



Ecologic Institute

Berlin
Brussels
Vienna

Washington DC



Effective MRVA for Emissions Trading in the Power Sector – Experiences from the EU

Benjamin Görlach
Ecologic Institute

EU-China Exchange on Challenges and Best Practices in ETS
implementation
Beijing, China
November 21, 2012



About Ecologic Institute

Who we are

- ▶ A private, not-for profit think tank for applied environmental research, policy analysis and consultancy
- ▶ Founded 1995 in Berlin, Germany
- ▶ Offices in Berlin, Brussels, Vienna, Washington DC and San Mateo CA
- ▶ Currently 125+ employees
- ▶ Ranked 6th among Environmental Think Tanks in the 2010 and 2011 Global Think Tank Index of the University of Pennsylvania

Who we work with

- ▶ International Organisations (UNEP, UNFCCC, CBD, World Bank, OECD)
- ▶ European Union (European Commission, European Parliament, European Environment Agency)
- ▶ National Parliaments and government agencies (e.g. German Environment Ministry, UK DECC, US EPA)
- ▶ Non-Governmental Organisations
- ▶ Educational Institutions
- ▶ Foundations, ...

MRV – just a “technical” issue?

- ▶ Less exciting than the political topics cap-setting and allocation, often overlooked in political discussions
- ▶ MRV nonetheless essential for the functioning of an ETS – without robust and reliable MRV, emissions trading will fail
- ▶ Market for emission allowances is a *politically created* market – allowance is a traded product that has its value only because of regulation. Hence the need for rigorous accounting.



Why is robust MRV so important?

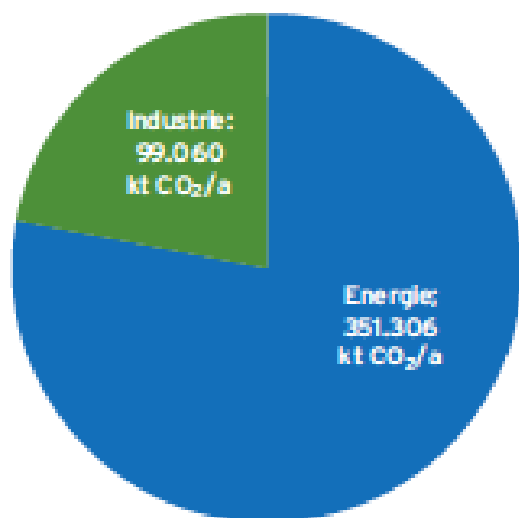
- ▶ Create and maintain trust in the emissions market
- ▶ Prevent fraud or cheating – fairness issue
- ▶ Give reliable information to the regulator – are we meeting our targets?
- ▶ Give information to companies – where are we in terms of compliance?
- ▶ Give information to the market – signaling scarcity
- ▶ Precondition for linking different schemes (internationally, but also domestically)
- ▶ ... solid, robust MRV (should be) everybody's own best interest.

Monitoring in the Power Sector – a good starting position

- ▶ Some inherent advantages for MRV in the power sector:
 - ▶ Relatively few streams to monitor
 - ▶ Fuel inputs are often traded, and therefore measured
 - ▶ Fuel cost often a high share of total operating cost, therefore interest in managing fuel consumption
 - ▶ Cost of MRV not disproportionate in relation to overall operating cost
 - ▶ Some data available from pre-existing regulation (e.g. SO₂)
 - ▶ Reporting structures, responsibilities available from other regulation
 - ▶ Concentrated point sources – not too many actors



Share of Power Sector in Total Emissions



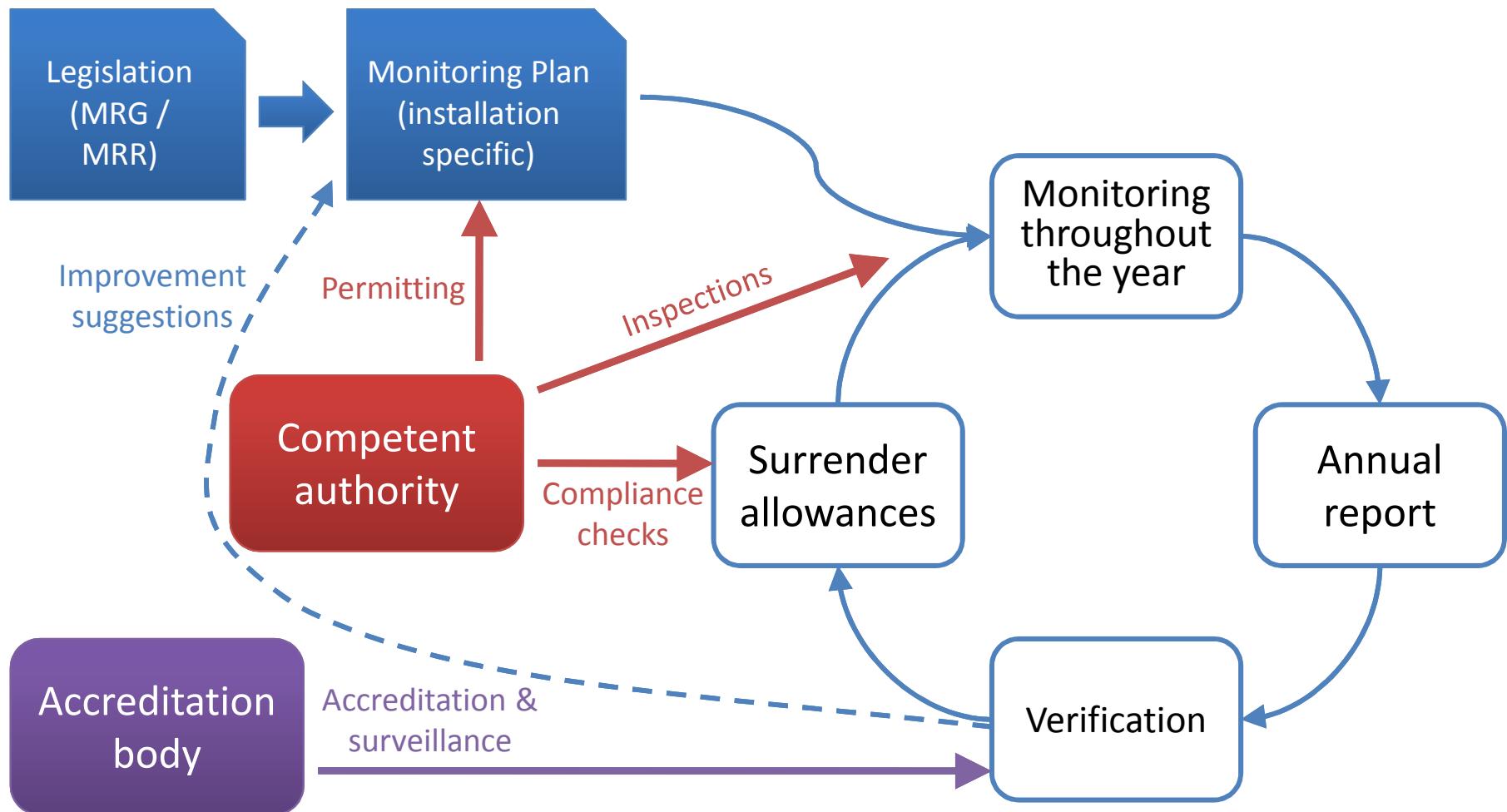
Stand: 31.03.2012

Source: German Emissions Trading Authority 2012

- ▶ Germany: energy accounts for 2/3 of installations, but for almost 80% of all ETS emissions (351 out of 450 Mt)
- ▶ Large number of energy installations (1,100), but smaller number of companies involved: top five utilities account for ~250 Mt)
- ▶ Average emissions at 319,000 tons/a in energy, 183,000 t/a in industry



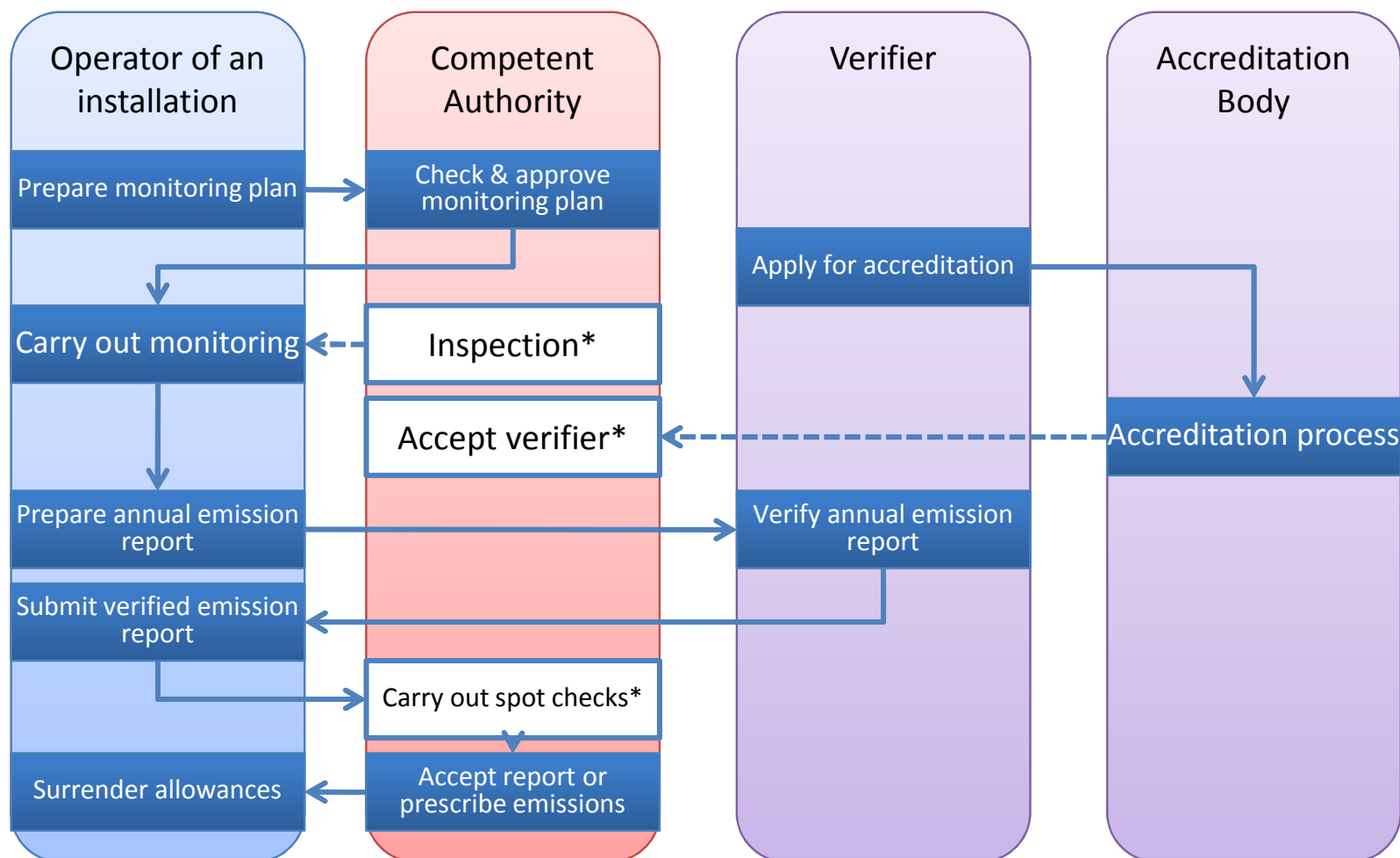
Elements of MRV(A) – the compliance cycle



based on Fallmann 2011



Roles and responsibilities in the MRV(A) process



*not practised in all EU Member States

based on Fallmann 2011

Basis for monitoring: the Monitoring Plan

- ▶ Operator has to draft a Monitoring Plan (MP): a **detailed, complete** and **transparent** documentation of the monitoring methodology of the installation, describing:
 - ▶ configuration and complexity of the installation/facility, its activities, emission sources, source streams and their location etc.
 - ▶ how the responsibilities in the installation for the monitoring and reporting of emissions are managed and assigned
 - ▶ procedure for evaluation of the MP, its functioning and possibilities for improvement
 - ▶ control activities of an operator to manage the risks of misreporting, i.e. mistakes in the monitoring and the flow of data

based on Deckers 2012

Basis for monitoring: the Monitoring Plan (II)

- ▶ In particular, the Monitoring Plan shall describe:
 - ▶ monitoring methodology (approach) per emission source or source stream: calculation based approach or continuous emission measurements (CEMS)
 - ▶ measurement equipment, location and quality assurance (calibration etc.), the required level of accuracy (tier)
 - ▶ for calculation approach: how activity data are determined, how calculation factors are determined (e.g. default values or analysis)
 - ▶ for analysis of calculation factors: how the sampling in the installations is organised, etc.

based on Deckers 2012

Annual Emission Reports

- ▶ What has to be reported?
 - ▶ Amounts of fuels and materials consumed
 - ▶ Emission factors, net calorific value (NCV), oxidation factor, biomass content
 - ▶ Resulting emissions
 - ▶ Information on uncertainties
- ▶ All elements reported on an annual basis
- ▶ Not reported: Production data



Methods to determine emissions

- ▶ Building block system – in an effort to balance the costs of the process and the quality of the data, taking into account specific circumstances
- ▶ As far as possible, use available data and existing equipment
- ▶ Generally, the larger the emissions volume, the higher the quality requirement

Methods to determine emissions: the Tier approach

- ▶ Category **B** and **C** installations (> 50 kt CO₂/a) must meet highest tiers (defined in the activity-specific Annexes of the MRR)
- ▶ Category **A** installations (≤ 50 kt CO₂/a) must meet minimum tier requirements (defined in Annex V, Tab. 1)
- ▶ **Small emitters** (< 25 kt CO₂/a) must also meet the minimum tier requirements but can use additional monitoring simplifications (Art. 47)
- ▶ **Lower tiers** are allowed for minor and de-minimis source streams as well as for pure biomass fuels and for technical or economical reasons if approved by the regional regulator

Tiers related to Activity Data and Emission Factors

▶ Activity Data:

- ▶ Tier 1: Uncertainty $\pm 7.5\%$
- ▶ Tier 2: Uncertainty $\pm 5.0\%$
- ▶ Tier 3: Uncertainty $\pm 2.5\%$
- ▶ Tier 4: Uncertainty $\pm 1.5\%$

▶ Emission Factors:

- ▶ Tier 1: IPCC standard factors
- ▶ Tier 2: Standard factors from national inventories
- ▶ Tier 3: Based on chemical analysis

Verification

- ▶ Goal is to create trust in the reported data through the opinion of an independent and competent body
- ▶ Under the EU ETS, this is carried out by a private entity
- ▶ Private verifier needs to be accredited
- ▶ Verifier assesses whether he can conclude with reasonable assurance
 - ▶ The data in the report are fairly stated (free from material misstatements)
 - ▶ The operator has complied with the approved monitoring plan
- ▶ Verifier shall also recommend improvements found during verification

Use of Information Technology in the MRV(A) process

- ▶ Reduces compliance costs, e.g. single data entries, automated reminders
- ▶ Can increase the transparency of the system
- ▶ Increases reliability of ETS data handling & processing
- ▶ Allows automatic timeliness and completeness checks
- ▶ Reduces the risk of transcription errors or human errors
- ▶ Enhances the capacity for reliable storage of data
- ▶ Offers potential for cost-effective data interrogation and analysis – also for other purposes - e.g. verification, input to the national emission inventories and improved national statistics

Challenges for an effective and efficient MRV

- ▶ Trade-off between quality, cost and timeliness – an impossible task?
- ▶ A ton must be a ton – but different regulatory cultures exist in the 30 EU ETS countries
 - ▶ E.g. definition of an installation – entire site, or individual units?
 - ▶ E.g. regular inspections at the installation, or emphasis on high-quality verification and supervision
- ▶ Common elements, standards, procedures needed to build up trust:
 - ▶ Transparency of the system rules
 - ▶ Existence of an effective control system



Thank you for your attention

Benjamin Görlach

Ecologic Institute, Berlin

benjamin.goerlach@ecologic.eu

www.ecologic.eu