Proposed guidance on addressing bias uncertainty:

The Meth Panel proposes that the current practice of addressing scientific and model uncertainty at the baseline and monitoring methodology level should be continued. This means that if the uncertainties are large and bias cannot be eliminated, approaches can be followed to ensure the resulting estimate of emission reduction is conservative (e.g., neglecting baseline emission sources, "conservativeness factors"). An example is the "model correction factor" of 0.9 applied for the estimation of landfill baseline emissions in the methodology AM0025 or the neglecting upstream emissions in the baseline (e.g. upstream emissions from fossil fuels in the tool to calculate the emission factor for an electricity system).

Similarly, the uncertainty regarding the demonstration of additionality, the selection of the baseline scenario and key assumptions of the methodology can mainly be addressed on a methodology level, for example by requiring that project participants make conservative assumptions or provide proper documentation or justifications.

With regard to possible bias in applying monitoring procedures, the Meth Panel has no information available on how this is applied in practice and verified by DOEs. The EB may want to consider expanding and strengthening its guidance to DOEs to ensure that verification of quality control and assurance policies are applied in a consistent manner.

Proposed guidance on random uncertainty:

To address random uncertainty in a consistent manner, the Meth Panel proposes to provide the following guidelines for treating random uncertainty in CDM projects:

Proposed new methodologies should provide recommendations on the acceptable uncertainty of individual parameters. In doing so, the following principles should be considered:

- **Materiality.** It is recommended that the limit is set lower for parameters with a large impact on overall emission reductions and higher for parameters with a lower impact on overall emission reductions. For parameters with a small contribution to the overall emission reduction uncertainty could be ignored;
- **Use of "good practice"[1] instrumentation in measurements.** In case of parameters that can be measured, the measurement uncertainty of "good practice" measurement equipment and associated costs should be taken into account. For instance, where accurate measurement equipment is not possible at reasonable costs, a higher uncertainty limit could be set to allow for the use of measurement equipment with a lower accuracy. Where accurate measurement equipment is available at reasonable costs lower uncertainty limits should be set;
- **Incentives to use more accurate approaches over less accurate approaches.** If a methodology provides different options to determine one parameter (e.g. measurements or default values), the methodology may encourage the use of more accurate options over less accurate approaches. For example, this can be ensured by allowing project participants to choose to either conduct own measurements/collect own data or to use conservative default values.

The overall uncertainty of emission reductions should be addressed as follows:

Proposed new methodologies should calculate the expected random uncertainty level of overall emission reductions of project activities applying the methodology (e.g. by applying error propagation), based on the recommended acceptable uncertainty of individual parameters, as established according to the guidance above. If the expected overall random certainty is above 15% (at a 95% confidence level), then the methodology should adjust the overall emission reductions by applying the conservative factors provided in table 4 below.

[1] Good practice is a combination of: skilled personnel, accuracy of the instruments, reproducibility of the instrument and procedures for data management.

If it is not possible to reasonably determine the expected random uncertainty level of overall emission reductions on a methodology level, then the project participant has to address the uncertainty at the project level (e.g. by applying error propagation). If the random uncertainty of overall emission reductions of the project activity does not exceed 15% (at a 95% confidence level), no further action to deal with random uncertainty is required. If the random uncertainty of overall emission reductions exceeds 15% (at a 95% confidence level), then project participants should discount the overall emission reductions by applying the conservative factors provided in table 4 below.

In cases where the methodology addresses uncertainty at a methodology level, project participants can also choose to determine random uncertainty on a project level to provide more flexibility to them. For example, this enables the application of the methodology to situations where project participants can achieve a lower random uncertainty than the level estimated in the methodology. This also allows project participants to choose measurement instruments that are better suitable to the circumstances of their project activity, while ensuring that the resulting uncertainty of overall emission reductions is addressed in the same manner. In these cases, project participants should determine the uncertainty of overall emission reductions on a project level (e.g. by applying error propagation). If the random uncertainty of overall emission reductions of the project activity does not exceed 15% (at a 95% confidence level), no further action to deal with random uncertainty is required. If the random uncertainty of overall emission reductions exceeds 15% (at a 95% confidence level), then project participants should discount the overall emission reductions by applying the conservative factors provided in table 4 below. Note that methodologies will need to set minimum standards in the monitoring guidance on the project level uncertainty to ensure the overall integrity of the emission reductions.

Table 4: Acceptable uncertainty limits for random uncertainty (adapted from 2006 IPCC Guidelines, Volume 2, Chapter 2, Tables 2.2 to 2.6)

Estimated uncertainty range at 95% confidence level of overall emission reductions	**Conservativeness factor**
> +/- 15%, ≤ +/- 30%	0.943
> +/- 30%, ≤ +/-50%	0.893
> +/- 50%, ≤ +/- 100%	0.836
> +/- 100%	to be addressed in the methodology

Rationale

The proposed guidance aims to fulfil several objectives:

- The level of 15% is chosen as a quite lenient level for an individual CDM project activity to accommodate for the diversity among different type of CDM project activities and to allow for the fact that at the overall CDM level all random uncertainty is close to 0[2];
- It provides flexibility to project participants on how they wish to deal with overall limit of 15% on the random uncertainty of overall emission reductions. For example, project developers could consider installing better monitoring equipment with a lower rated uncertainty or they could increase the sample size of monitoring. Alternatively, project developers could decide to discount CERs in case they cannot or do not wish to further reduce the uncertainty (e.g. due to high costs);
- The guidance encourages the implementation of best practice of monitoring of GHG emissions on project level, by considering the uncertainty level of available measurement instrumentation and requesting that the use of more accurate data is encouraged over less accurate data. The latter provision also avoids a potential perverse incentive that may arise if project participants have own data available or could it make available easily, but use default values if they would result in larger overall emission reductions.

[2] The nature of random uncertainty is that the overall probability is 0. Hence for all CDM projects, the law of large numbers predicts that the likely outcome is close to 0.

If the EB adopts this recommendation, the Meth Panel recommends the development of specific guidelines on how to implement this recommendation in the context of a new methodology.

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