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Balancing Rigour with Practicality in GHG Quantifications

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Stephan Wehr

The Delphi Group

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- Ottawa-based strategic consultancy
- 15+ years in the climate change business
- Recent GHG emissions quantification and reporting experience with:
  - TEAM, SDTC, FCM, CDM
  - Project-specific documents and broader protocol work

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Context

- GHG project quantifications involve various aspects, which can be more or less rigourous and more or less practical

- Rigour – how detailed an approach is, with implications for accuracy

- Practicality – how onerous an approach is, with implications for cost and effort required

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Presentation Overview

- Importance of rigour & practicality
- Overview: selecting relevant GHG sources, sinks and reservoirs (SSRs)
- Observations and conclusions regarding rigour
- Recommendations for Offsets

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Why is "Rigour" Important?

- Do not want to overstate (or grossly understate) emission reductions
- For emissions trading systems, want to ensure that only real emission reductions are credited
- Increased rigour generally results in increased accuracy

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Why is “Practicality” Important?

- Want to encourage action to address climate change

- If participation in a GHG system is too expensive, time consuming, or otherwise onerous, fewer entities will participate

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How are “Rigour” and “Practicality” Related?

- Basic relationship:

RIGOUR ↑ PRACTICALITY ↓

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Rigour in Practice

- Various aspects of GHG quantification can be more or less rigourous, e.g.:
  - Managing data uncertainties
  - Baseline selection
  - Identifying and selecting relevant GHG Sources, Sinks and Reservoirs (SSRs)
- ISO 14064 Part 2 draft is not prescriptive
  - criteria must be established, but specific criteria are up to individual users

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Identifying and Selecting Relevant SSRs – Overview

- Two-Step Process:
  1. Identify SSRs
  2. From identified SSRs, select those considered relevant for quantification

- Approaches and requirements are system/program–specific

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Step 1: Identifying SSRs

- Delphi/TEAM Systematic Approach:
  - Identify controlled SSRs
  - Identify related SSRs by tracking inputs upstream and outputs downstream
  - Identify affected SSRs
- Cast a 'wide net' at this stage

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Expanded SSR Classification

One-Time-Only, Before	On-Going, During	One-Time-Only, After
	B. Upstream SSRs During Project Operation ▪Production and transport of process inputs	
A. Upstream SSRs Before Project Operation ▪Production and transport of construction materials ▪Construction	**C.** "On-Site" SSRs During Project Operation ▪Process emissions ▪Process storage (e.g. forest sinks)	**E.** Downstream SSRs After Project Termination ▪Decommissioning ▪Transport and Management of waste
	D. Downstream SSRs During Project Operation ▪Transportation of outputs ▪Management of process waste	

Note: Affected SSRs not considered here

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Step 2: Selecting Relevant SSRs

- Must determine which of the identified SSRs warrant quantification
- Various approaches:

Least Rigourous → **Most Rigourous**

Controlled SSRs Only	Balanced Approach	All Identified SSRs

- Consider a very rigorous approach…

Full Life-Cycle Approach

- Typical observations when all SSR categories are considered:

SSR Category	Emission Reduction Magnitude	Effort Required	Uncertainty
C (On-going; "On-Site")	Large ↑	Small ↓	Small ↓
B & D (On-Going; Up / Downstream)			
A & E (1-time-only; Up / Downstream)	Small	Large	Large

Wind Power Example

- 125 MW offshore wind farm, quantified using Delphi/TEAM Wind Protocol
- Assumptions:
  - Project: all SSR categories quantified, complete lifecycle approach
  - Baseline: Canada's average grid electricity generation intensity ("On-Site" emissions only)
- Results:
  - Total project emissions (mainly Cat. A) = 7% of baseline emissions
  - Almost entire quantification effort devoted to this 7% of emissions

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Delphi Observations

- "80/20 rule"
  - 20% of effort needed to quantify 80% of the emissions, and vice-versa
- Applies to the various project types that Delphi has experience with:
  - e.g. renewable energy, energy efficiency, manure management, transportation
- Does not apply to every project type or in every situation

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Delphi Conclusions

1. Generally reasonable to exclude one-time-only SSRs (Cat. A & E) from quantification
2. On-going upstream and downstream emissions (Cat. B & D), while usually less than "on-site" SSRs, can be significant and bear consideration
3. "On-site" (Cat. C) emissions always bear consideration

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Delphi Conclusions

- When is more rigour appropriate?
  - Significant LCA emissions suspected
  - Very large projects, or where approach can be applied to multiple projects
  - Where specific LCA insight is desired
- When is less rigour appropriate?
  - No significant LCA emissions suspected
  - Upstream / Downstream SSRs controlled by capped sources (e.g. LFEs)

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Practical Application: Recommendations for Offsets

- Delphi recommends that the following SSRs be <u>excluded</u> from quantification:
  1. One-time-only SSRs (Cat. A & E)
  2. SSRs unchanged between project and baseline
  3. SSRs with lower project emissions than corresponding baseline SSRs

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Practical Application: Recommendations for Offsets

- Key Rationale
  - Focuses efforts on most significant SSRs
  - Over many projects, expected that one-time-only project and baseline emissions will cancel out
  - Increases participation without compromising environmental integrity

… a balanced approach between rigour and practicality

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Please contact us for more information

Stephan Wehr

Manager – GHG Services

(613) 562-2005 x232

swehr@delphi.ca

Michael Gerbis, P.Eng.

President

(613) 562-2005 x224

mgerbis@delphi.ca

The Delphi Group

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www.delphi.ca

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