

MURE POLICY SCOREBOARD METHODOLOGY

The objective of the energy efficiency scoreboard tool is to assess and score the energy efficiency policies of the EU28 by country and by sector (households, transport, industry and services). The scoreboard shall provide for a suitable presentation of policy results and impacts through an energy efficiency policy scoreboard. The main advantage of such scoreboards is to present progress in policy development according to selected criteria over time and across countries.

The scoring methodology is based on the energy efficiency measures gathered in the MURE database.

There are **four main scoring approaches** presented:



Output-based scoring (based on energy savings): This scoreboard makes use of the information in the MURE database on energy savings (“policy output”) and **compares the savings with the final energy consumption of the sector or total final energy consumption** for a given year (at present 2010). By default the scoring period comprises measures from 2000 to present but other periods can be selected.



Output-based scoring (related to energy efficiency potentials): This scoreboard makes also use of the information in the MURE database on energy savings achievable with the present policies (“policy output”) but **compares the savings with the energy efficiency potentials** at the time horizon 2030. By default the scoring period comprises measures from 2013 to present but other periods can be selected.



Output-based scoring (related to 2020 energy efficiency targets): This scoreboard makes also use of the information in the MURE database on energy savings achievable with the present policies (“policy output”) but **compares the savings with the energy efficiency targets** at the time horizon 2020. By default the scoring period comprises measures from 2013 (the starting year of the EED) to present but other periods can be selected. The targets are either calculated as a flat 20% target for all countries or by taking the EED targets provided by the different EU Member States.



Input-based scoring: This scoreboard makes use of the information in the MURE database on the **inputs to energy efficiency policies** (e.g. amount of final subsidies) and normalizes the inputs with respect to the size of the country (e.g. Gross Domestic Product or Population) if necessary or other relevant parameters. By default the scoring period comprises measures from 2000 to present but other periods can be selected.

Output-based Scoreboard (related to energy consumption)

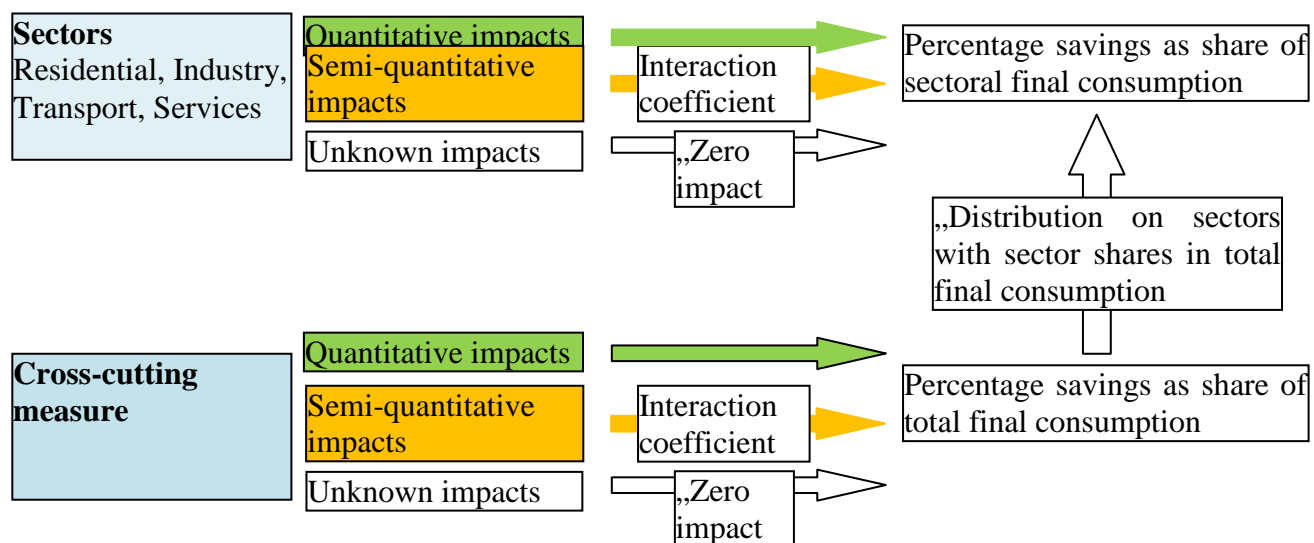
This scoreboard makes use of the information in the MURE database on energy savings (“policy output”) and compares the savings with the final energy consumption of the sector or total final energy consumption for a given year (at present 2010). By default the scoring period comprises measures from 2000 to present but other periods can be selected.

The information on impacts in terms of energy savings for each measure in the MURE database may take two forms:

- **Quantitative information** from dedicated evaluations of measure impacts, mostly from evaluations at national level. This information is gathered in formal tables and can be retrieved for the policy scoreboard. At present around 40% of all 2400 policy measures in the MURE database have such a quantitative policy impact evaluation.
- **Semi-quantitative expert estimates on measure impacts** which group the measures in three categories: measures saving less than 0.1% of the sector energy consumption (low impact measures), measures saving 0.1 to less than 0.5% of the sector energy consumption (medium impact measures), and measures saving more than 0.5% (high impact measures). For measures in the cross-cutting database the percentages refer to the overall final energy consumption of the country. These estimates have been made by the National Teams in the MURE project, who have an excellent knowledge of the policy in their countries. Nearly 90% of all measures in the database have been classified in such a manner.

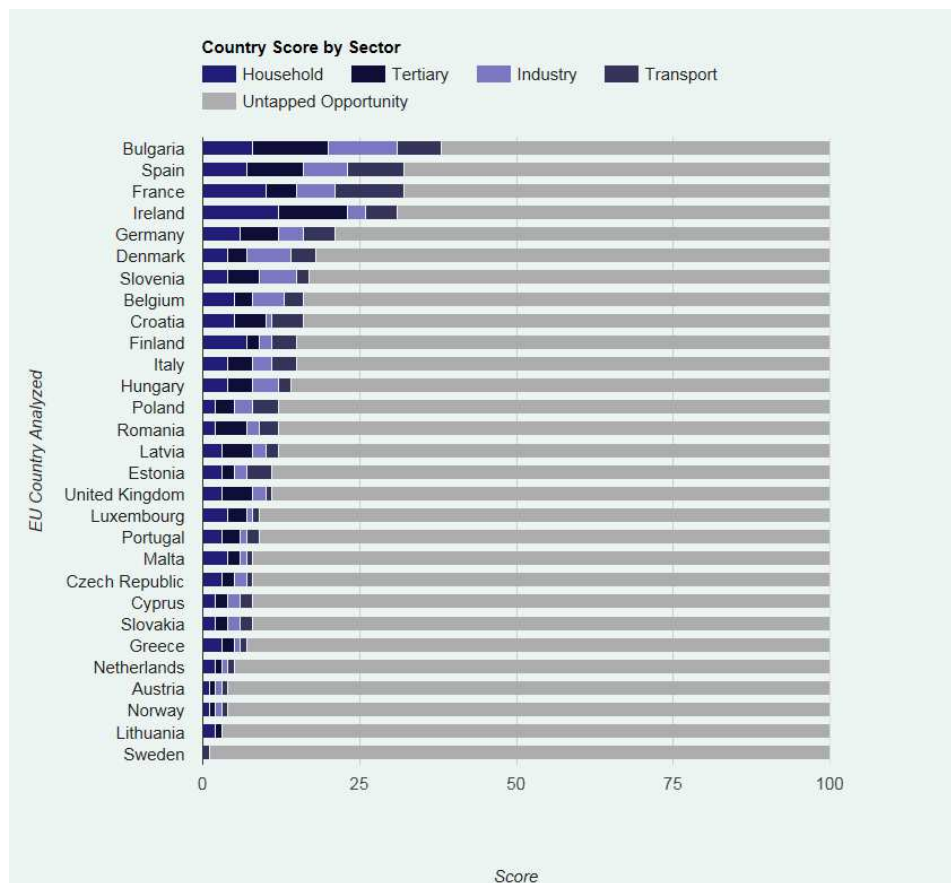
The score board makes use of both the quantitative and the semi-quantitative estimates (see Figure 1).

Figure 1: Basic methodology for the Output-based Scoreboard (related to energy consumption)



- Quantitative impacts are expressed as a percentage of the information sectoral final energy consumption. For measures in the cross-cutting database the percentages refer to the overall final energy consumption of the country (for the year 2010). It is assumed that measures with quantitative estimates already include the interaction with other measures.
- Semi-quantitative estimates are converted to quantitative estimates by using 0.1%, 0.3% (as the average of the category 0.1 to less than 0.5%) and 0.5% to characterize the measures. In order to consider interaction between those measure, a default interaction coefficient of 0.01% per measure is integrated into the calculation
- Measures without a quantitative or semi-quantitative estimate are considered as “zero impact” in order to give a malus to measures which are not characterized. In such a manner the monitoring practice in the country is also taken into account.
- Savings from the cross-cutting sector are established in a similar manner. The savings from the cross-cutting measures are then distributed over the four sectors (residential services, transport and industry) according to the sector share in final energy consumption.

The sector results are then normalized with the sector shares in overall final energy consumption of the country which is set to 100%. The graph below can then be read as percentage savings achieved with the energy efficiency measures of a country (compared to the energy consumption of the year 2010).



Output-based Scoreboard (related to energy efficiency potentials)

This scoreboard makes also use of the information in the MURE database on energy savings achievable with the present policies (“policy output”) **but compares the savings with the energy efficiency potentials at the time horizon 2030**. By default the scoring period comprises measures from 2013 (the starting year of the EED) to present but other periods can be selected.

This scoreboard proceeds in the same way as the Output-based Scoreboard (related to energy consumption). Instead of relating the savings in PJ to the final energy consumption of a given year, it compares the savings of a given period induced by energy efficiency policies (for example 2013 to present) with the savings potentials established for the period 2013 to 2030.

The energy efficiency potentials used have been established in a study by Fraunhofer et al. (2014) for the European Commission in the frame of discussions on the 2030 frame for energy efficiency, renewables and greenhouse gases.

The formula for the calculation is as follows:

$$\text{Savings for a given period} / (\text{Savings for a given period} + \text{potentials for 2013-2030})$$

Output-based Scoreboard (related to energy efficiency targets)

This scoreboard makes also use of the information in the MURE database on energy savings achievable with the present policies (“policy output”) **but compares the savings with the energy efficiency targets at the time horizon 2020**. By default the scoring period comprises measures from 2013 (the starting year of the EED) to present but other periods can be selected.

This scoreboard proceeds in the same way as the Output-based Scoreboard (related to energy consumption). Instead of relating the savings in PJ to the final energy consumption of a given year, it compares the savings of a given period induced by energy efficiency policies (for example 2013 to present) with the energy saving targets established for 2020. The targets are either calculated as a flat 20% target for all countries or by taking the EED targets provided by the different EU Member States¹, and calculated the savings to be achieved as a difference between the base year 2013 and the 2020 targets.

The formula for the calculation is as follows:

$$\text{Savings for a given period} / \text{targets for 2013-2020}$$

¹ <https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficiency-directive>

Input-based Scoreboard (related to energy efficiency targets)

This input-based scoreboard makes use of the information in the MURE database on the inputs to energy efficiency policies (e.g. amount of final subsidies) and normalizes the inputs with respect to the size of the country (e.g. Gross Domestic Product or Population) if necessary or other relevant parameters. By default the scoring period comprises measures from 2000 to present but other periods can be selected.

At present we have implemented on an exploratory basis the following types of inputs:

- Inputs to financial subsidies normalized to the GDP of the respective country

The formula for the calculation is as follows:

$$\textit{Subsidies for a given period (2000-2015) / GDP of country for 2010}$$