

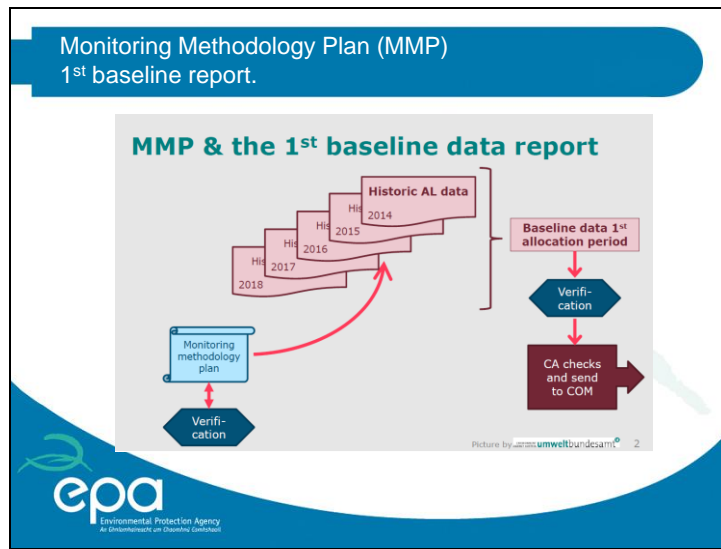
Slide 1

**Workshop on the Free Allocation Rules  
Monitoring and Reporting Requirements**

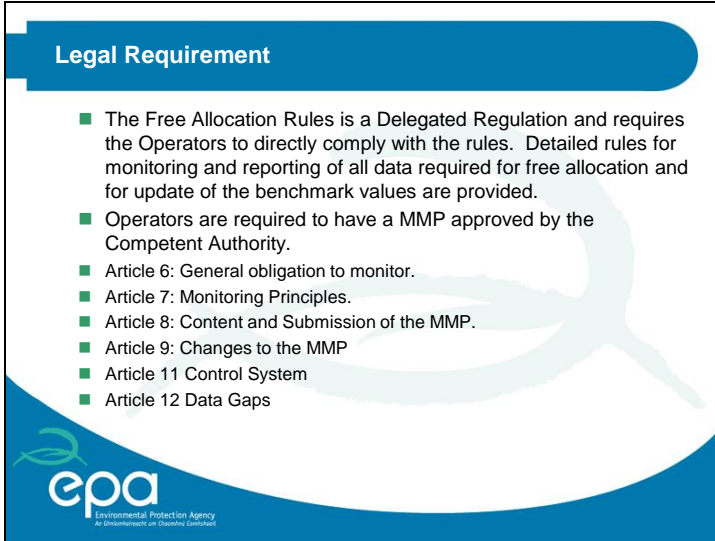


Environmental Protection Agency  
*An Ghníomhaireacht um Chaomhnú Comhshaoil*

Annette Prendergast  
27 February 2019








**Legal Requirement**

- The Free Allocation Rules is a Delegated Regulation and requires the Operators to directly comply with the rules. Detailed rules for monitoring and reporting of all data required for free allocation and for update of the benchmark values are provided.
- Operators are required to have a MMP approved by the Competent Authority.
- Article 6: General obligation to monitor.
- Article 7: Monitoring Principles.
- Article 8: Content and Submission of the MMP.
- Article 9: Changes to the MMP
- Article 11 Control System
- Article 12 Data Gaps

  
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Due to timing constraints it is acknowledged that such approval for the MMP is not possible in time for submission of the first baseline data report in May 2019. The verifier will have to validate the MMP for the first submission of baseline data reports, similar to what was done with methodology reports for the third phase; this entails checking that it is in compliance with the FAR.

## Parameters for baseline data collection

- Annex IV of the FAR: Operators shall submit for the purposes of the baseline data report, the following data at installation and sub-installation level for all calendar years of the relevant baseline period. For new entrants, the data report shall cover the data listed in sections 1 and 2. Data requirements include the following please refer to the Annex IV text for complete list.
- General installation data (identification, Verifier information, Annex I activity, NACE codes, eligibility for free allocation, list of sub-installations and technical connections)
- Detailed annual verified emissions data for each baseline year.
- Annual emissions per sub-installation.
- Detailed annual installation wide balance of heat import, production, consumption and export.
- Annual attribution of energy to sub-installations (energy input from fuels, measurable heat imported and exported)


### Parameters for baseline data collection

- Annual installation-wide balance of electricity import, production, consumption and export.
- The amount of measurable heat attributed to sub-installation imported from non-EU ETS entities or processes;
- If applicable, for each sub-installation, a list of products produced within the boundaries of the sub-installation, including PRODCOM codes.
- For the carbon leakage heat benchmark sub-installation, in case of export of measurable heat to installations or entities not covered by the EU ETS, the NACE-4 codes (NACE rev. 2) of those installations or entities.
- Annual activity data for product benchmark sub-installations. This includes special requirements for transferred CO<sub>2</sub>, lime and dolime, refinery annual through put for each CO<sub>2</sub> weighted tonne, import/export of intermediate products

Parameters for baseline data collection  
Data for benchmark update

**Annual data for product benchmark sub-installation**

- A list of products produced at PRODCOM level.
- Activity level
- Attributed emissions
- Measurable heat imported and exported
- Detailed information on waste gases if applicable
- Exchangeable electricity consumed
- Quantity of electricity produced
- Transferred CO2 imported/exported
- Export or import of intermediate products



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Parameters for baseline data collection  
Data for benchmark update

**Heat benchmark and District Heating sub-installations annual data**

- Quantity of net measurable heat produced within each benchmark.
- Emissions attributed to production of measurable heat
- Activity level of the sub-installation
- Quantity of measurable heat produced, imported from and exported to other sub-installations, installations or other entities
- Quantity of electricity produced

**Annual data for fuel benchmark sub-installations**

- Activity level;
- Attributed emissions.




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MMP Content and Guidance Document 5

- Annex VI of the FAR sets out the minimum content of the MMP. See chapter 5 of GD 5 for detailed guidance.
- MMP has to contain
  - Installation description (processes, sub-installations,...)
  - Flow chart / diagram showing material and energy flows (and measuring instruments, sampling points)
  - “**everything that has to be reported**” in baseline data report
  - **Backward**-looking methodologies for historical data as well as instructions for future monitoring (**forward**-looking)
- Too detailed or frequently changing elements should be put into procedures (no formal approval needed for updates)
- Commission has published MMP template




The slide features a blue header with the title 'MMP Content and Guidance Document 5'. The main content is a bulleted list with green square markers. The list includes a reference to Annex VI of the FAR, a section on what the MMP must contain (with sub-bullets for installation description, flow charts, reporting requirements, and methodologies), a note on handling detailed or changing elements, and a statement that the Commission has published a template. In the bottom left corner, there is the EPA logo, which consists of the letters 'epa' in a stylized font, with 'Environmental Protection Agency' and 'An Umweltbundesamt am Deutschen Bundestag' written below it.

Please refer to Guidance Document 5 available on the Commission website.

## Developing the MMP Chapter 5

- Know your installation – keep it simple
  - use existing, reliable data sources,
  - keep data flow short, have effective controls
- Think like a verifier, and be open to improvement
- Determine the relevant sub-installations
- Determine necessary data sets to be monitored
- Determine for each data set
  - Primary data sources and (where possible) corroborating data sources
  - for historic data as well as for monitoring data
- Establish the internal control system
- Do completeness checks
  - use MMP or baseline data report template as checklist




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### MMP approval Timing

- Submit MMP for approval with the baseline data report by 30 May 2019.
- Verifier has to validate (backwards looking part of the) MMP (2014-2018 data monitoring).
- New Entrants submit MMP together with NE application after the first calendar year of Operation.
- Art. 6 of FAR MMP to be approved by Competent Authority (CA) by 31 December 2020.
- If an operator has renounced free allocation for the first allocation period, but decides to apply for free allocation again for the next allocation period the MMP must be submitted by 30 November 2023.

## MMP Approval

- The MMP is the crucial instrument for ensuring the consistency and quality of FAR-related data.
- The Competent Authority check the following in approving:
  - Is the MMP complete? Are the required descriptions and diagrams attached? Are all data sets required for the baseline data report covered (including, where relevant, description of the different data sources for historical and monitoring data.
  - Transparency: Are the description of the installation, its processes and sub-installations and the attached diagrams sufficiently clear for understanding .
  - Is the MMP compliant with the requirements set out by the FAR? In particular, are data sources of highest available accuracy used, and if not, are the deviations sufficiently explained and relevant evidence attached (evidence for unreasonable costs, technical feasibility, or simplified uncertainty assessments, as relevant)



**Monitoring and Control system FAR**

- Article 9.1 of the FAR- The Operator shall regularly check if the MMP reflects nature and functioning of installation and if it can be improved. Refer to detailed requirements in the FAR.
- Article 11 of the FAR-The establishment of a Control System is required consisting of a risk assessment and effective control procedures which mitigate the identified risks.
- Article 12 governs data gaps. For avoiding and closing data gaps there is a need to have a “corroborating data source” readily available – also used for temporary unavailability of the primary data source. Use conservative approach to close data gaps. List and justify data gaps in the baseline data report.


Article 9(2) lists a minimum of situations in which an MMP update is mandatory: *“(a) new emissions or activity levels occur due to new activities carried out or due to the use of new fuels or materials not yet contained in the monitoring methodology plan; (b) the use of new measuring instrument types, new sampling or analysis methods or new data sources, or other factors, lead to higher accuracy in the determination of reported data; (c) data resulting from the previously applied monitoring methodology has been found incorrect; (d) the monitoring methodology plan is not, or no longer, in conformity with the requirements of this Regulation; (e) it is necessary to implement recommendations for improvement of the monitoring methodology plan contained in a verification report.”*

#### *Control System*


Since the requirements of the FAR are very similar to those of the MRR, operators are advised to use the same procedures and control measures as developed for the MP for AEM and extend them to all relevant data sets of the MMP. (quality assurance of measurement equipment and IT, segregation of duties, internal review and validation of data, corrective actions, control of outsourced processes, record keeping)

### Monitoring rules - principles

Annex VII Section 3 FAR	Annex VII section 4 FAR
<p>Use a method specified by Annex VII of the FAR.</p> <ul style="list-style-type: none"><li>•If this is not possible:</li><li>•Method based on EN standard</li><li>•ISO or national standards</li><li>•Draft standards, industry best practice, other scientifically proven methods</li></ul>	<p><b>Best available data sources</b></p> <ul style="list-style-type: none"><li>•Apply rules and hierarchy of approaches (Annex VII 4.4-4.6).</li></ul> <p>Deviation needs to be justified:</p> <ul style="list-style-type: none"><li>•Technical feasibility</li><li>•Unreasonable costs</li><li>•Uncertainty assessment</li></ul>



The EPA logo is located at the bottom left of the slide. It features a stylized green leaf icon to the left of the lowercase letters 'epa' in a bold, sans-serif font. Below 'epa', the text 'Environmental Protection Agency' is written in a smaller font, followed by the German text 'An Umweltbundesamt an der Bundesregierung' in an even smaller font.



**Approach to attribute data to sub-installations Annex VII 3.2 FAR**

- Split without meters (Annex VII 3.2, point 1):
  - Split based on use time of physical units
  - Split based on other suitable, correlated parameters:
    - Production ratios
    - Ratios of free reaction enthalpies
    - Other methodologies based on sound science
- Direct metering (Annex VII 3.2, point 2):
  - Differential metering
  - Reconciliation factor

Where data for a specific data set are not available for each sub-installation, the operator shall propose an appropriate method for determining the required data for each individual sub-installation. Chose the methodology that gives the most accurate results.

3.2 1(a) Where different products are produced one after the other in the same production line, inputs, outputs and corresponding emissions shall be attributed sequentially based on the usage time per year for each sub-installation.

3.2 1 (b) Inputs, outputs and corresponding emissions shall be attributed based on the mass or volume of individual products produced or estimates based on the ratio of free reaction enthalpies of the chemical reactions involved or based on another suitable distribution key that is corroborated by a sound scientific methodology.

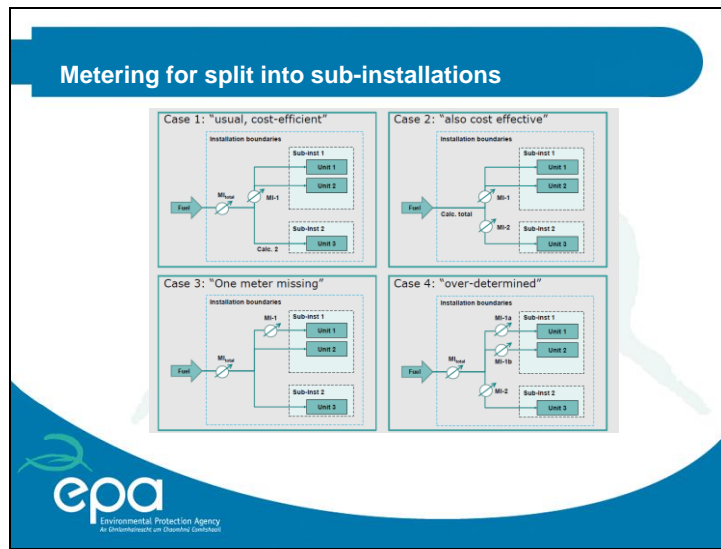
2. Where several measurement instruments of different quality are contributing to measurement results, either of the following methods shall be used for splitting installation-level data on quantities of materials, fuels, measurable heat or electricity to sub-installations:

2.(a) Determination of the split based on a determination method, such as sub-metering, estimate, correlation, used equally for each sub-installation. Where the sum of the sub-installation data is different from the data determined separately for the installation, a uniform “reconciliation factor” shall be applied for uniform correction to meet the total figure of the installation.

2(b) If only one sub-installation’s data are unknown or of lower quality than the data of other sub-installations, known sub-installation data may be subtracted from the total installation data. This method is preferred only for sub-installations which contribute smaller quantities to the installation’s allocation.








**Selecting the most accurate data source**

- Article 7 of the FAR require the operator to use “*data sources representing highest achievable accuracy pursuant to section 4 of Annex VII*”
- GD 5 section 6.6 explains:
  - The selection process (Annex VII section 4.3)
  - The hierarchy of approaches (Annex VII section 4.4 – 4.6). This is applicable to all types of material inputs and outputs at installation and sub-installation level.
- Technical feasibility (Annex VII section 4.1)
- Unreasonable costs (Annex VII section 4.2)
- Simplified uncertainty assessment ( MRR GD 4)




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## Hierarchy of approaches

- The FAR in Annex VII sections 4.4 to 4.6 provide a hierarchy for different generic types of data sets. The first one or two points listed are considered “highest accuracy” which are the methods the Operator is required to use, the other methods listed are considered second-best to worst in descending order.
- Article 7 allows the following deviations:
  - A data source of lower assumed accuracy may be used if the operator can demonstrate that data sources of higher accuracy would be technically not feasible or would incur unreasonable costs
  - If based on a (simplified) uncertainty assessment the chosen data source scores better than the alternative.

**Hierarchy of approaches**  
**- Quantities of fuels and materials**

- Best: Approved with MP
- Best: Instruments under MID (Measurement Instruments Directive) , NAWI(Non-Automatic Weighing Instruments Directive), NLMC (National Legal Metrological Control)
- Other instruments under the operators control
- Other instruments not under the operator's control
- Indirect determination methods (implicitly: same preferences as bullet points above)
- "Other methods"

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Where data is needed at installation level, data in conformance with the approved MP under the MRR is considered best quality and should always be used.

For all data sets not yet included in the MP under the MRR the choice is based on more qualitative criteria.

Measuring instruments under national legal metrological control, or complying with the MID or NAWI are preferred over other instruments.

Next best are other instruments under the operator's control as the operator has all necessary information and means to perform relevant calibration and maintenance of the instruments.

If there are no instruments under the operator's control, the next best solution is measurement instruments not under his control (e.g. the fuel supplier's instruments).

Next in the hierarchy are measuring instruments for indirect determination of data sets in combination with appropriate correlations . Although not explicitly mentioned in the FAR, the operator may again have a choice between instruments for indirect determination of data, and there again the hierarchy regarding legal metrological control and operator's own control would apply.


If all else fails, the FAR allow "other methods", in particular for historical data. This would be comparable to the "No-tier approaches" of the MRR.



**Hierarchy of approaches  
Quantification of energy flows**

Section 4.5 of FAR Annex VII applies to “energy flows”, i.e. (net) flows of measurable heat and electricity. Refer also to section 3.4 and section 7.2 of Annex VII.

- Best: Instruments under NLMC
- Other instruments under the operators control
- Other instruments not under the operator’s control
- Instruments for indirect determination of the data set in accordance with section 3.4. (implicitly: same preferences as bullet points above)
- Using a proxy based on efficiency (method 3 of VII 7.2)
- “Other methods”
- Refer to section 7.2 Annex VII for methodologies for determining net amounts of measurable heat.
- For uncertainty assessment all parameters needed for determining net heat flow have to be considered

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FAR Annex VII section 3.4 provides a broad range of indirect methodologies, in particular for the attribution of measurable heat to sub-installations, as heat meters are often not sufficiently available, and heat consuming processes are very diverse (such as driving (endothermic) chemical reactions, heating, drying, distilling of materials, space heating, disinfection, etc.)

- *calculation based on a known chemical or physical process*
- *calculation based on the installation’s design data such as the energy efficiencies of technical units or calculated energy consumption per unit of product;*
- *correlations based on empirical tests for determining estimation values for the required data set from non-calibrated equipment or data documented in production protocols*

All specified amounts of measurable heat shall always refer to *net* amount of measurable heat, determined as the heat content (enthalpy) of the heat flow transmitted to the heat consuming process or external user minus the heat content of the return flow.


The hierarchy clarifies that method 3 for measurable heat determination (based on a proxy, see section 7.2 of FAR Annex VII, explained in section 6.9 of GD 5) is considered inferior compared to the other methods provided in that section 7.2 of Annex 21 VII.

FAR Annex VII section 7.2 methods for determining net measurable heat in descending order.

- Method 1: Using measurements. In case the condensate is not returned or its flow unknown, a reference temperature of 90°C is to be used.
- Method 2: This method is meant for historical data only, as it refers to "*documents based on metering or estimation methods*".
- Method 3: This builds on the energy input of all fuels, and determines the net heat flow based on the known efficiency of the boiler. It refers to "measured efficiency" because the operator is advised to measure it "*over a reasonably long period*". Alternatively, the efficiency can be taken from the boiler manufacturer's documentation .
- Method 4 is meant for situation where "all else fails. Conservative assumption is that the efficiency would be 70%.

**Hierarchy of approaches**  
**Properties of materials**

- Best: Approved with MP (for “calculation factors”)
- Best: Laboratory analyses (Annex VII 6.1 = in accordance with MRR Art. 32 to 35, i.e. in accredited Lab etc.)
- Simplified analyses (Annex VII 6.2 = industry best practice etc.)
- Constant values “type II” (like MRR tier 2)
- Constant values “type I” (like MRR tier 1)

  
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### Hierarchy of approaches - Sources for historical data

Not FAR rules, but guidance provided by GD5:

- Documents or electronic data (invoices etc.) in context of commercial transactions between independent trade partners
- Other documentation which has undergone audits (e.g. financial audits)
- Internal documents like cost attribution or pro forma invoices used to allocate energy or raw material costs to different products or business units within an installation, where trade partners are not independent entities, but perform independent review of the data.
- Other internal documentation not undergone internal control activities

Sources of Information

- FAR Regulation
- [https://eur-lex.europa.eu/resource.html?uri=cellar:86d7e8c2-03a3-11e9-adde-01aa75ed71a1.0008.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:86d7e8c2-03a3-11e9-adde-01aa75ed71a1.0008.02/DOC_1&format=PDF)
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- Commission Website
- [https://ec.europa.eu/clima/policies/ets/revision\\_en](https://ec.europa.eu/clima/policies/ets/revision_en)
- Commission Guidance Documents (Under Documentation Phase IV section)  
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