

Overview of the training course on review of information reported using higher-tier methods and complex models

General aspects

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Outline

- Background
- Conclusions from the IPCC workshop in 2010
- Use and review of complex models and higher-tier approaches – General aspects
- Course outline
- Questions to Lead Reviewers and experienced reviewers – Issues to consider



Why this course?

- The SBSTA-29 (2008) discussed the technical review of GHG inventories from Annex I Parties and noted the **importance of the training for inventory review experts**, and requested the secretariat to update the training programme for the period up to 2014.
- The SBSTA 29 indicated that the programme should provide training courses and seminars for new review experts and possibly **new training modules** on, for example, the **review of higher tier methods and models**, as well as activities relating to the **training needs of experienced review experts, including seminars**.
- The SBSTA 30 (2009) re-emphasized the urgent need to strengthen the secretariat's capacity to manage the reporting and review processes, including the training of GHG inventory review experts, and to **prioritize these fundamental activities**.



Why this course?

- The SBSTA 30 requested the secretariat to enhance training activities, including by organizing regional training seminars and developing **new online training courses and seminars for experienced experts**, subject to the availability of resources, and recommended a draft decision on the training programme for GHG inventory review experts under the Convention.
- Decision 10/CP.15 (2009), requested the secretariat to **develop and implement the updated training programme** for GHG inventory review experts for the technical review of GHG inventories from Annex I Parties.



Why this course?

- The updated training programme along the currently offered updated basic course, covering the general and cross-cutting issues and all inventory sectors, requires the development of the **course on review of complex models and higher-tier methods ...**
- ... and the organization of **an annual refresher seminar for experienced GHG inventory review experts**, subject to the availability of resources.
- The refresher seminars may be offered in conjunction with meetings of LRs to **complete the training for LRs and other experienced GHG inventory review experts.**



IPCC workshop, August 2010

The IPCC Task Force on National Greenhouse Gas Inventories has conducted an expert meeting held in Sydney, Australia on 9-11 August 2010, aiming to assist users of the IPCC methodological guidelines in addressing specific issues related to the use of models and measurements in GHG inventories.

“The use of higher tier methods, complex models or plant specific measurements or estimations, is becoming more widespread. However, while this has improved national inventories it is believed to have reduced transparency and therefore made the results less credible to all stakeholders.”

Co-chairs of the Task Force Bureau



Objectives

- The expert meeting considered the use of models and measurements for all sectors in GHG emission inventories:
 - Essentially these are Tier 3 approaches
- The meeting aimed to **compile the experience to date and the lessons learned** in the use of models and measurements for GHG inventories, particularly **related to transparency** so that inventory compilers when addressing these issues can benefit from this experience.



Conclusions

Inventories can be improved by the use of facility level data and complex models:

- These data can reduce uncertainty, improve stratification and spatial and temporal resolution, and/or better represent mitigation;
- Models and facility level data are based on, among other things, measurements:
 - Measurements may be of emissions or other parameters such as fuel use, fuel quality, etc.
- Use of models in inventories **implies a long-term commitment to collect and update high quality and reliable data** at a suitable resolution and to **maintain the model**;
- If facility level data are used **these need to be matched with more conventional emission inventory data** to complete time series and to estimate all emissions from a sector/category.



Conclusions

- Care needs to be taken to ensure the use of either models or facility level data is consistent with the inventory as a whole and that time series consistency is maintained;
- **Transparency is key for using models or facility level data and reporting** their results in a clear and credible way;
- The IPCC Guidelines outline how this should be done, however:
 - The Guidelines do not give practical detail or examples,
 - Recent experience may provide useful additional guidance.
- The meeting report gives:
 - Suggestions for reporting transparently based on experience to date;
 - Topics to be considered and reported in the use of these data.



Why use “complex models” or “higher-tier approaches”?

1. To improve inventory quality

- Allows for use of more detailed knowledge on the category

2. To better reflect policy measures

- Need to reflect changes in technologies and/or practices
- Need to use facility level emissions reporting

“Models” or “higher tiers” increase accuracy (decrease uncertainty)

- a) Absolute level uncertainty
- b) Trend uncertainty

*So typically a reviewer would expect the Party to show in a transparent manner that **accuracy** increases*



1. Transparency

Models/higher tiers might appear to be “black boxes”:

- How they are described and parameters selected? QA/QC, verification procedures?

2. Comparability

- How does the model/higher tier compare to tier 1 or tier 2 approaches? Results are comparable with estimates of other countries?

3. Consistency

- Are model parameters valid / available for the full time series?

4. Completeness

- Does the model/approach cover all sources within the category?

5. Accuracy

- This is the main objective of the application of a higher Tier! **Should be explicit!**



Course outline

Reviewing Higher Tier Emission Estimates

A draft e-learning course

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Higher Tier Review Training

What you find here is work in progress.
At this stage we are developing the outline, while drafting some elements of the script at the same time.
It is by no means a complete course yet.

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Some issues to consider

- All important issues are covered?
- There is a need for “practical detail or examples”:
 - a) All sectors
 - b) Anonymised
- We like to use “recent experience”
 - a) Good practice examples ?
 - b) Problems / issues during review ?

Could Lead Reviewers and experienced reviewers propose these for inclusion in the course?

Any suggestions?

