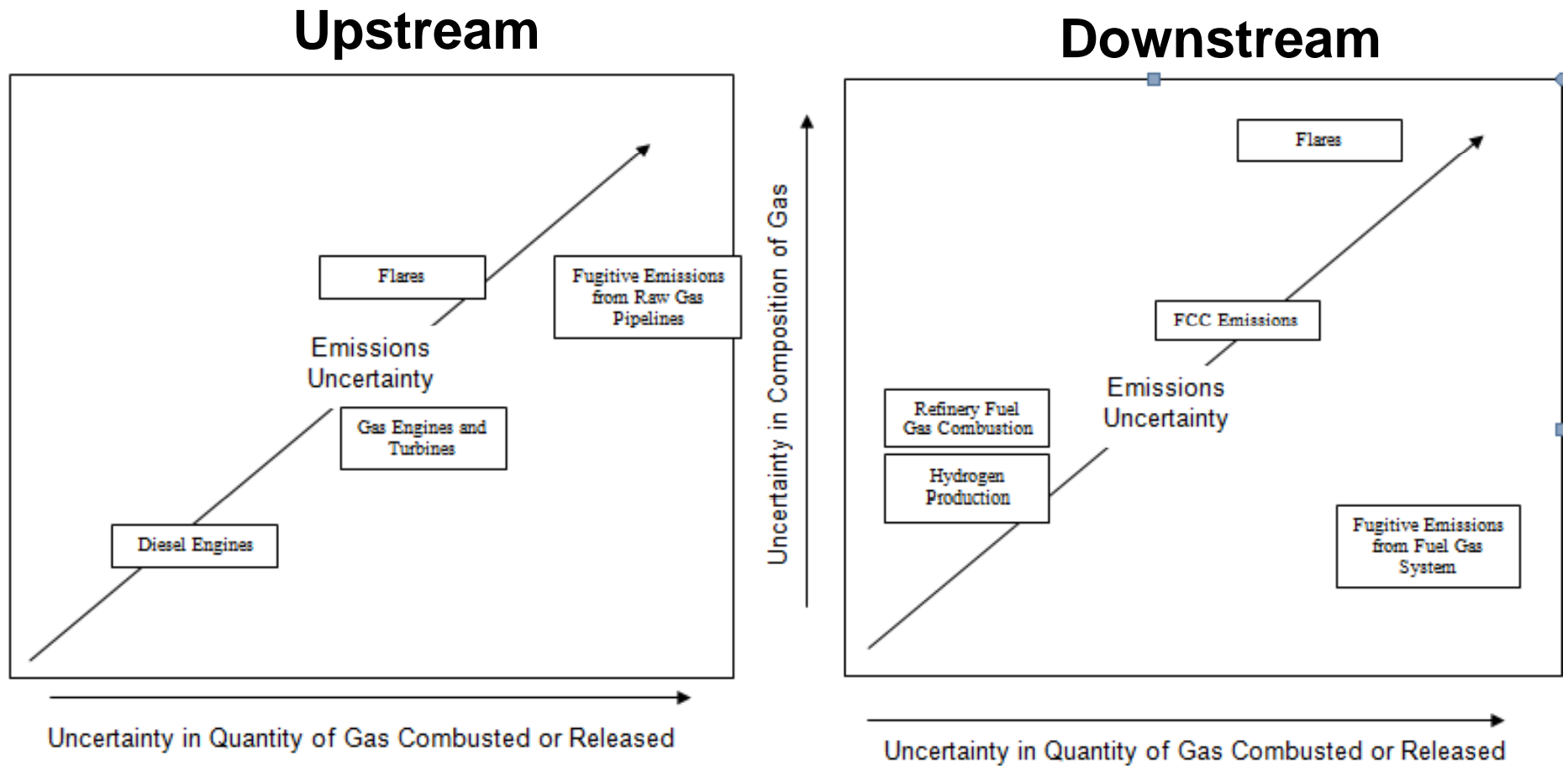
- Revised chapter to clarify role of tracking emissions
 - Some companies state total company emissions over time
- Normally, reference point is *base year emissions*
 - **Fixed base year approach, or**
 - (added) **Rolling base year approach**
- *Revising base year emissions on significant changes*
 - Only when tracking performance
 - More complex when using rolling base year

No recommendation as to whether fixed or rolling base year is used.

- Guidelines significantly reworked
 - Serves as companion to *Uncertainty* document
 - Focus on technical uncertainty from known sources
 - But recognizes other factors that effect inventory uncertainty
- Purpose of uncertainty analysis and quantification:
 - Can be part of a learning and feedback process to improve quality
 - Provides transparency and increased credibility
- Common technical uncertainties:
 - Combustion: Fuel composition
 - Venting: Quantity and composition
 - Fugitive emissions: composition, quantity

Address uncertainty from source types in the context of their potential contribution to overall uncertainty. Focus on the largest sources!

(ch 6) Relative uncertainty: up and downstream IPIECA



- Flexible aggregation of emissions encouraged
 - Differing requirements
- Relevant data in O+G depends on sub-sector
- Companies who can, should report by:
 - E&P
 - Refining
 - Petrochem's,
 - Transport and Terminals,
 - Pipeline,
 - Marketing

Ch. 7 reporting emissions - normalization



Oil and gas industry activity	Normalization factor
Exploration and production (upstream)	Wellhead production of crude oil, condensates, natural gas liquids and dry gas (including flared gas and gas used for fuel but excluding gas reinjected into the reservoir) on an operated basis <i>Note: equity share GHG emissions may be normalized using net export production on an equity share basis, as in financial reporting.</i>
Refining	Refining throughput of crude oil and other feedstock
Transportation and terminals	Product delivered or terminal throughput
Pipeline	Pipeline throughput
Marketing (retail)	Motor fuel sales
Marine	Cargo volume transported
Petrochemicals	Petrochemicals production

- **Inventory assurance processes**
 - based on two chapters from GHG Protocol: Managing inventory quality and Verification of GHG emissions
 - Companies not using inventory quality management systems should consider adopting them
 - Level of assurance required increases from internal to public to regulatory/financial reporting:
- **Materiality**
 - Information is considered material if, by its inclusion or exclusion, it influences decisions or actions taken by users of that information
 - Value judgement, but materiality threshold can exist (5%?)
 - Assessment of risk of material discrepancy used by verifiers