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VERIFICATION EXPERIENCES – A DOE's PERSPECTIVE

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“Verification is the **periodic independent review** and **ex post** determination by the DOE of the monitored reductions... during the verification period.
Certification is the written assurance ... “

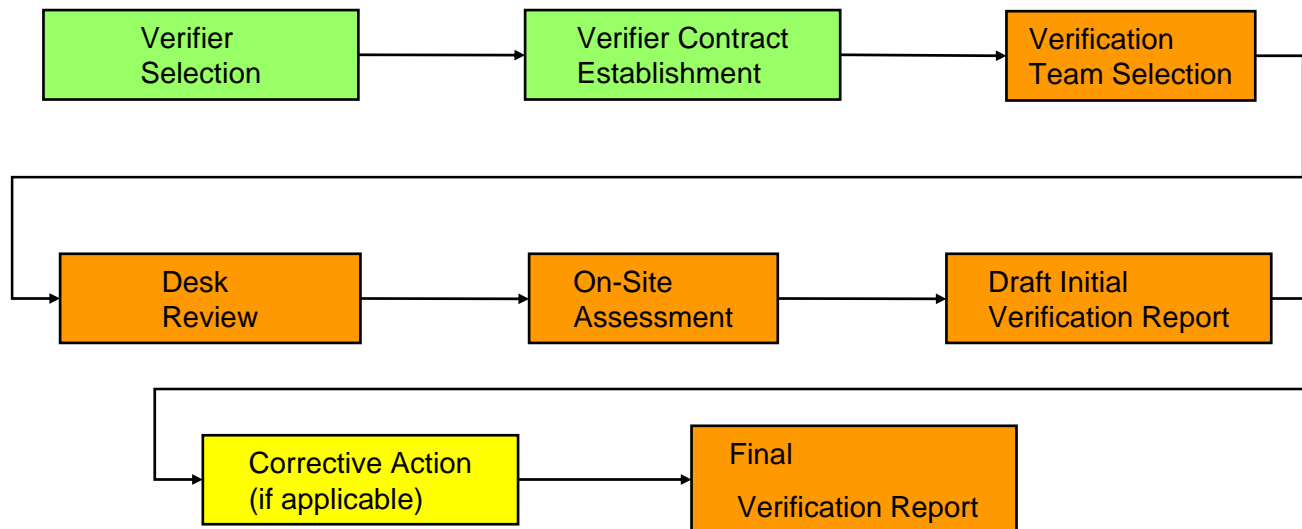
- **Pre-condition for issuance** of CER's
- **Assessment of conformity** with approved monitoring Methodology/plan and CDM-rules
- **Shifts liability** for issuance for non-valid CER's to the operational entity



Service providers:

- Designated operational entities

The **verification** process in detail



1. Over-estimation in PDDs



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- **Problems:**
 - PPs attract investors/buyer: overestimation in emission reductions
 - Inconsistencies in methodologies: more apparent with verification experience

- **Solution:**
 - Be conservative
 - More historic baseline data often gives more accurate estimations
 - Use of actual country-specific or project-specific values rather than default values
 - Meth panel could install a review of existing methodologies based on verification results

• Problems

- Certain information was not available in the validation
 - e.g. the energy production of a plant before the period used to determine the baseline
- In retroactive projects some values or parameters used during validation appear to be incorrect during verification
- When validating monitoring plans, different DOEs interpret the demands on details differently
- It is not clear which parameters are ex-ante
- Monitoring Plans in registered PDDs are unclear

• Solution

- Increased attention to clear, thorough and detailed Monitoring Plans during validation
- Increased alignment of validation and verification processes between DOEs

3. Project implementation issues



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- **Problems:**

- Projects not implemented as planned - PDD design which cannot be implemented as such
- Changes in project configuration and design
- Time delays
- Different monitoring methods used than described in Monitoring Plan (which can be a problem even if technically correct)
- Missing approvals or licenses
- No availability of local support (e.g. accredited laboratories)
- Missing calibration certificates (or no calibration, or less frequent calibration than defined in PDD)

- **Solution:**

- More careful preparation of the Monitoring Plan in the PDD
- Clear procedures with defined roles & responsibilities for quality assurance and control, data transfer and data management
- Clearer guidelines from EB on how to deal with such issues

4. Monitoring Plan inadequacies



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- For large scale project
 - the monitoring plans are not well detailed especially for social or environmental parameters
 - Only general information about the parameters
 - Only few or none information related to calibration, accuracy and uncertainty
 - The plans are oft really ambitious, and try to present a complicated monitoring system trying to include as many parameters from the methodology as possible
 - Parameters included: not always possible to be monitored
- For small scale projects
 - the monitoring plans sometimes do not include all the necessary parameters to obtain the emission reductions correctly
 - Methods to calculate or measure different parameters are not clear (e.g. flare efficiency)
 - The calibration, uncertainty and accuracy of the equipment used in the monitoring system is normally not correctly understood

5. Raw Data and Data management



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- Data quality
 - The **raw data** is sometime difficult to obtain and the project participants do not want to release this information.
 - The raw data only in paper form (1000 pages or more)
 - Data transfer between multiple (computerized) systems
 - Verifiability of data processing (software codes, excel spreadsheets)

- Data management:
 - Parameters defined in Monitoring Plan are not monitored or monitored differently (e.g. value is calculated instead of measured; weekly vs. daily recording, etc.)
 - Equipment failures
 - Lack of consistency during the entire reporting period
 - Missing documentations

5. Raw Data and Data management



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Quality Management

- missing description of procedures and processes
- availability of proofs (e.g. calibration documents)
- missing investigation on representativeness of samples (problems with confidence intervals)
- missing calibration
- access to plausibility parameter, which can deliver required level of assurance

Solution

- Main and check meters
- Clear procedures and defined roles and responsibilities for recording and consolidating data
- Detailed definition of procedures in Monitoring Plan for emergencies
- Automated and systematic computerized systems

6. Calculations



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- The **calculations** are normally done internally and the results copied in excel files, which does not allowed any possibility to trace the calculations.
 - Calculations using special software is really difficult to assess (C++ or Visual basic)
 - The amount of decimals use in the calculations are not according to the monitoring system
 - In general the **formulas followed the PDD** exactly but do not include possible deviations from the original design.
 - Method to transfer the information to the calculation sheets is not transparent

7. Monitoring Report



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- There is no **official layout** given by the EB.
 - The monitoring reports have sometimes only 2 pages and some more than 80
 - The information included could be only the total of emission reductions or even fast a complete copy of the PDD
- The information included in some reports is **only the total emission reduction**, which is normally difficult to assess.
- Possible project emissions due to **malfunctioning are** not included in the monitoring reports.
 - e.g. emission when flare is not working
 - physical leakages
 - not controlled combustion
- Emissions due to maintenance are not included
 - when opening some equipments
 - due to sampling (HFC23)
 - flow-meters calibrations



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THEORY \neq PRACTICE

- Validation & **Verification** Manual (VVM)
 - Verification of data
 - Assessment of risks (H/M/L)
 - Monitored parameters
 - Monitoring procedures including calibration of instruments, O&M of devices
 - Information on industry best practices through FAR
 - Quality of evidence
 - Sufficient and appropriate audit evidence
 - Whether the evidence is of sufficient quantity and appropriate quality;
 - Professional judgment on the reliability of the evidence;
 - The source and nature of the evidence (external/internal, oral, documented).
 - Project implementation in accordance with registered PDD
 - Compliance of monitoring plan with monitoring methodology
 - Compliance of monitoring in accordance with monitoring plan

Request for Deviation:

- if there is a deviation from the monitoring plan of a registered PDD
 - Example: calibration was only done 1x year but PDD mentioned every 6 months)

Request for Revision of Monitoring Plan (EB 26):

- monitoring plan in the registered PDD is not consistent with the approved monitoring methodology applied
- proposed revision ensures that level of accuracy or completeness in the monitoring and verification process is not reduced
 - Example: auxiliary consumption is calculated rather than measured directly; or choice of ex-post vs. ex-ante not clear in PDD

Request for deviation or revision of the monitoring plan cannot be used to ask guidance on the changes in the project design from the PDD.

Thank you for your attention!

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