CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE

Measuring progress in energy efficiency

Executive summary 1.5

NEEAPs and annual reports and measuring progress in energy efficiency

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1 Summary

According to the Energy Efficiency Directive (EED) (Article 24(1) and Annex XIV Part 1), Member States (MS) need to provide an annual report including analyses of the energy trends in sectors where energy consumption remains stable or is growing. The aim of this topic was to investigate MS understanding and implementation of this EED requirement. In addition, the use of decomposition methodology across the MS was investigated. Annual reporting and the potential for energy savings in the EU to 2030 were also discussed.

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.

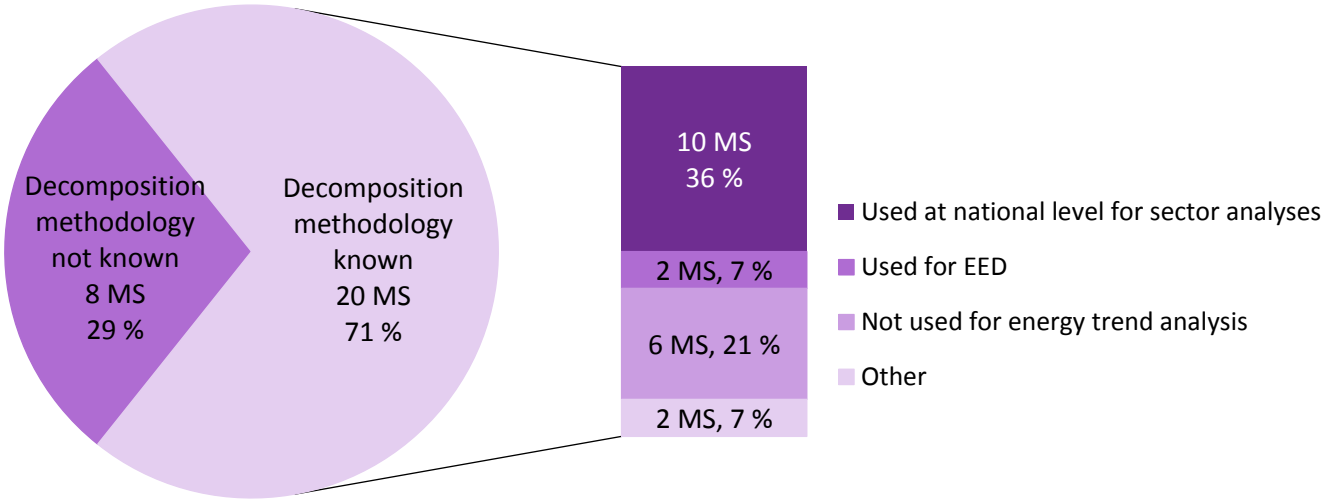
Some MS would be happy to get more guidance on analysing energy trends

The survey showed that the majority of MS are fulfilling the requirement to analyse the reasons why energy consumption remains stable or is showing an increasing trend in specific sectors. However, among these, there are also MS that would benefit from more guidance. Guidance was also sought by almost one third of the MS that stated that they have not analysed these energy trends.

Decomposition methodology is quite well known, but not used for EED

One of the tools which could be used to perform the analyses required by the EED (Annex XIV Part 1) is decomposition methodology. The survey showed that it is a well-known methodology, predominantly used for energy trends analysis at national level for sector-specific analyses. However, only 2 MS declared that they use the methodology for EED purposes. This shows that there is potential for promoting the methodology further as a tool for the fulfilment of EED requirements.

Figure 1: Familiarity with and use of decomposition methodology across 28 MS



ODYSSEE database includes a new decomposition facility to analyse energy trends

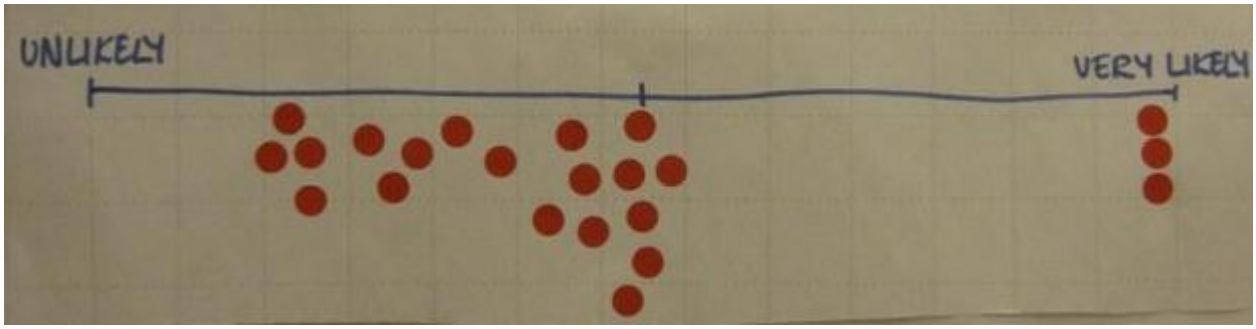
An insightful, easy to use web-tool has been developed as part of the IEE-project ODYSSEE-MURE to complement the ODYSSEE database (www.indicators.odyssee-mure.eu/). This allows MS to analyse energy trends using decomposition, where sufficient national (approved) data has been provided to the database. The benefits of the methodology include the level of disaggregation of influences on energy demand available to describe trends (e.g. activity effects like variation of production, number of employees or number of dwellings in households as well as structural change, climate influence and lifestyle effects, such as building size and number of appliances, together with the impact of savings from efficiency).

Issues associated with the applicability of the ODYSSEE facility for reporting against EED Annex XIV include:

- it is not yet possible to report on year 'x – 2' where data is only available in the ODYSSEE database for 'x – 3';
- the requirement to use some non-official data in some cases;
- the interpretation of the residual or remainder fraction of the decomposition;
- the need to have a top-down estimate for energy savings using an approved (preferred or alternative) indicator given the technique is based on top-down principles.

A methodological solution in ODYSSEE has been found to deal with so called 'negative-savings' by assuming technical efficiency remains stable during such periods as shown by the analysis.

Figure 2: How likely is it that MS (22 responses) will use decomposition methodology to analyse energy trends for EED Annual Reports in the future?



Experiences of using decomposition methodology

Ireland highlighted in their presentation that a comparison of top-down (TD) vs. bottom-up (BU) energy savings was provided. The TD method produced a higher estimate than the BU analysis, an expected result given the impact of price effects and non-policy (autonomous) savings that would be included in the TD figure. As mentioned earlier, the ODYSSEE decomposition facility is based on TD energy savings. Ireland has sufficient data to report a decomposition for the residential heating sector. They are working to improve the robustness of the data for other sectors and sub-sectors over time on the basis that while some effort is required to produce robust data, the decomposition methodology can provide insights useful for policy making.

The Commission is preparing a guidance table to harmonise Annual Reporting

The Directorate General for Energy within the European Commission (DG ENER) highlighted MS reporting requirements under Article 24 (1) and Annex XIV Part 1 related to EED annual reporting. DG ENER is currently working on an assessment of 2013 and 2014 annual reports. The next reports by the MS were due on 30 April 2015.

In addition, DG ENER suggested the use of ESTAT data from the previous year and provided examples of other data and presentation requirements. In particular, DG ENER highlighted that MS should provide information on the definitions behind their reported data. If MS would report data in a consistent way (e.g. based on ESTAT data), this would help the Commission to report on EU progress in a meaningful and aggregated way. During the discussion, some clarifications on timing and content were sought, especially regarding the reporting requirement of Annex XIV part 1 (e). It was pointed out by the participants that EED does not require MS to report energy savings achieved through the national energy efficiency obligation schemes referred to in Article 7(1) or the alternative measures adopted in application of Article 7(9) from the previous year (x-1). Most MS mentioned that they are not able to report previous year savings by the end of April; this has previously been discussed during both the ESD (Energy Services Directive) and EED processes and was also re-confirmed in the participant responses to the questionnaire issued ahead of this report.

Scenarios for energy savings potential to 2030 in the EU

FHG-ISI presented the results of work commissioned by the Commission related to scenarios for energy savings potential to 2030 in the EU. The presentation highlighted how data was sourced and used to estimate different potentials for energy efficiency savings (EU wide) over the period to 2030. A number of scenarios for 2030 were created to analyse how EU primary energy demand to 2030 might evolve. It was clear that the more ambitious

targets (in the order of 40% reduction by 2030 on a 2007 baseline) would involve higher up-front system costs; while a full assessment of other benefits was not yet available, it is likely that these too would be higher with more ambitious energy savings targets. According to the results presented, economically viable energy savings of 40% in primary energy terms could be achieved by 2030 raised some discussion. This focused on technical issues such as the importance of discount rates used at two levels in the analysis (i.e. at the technology cost/benefit level as well as for characterising the behaviour of consumers when considering purchase of energy efficiency technologies) and their impact on the results.

2 Conclusions

ODYSSEE decomposition facility

The ODYSSEE decomposition facility is one possible method to help MS analyse energy trends as required in EED annual reports. Some of the issues raised included:

- In their 2015 annual reports, MS need to analyse data for the year 2013 compared to the year 2012 − at the moment, the latest available years in ODYSSEE are 2011/2012
- The facility is easy to use but an understanding of the figures and assumptions used is needed
- Interesting policy insights are available as to the drivers of energy demand; however, good data is required as an input

Reporting proposal for Annual Reports coming from the Commission

At the Plenary Meeting, the Commission confirmed it would send all EED Committee members a proposal related to the data definitions used in annual reports to make them more comparable.

- The idea is to enable the Commission to produce an aggregated report for the EU based on MS reports
- The guidance presented about the reporting of Article 7 savings raised discussion, especially regarding the proposed year of the energy savings (x-1) to be reported as compared to EED requirements and practical possibilities in most MS
- Annual reports for 2015 were due at the end of April

Energy efficiency potential in the EU in 2030

Energy efficiency potential in the EU in 2030 report: Many participants felt that the scenario of economically viable energy savings of up to 40% by 2030 seemed high.

It needs to be kept in mind that potential depends not only on technical potential but also on many assumptions on investment cycles, energy prices, capital costs, activity levels, etc. Assumptions around discount rates are crucial in this regard.

3 Practical Examples

Ireland provided insight to their approach to addressing EED Annex 14 Part 1 requiring MS to report reasons for sectoral energy trends where they are stable or increasing. IEE ODYSSEE-MURE project presented the new decomposition facility in the ODYSSEE database. In addition, the Commission presented their proposal to harmonise the EED Annual Report data sources and reporting. The Commission report regarding EU level energy savings potential was also presented.

3.1 Member state examples

Decomposition of energy demand – Ireland

Ireland's approach to addressing EED Annex 14 Part 1 requiring MS to report reasons for sectoral energy trends where they are stable or increasing was highlighted. A major annual publication, already in existence prior to the EED is relied upon, but has been evolved to include further detail on sectoral trends using decomposition analysis.

The presentation is available at the CA EED website www.ca-eed.eu/good-practices/member-state-presentations/neeaps/measuring-progress-in-energy-efficiency-art.-3 (>Decomposition of Energy Demand – Ireland).

3.2 Other presentations

Decomposition analysis of energy demand, Methodology and ODYSSEE tool – ADEME

The presentation by the coordinator (ADEME/France) of the IEE-project ODYSSEE-MURE introduced the new decomposition feature in the ODYSSEE database (www.indicators.odyssee-mure.eu/decomposition.html) as one possible way of fulfilling EED Annex XIV Part 1 requirements to analyse sectoral energy trends where they are stable or increasing.

The presentation is available at the CA EED website www.ca-eed.eu/good-practices/member-state-presentations/neeaps/measuring-progress-in-energy-efficiency-art.-3 (>Decomposition analysis of the energy demand Methodology and ODYSSEE tool).

Article 24(1) EED, Annual report obligations – DG ENER

DG ENER has been preparing a draft template to be sent to the EED committee members for comments related to annual reporting and possible Eurostat data definitions to be used to make the Annual Reports comparable.

The presentation is available at the CA EED website www.ca-eed.eu/good-practices/member-state-presentations/neeaps/measuring-progress-in-energy-efficiency-art.-3 (>Article 24(1) EED Annual report obligations).

Energy efficiency potential in the EU in 2030: Results and underlying data – FHG-ISI

Presentation by FHG-ISI/Germany based on the project commissioned by the Commission related to the energy efficiency potential in the EU in 2030.

The presentation is available at the CA EED website www.ca-eed.eu/good-practices/member-state-presentations/neeaps/measuring-progress-in-energy-efficiency-art.-3 (>Energy efficiency potentials in the EU in 2030).

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Legal Disclaimer

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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