Understanding emission inventory data through data visualisation
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Overview

• Introduction
• Mass balance approach
• Cross-country analysis
• Conclusions
Introduction

• Can we improve inventory quality (TCCCA) through visual methods?

• Assess the tools / programmes available to us

• Assist with internal QC

• Understand whether we can analyse submission data interactively and learn anything new
A mass balance approach

**Current issues:**

- Inventory processes are often complex
- Dependent upon a number of factors e.g.
  - Fuel content
  - Technologies
  - Climate…
- Some inventory processes contribute to numerous reporting categories such as combustion and process
A mass balance approach

The challenge:

- Design a system to visually analyse mass balances in inventory processes

...Improving QA/QC and reporting

- Transparency
- Completeness

- Consistency (internal)
- Comparability (external)

- Accuracy
A mass balance approach

What tools do we have available?

• Can we get added benefit by employing new tools / programmes?
• Can we build these around our existing data sets (MS Office)?
• Can we improve transparency without writing ~100 page documents?

Some examples...
Reference vs. Sectoral approach
Reference vs. Sectoral approach

Difference: 6214 Gg

Legend:
- Liquid fossils
- Solid fossils
- Gaseous fossils
- Other fossils
- Biomass
Iron & Steel Production

Diagram showing the process and emissions associated with iron and steel production, including the inputs like coke, hard coal, limestone, coke oven gas, natural gas, and electrodes, and the outputs like steel, sinter, and various emissions reporting categories.
A mass balance approach

Applying this to AQ

- Complex inventory processes?
  - Yes

- Reliance upon energy balance and core data sets?
  - Yes

- Data availability?
  - Question Mark
Why are we doing this?

- By comparing levels of reporting we can improve our inventories in terms of completeness
- Focus on important categories (not for nit-picking!) and identify gaps to improve accuracy
- Improve the value of the international process by increasing comparability between parties
Cross-country analysis

The challenge:
- Use publically available data to enable countries to compare their inventories in an interactive manner across time, pollutants and categories...

...Learning by comparison:
- Transparency
- Completenss
- Consistency (internal)
- Comparability (external)
- Accuracy
Cross-country analysis

What tools do we have available?

• Can we get added benefit by employing new tools / programmes?
• Over-reliance on MS Office?
• Can we improve completeness, accuracy etc. by exploring data interactively?
• Are there any issues with the LRTAP submission data for this purpose?
Conclusions

• LRTAP submission data limited in comparison to GHGs, however…

• We can learn by exploring data and presenting it in an interactive way

• Engaging stakeholders, policy makers and the general public

• Improving our inventory quality
Contact details

Thank you.

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