



**CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE**

Monitoring and verification for energy efficiency measures in Member States

Executive summary 1.5/8.5

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1 Summary

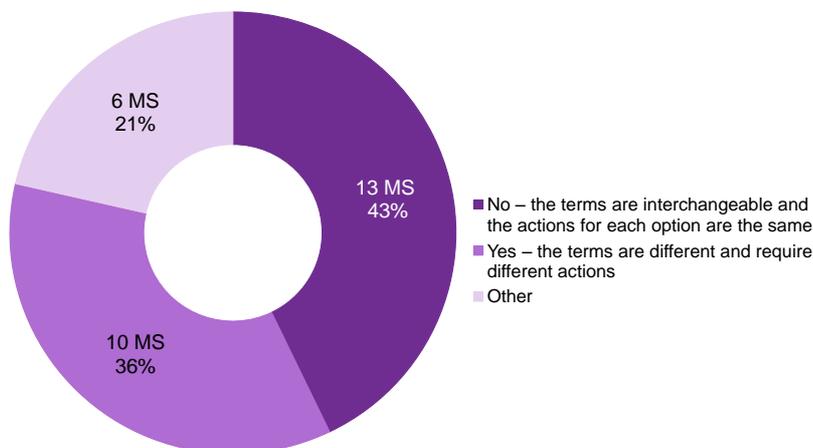
Article 3 of the Energy Efficiency Directive (EED) contains requirements for reviewing and monitoring the implementation of policies and measures. These are closely related to and cross-cutting with topics around monitoring impacts and verifying energy savings of eligible measures in the framework of Article 7 of the EED. The work carried out on this topic aimed to provide an understanding of the terminology for actions requiring ‘monitoring and verification’ and ‘measurement, control and verification systems’ (Article 7(6) and 7 (10)); to create an overview of Member State (MS) progress; and to identify the main challenges for MS in setting up monitoring systems.

This report is based on information provided by MS via a questionnaire (January 2015) and input received during the sessions at the Plenary Meeting in Riga in March 2015.

Understanding of the terms ‘measurement’ and ‘monitoring’ differs in MS

In Article 7 of the EED, different terms are used - ‘measurement’ for obligation schemes and ‘monitoring’ for alternative measures. Feedback from the MS makes evident that they have different views as to whether ‘measurement’ as it refers to obligation schemes and ‘monitoring’ as it refers to alternative measures should be interpreted differently or not. About two thirds of MS responding to the questionnaire (19) see little or no difference between the terms, whilst about one third of responding MS (10) do see a difference between the terms, to varying degrees. Only one MS noted that there is no clear understanding of the terms. Different understanding of the terms may influence how MS are implementing Article 7 measurement/monitoring and verification requirements.

Figure 1: Understanding of the terms ‘measurement’ and ‘monitoring’



Measurement/monitoring and verification vary by MS and measure

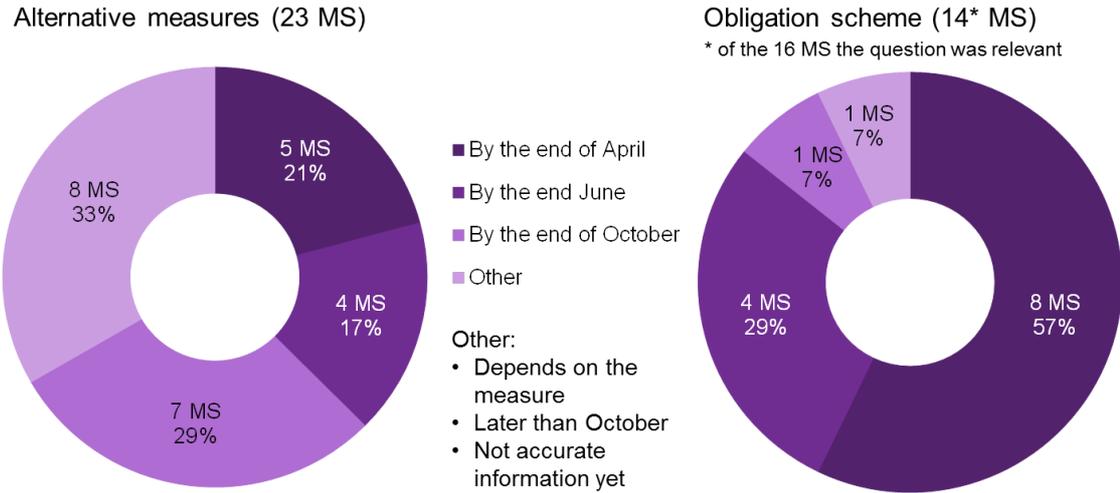
23 out of 27 MS are using alternative measures whilst 12 MS are using combination of obligation schemes and alternative measures. From our analysis, it is clear that - in most MS - there is not one single measurement/monitoring and verification system in place, but that systems vary depending on the measure. This is also the case in those 12 MS who have chosen a combination of an obligation scheme and alternative measures to fulfil Article 7 requirements. Of these, only 5 MS are planning to use the same organisation for monitoring/measurement, verification and control both for the obligation scheme and alternative measures.

The analysis showed that there are differences between MS as regards their approaches to fulfilling the monitoring/measurement, control and verification requirements of Article 7. Discussion between MS served to highlight issues of special importance and to propose solutions to overcome the challenges identified.

Previous year's energy savings are mainly not available for annual reports and NEEAPs

In most responding MS (19), the previous year's energy savings related to Article 7 implementation are expected to be available after April of the following year. This means that energy savings reported in most MS' annual reports and National Energy Efficiency Action Plans (NEEAPs) will be for the year $x-2$ (x = current year). Only 3 MS using only an obligation scheme, 2 MS using a combination of an obligation scheme and alternative measures and 3 MS using only alternative measures (total 8 MS) reported they would be able to deliver all data on the previous year's energy savings by the end of April of the following year. This shows that most MS will be able to report the results of the year $x-2$ in annual reports and the NEEAPs, affirming a fact that was discussed and confirmed during the EED negotiations.

Figure 2: Estimated timing for availability of the previous year's energy savings



2 Recommendations/Conclusions

Understanding of the terms ‘measurement’ and ‘monitoring’

The discussions between MS revealed that there is no universal interpretation of the terms “monitoring” (for alternative measures) and “measurement” (for obligation schemes) among MS. The following table summarises the key words associated with each term, identified through MS discussions (note that not all participants agree with all terms under each heading).

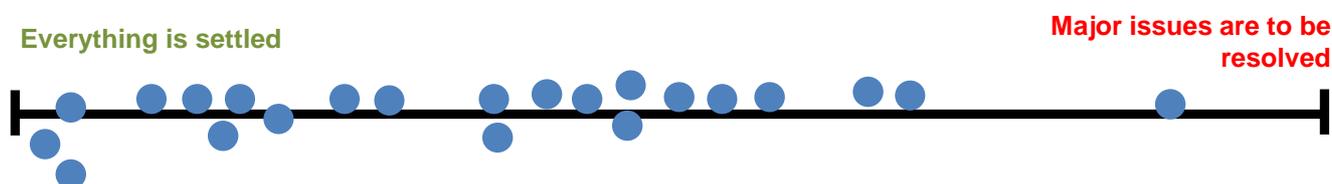
Measurement	Monitoring
<ul style="list-style-type: none"> - Technical - Specific energy savings - Calculation - Includes physical measurement - One point of observation - Need to define specific measurement boundary - Policy specific methodology - Not always possible in practice - Can give primary information for monitoring 	<ul style="list-style-type: none"> - Political - Overall consumption - Record, tabulate - May / may not include physical measurement - Continuous process - May be linked to a policy, group of policies or measures - National level approach - Broader than measurement

Discussions showed that, although a number of MS think the terms monitoring and measurement are interchangeable, many MS still have different interpretations of these two terms, the level of effort associated with fulfilling them and whether or not this impacts on the control and verification system to be put in place by MS. It was also highlighted that different measures need different actions, thus a complete harmonisation of measurement/monitoring, control and verification requirements is not possible. It is however important that the methods applied follow a consistent philosophy of approach.

Measurement/monitoring and verification vary by MS and measure

MS participants were asked to assess the progress of their MS in setting up the measurement/monitoring systems for Article 7. Each MS could be placed on a scale from “everything is settled” to “major issues have to be resolved”. Figure 3 shows that MS progress in installing their measurement/monitoring, control and verification schemes differs. However, it was observed that the set-up of such schemes is under way in all MS.

Figure 3: Progress in setting up the measurement/monitoring systems in MS



The main elements still missing in MS include:

- **Basics:** e.g. basic national regulation and rules on M&V, the set-up of the monitoring system, financing
- **Processes:** definition of statistically significant proportion/sample, definition of the control mechanism
- **Data collection, reporting:** More advanced database, pooling of information, data collection, identification of all measures needed
- **Methods:** Definition of the baseline, definition of methods (including lifetimes of measures)

Several challenges and some possible solutions to overcome them were identified. As can be seen from the following table, MS are in need of good practice examples for how to overcome most of the challenges identified.

Setting up the scheme	
Challenges	Solutions
Follow all Annex V rules which do not fit to all measures	Review Annex V in order to make sure that requirements are reasonable and can be fulfilled in all MS and for all measures with reasonable costs
High costs → resources (human and financing issues)	Leave large degree of freedom to the obligated parties
Control vs. simplicity	
Getting the right level of detail	
Development of relevant expertise	
Unique key identifier for implemented measures (especially to identify double counting)	
Definition of calculation methods (e.g. soft measures)	
Harmonisation of (several) different databases	
Running the scheme	
Challenges	Solutions
High amount of required human and financial resources	Review Annex V in order to make sure that requirements are reasonable and can be fulfilled in all MS and for all measures with reasonable costs
Administrative burden	
High volume of data to check	
Identifying double counting	Involve obligated parties/third parties (e.g. ESCOs) in the measurement system
Assessing the credibility of savings/estimate/evaluation	
Monitoring in the case of some measures	

It is recommended that the topic of measurement/monitoring, control and verification remains a high priority on the agenda of CA EED.

3 Practical Examples

German National Action Plan on Energy Efficiency (NAPE)

The German National Action Plan on Energy Efficiency (NAPE) was launched on 3rd December 2014 and builds on three main pillars: (1) Stepping up energy efficiency in buildings; (2) Energy efficiency as a return and business model; and (3) Individual responsibility for energy efficiency. The introduction of a competitive tendering scheme for energy efficiency measures and the implementation of an energy efficiency network are innovative elements of the NAPE.

More detail is available in the presentation on the CA EED website www.eed-ca.eu/good-practices/member-state-presentations/energy-efficiency-and-obligation-schemes/monitoring-and-verification-systems-for-energy-efficiency-art.7 (>National Action Plan on Energy Efficiency (NAPE) – Germany).

The Italian bottom-up approach for measuring and monitoring

Italy presented its approach for bottom-up monitoring in the framework of the implementation of Article 7. The savings target in relation to Article 7 is planned to be achieved by means of three measures:

- White certificate scheme (EEO)
- Tax deduction for improving the energy efficiency of existing buildings
- Thermal account to promote energy efficiency in public administrations

The three incentive schemes cannot be combined in the framework of Article 7 implementation. Data on implemented projects is processed for each scheme in a respective database. The information from these three databases is used to cross-check projects and savings from the three schemes and to identify possible double counting.

More detail is available in the presentation on the CA EED website www.eed-ca.eu/good-practices/member-state-presentations/energy-efficiency-and-obligation-schemes/monitoring-and-verification-systems-for-energy-efficiency-art.7 (>The Italian bottom up approach for measuring & monitoring – Italy).

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The Concerted Action for the Energy Efficiency Directive (CA EED) was launched by Intelligent Energy Europe (IEE) in spring 2013 to provide a structured framework for the exchange of information between the 29 Member States during their implementation of the Energy Efficiency Directive (EED).

For further information please visit <http://www.ca-eed.eu/> or contact the CA EED Coordinator Lucinda Maclagan at lucinda.maclagan@rvo.nl



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