Part 2 - Principles for the CO2 and Energy Protocol

Calculation of Greenhouse Gas (GHG) Inventory

for Indonesia Cement Industries

5 Main Principles in this Protocol

1. Relevance

Reflects the GHG emissions of the company and serves the decision-making needs of users

2. Completeness

Account for and report on all GHG emission sources and activities within the chosen inventory boundary.

3. Consistency

Consistent methodologies to allow for meaningful comparison of emissions over time.

5 Main Principle (Continued)

4. Transparency

Address all relevant issues in a factual and coherent manner, based on a clear audit trail.

5. Accuracy

Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, and that uncertainties are reduced as far as practicable.

Calculation versus Measurement

- In principle, can be determined by calculation or measurement.
- Version 3 of the Cement CO2 and Energy Protocol relies – as did Version 2 – on calculation methods
- Using calculation-based methodologies emissions from source streams are determined based on input or production data obtained by means of measurement systems and additional parameters from laboratory analyses (calorific factor, carbon content, biomass content etc.) and/or standard factors.

Measurement

are based on continuous measurement of the concentration of the relevant greenhouse gas in the flue gas and of the flue gas flow.

The limiting factor of applying this methodology is

- the low accuracy of volume flow measurement
- the impossibility of assessment of abatement measures and
- limited experience with the comparison of measured versus calculated data

Steps in Identifying and Calculating GHG Emission