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Resource Efficiency Scoreboard

Thirty indicators to measure resource efficiency in the EU

Eurostat, the statistical office of the European Union, publishes today for the first time the **European Resource Efficiency Scoreboard**¹. The scoreboard presents a set of 30 robust and easily understandable indicators for assessing the use of natural resources in the EU and for monitoring the progress towards a resource-efficient and circular economy.

The scoreboard indicators provide statistical support for the implementation of the Resource-efficient Europe initiative², one of the seven flagship initiatives of the Europe 2020 strategy for smart, sustainable and inclusive growth. It will provide the basis for a yearly analysis of the progress of the EU.

Natural resources underpin our economy and our quality of life. A way to secure growth and jobs is by ensuring that increasingly scarce and expensive resources circulate and create value in the economy. The Resource-efficient Europe initiative promotes the integration of resource efficiency in economic, energy, transport, construction, agriculture, fisheries and cohesion policies. A Roadmap³ defines medium and long term objectives and the means needed for achieving them, and the publication of the scoreboard is a major step in setting up an efficient monitoring system.

Walter Radermacher, Director General of Eurostat, says *"Measuring resource efficiency is a statistical challenge. The scoreboard presents a first set of indicators covering the themes addressed by the Roadmap. Natural resources – such as materials and minerals, clean air and water, arable land and fish stocks – are fundamental for our quality of life, and ensuring a smarter use of these resources is a key initiative for the future. This scoreboard should therefore be of interest not only to political decision makers, but also to all citizens."*

Structure of the Scoreboard

The list of indicators builds on consultations organised by the European Commission, as well as the output of expert panels and senior environmental statisticians and economists. It takes account the need to set targets, as well as availability of statistical data with sufficient quality.

The scoreboard is based on the most recent statistics from Eurostat, the European Environment Agency, the Commission's Joint Research Centre and other internationally recognised sources. It is structured around:

- **a lead indicator** on resource productivity;
- **a dashboard of indicators** focusing on land, water and carbon issues; and
- **a set of specific indicators** focussing on the sub-themes in the Roadmap: 'Transforming the economy', 'Nature and ecosystems' and 'Key areas'

These indicators are briefly explained in the Annex.

The scoreboard indicators cover in general the period from 2000 to 2012, subject to data availability.

The scoreboard will be constantly updated and will evolve to cover future demands. At the moment, the scoreboard presents the breakdown of certain indicators into economic sectors but in the future this type of breakdown will expand to more indicators.

1. http://epp.eurostat.ec.europa.eu/portal/page/portal/europe_2020_indicators/ree_scoreboard
By default the scoreboard presents data for Belgium, the first country in the Member States list. This is because for some indicators an EU aggregate is not available, while for others it is more meaningful to analyse the data at the Member State level. Data for the EU and the other Member States can be selected from the country list.
2. http://ec.europa.eu/resource-efficient-europe/index_en.htm
3. http://ec.europa.eu/environment/resource_efficiency/pdf/com2011_571.pdf

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Annex: The indicators of the Resource Efficiency Scoreboard

The principal objective of the Roadmap is **improving economic performance while reducing pressure on natural resources**. In this context, the scoreboard presents a number of **productivity indicators**, which show how our society is doing in decoupling economic development from the use of natural resources. These productivity indicators are defined as the ratio of GDP to different types of natural resources such as materials, water or land.

Lead indicator

A lead macro-indicator ('Resource productivity') has been chosen to measure the principal objective of the Roadmap. It is accompanied by the indicator 'Domestic material consumption' which complements the picture on material resources.

Resource productivity is defined as the ratio of GDP to domestic material consumption. Domestic material consumption measures the total amount of material directly used by an economy, such as biomass products, metal ores, fossil fuels, non-metallic minerals, petroleum resources etc. and is equal to domestic material extraction plus imports minus exports. The indicator is expressed in euro per kg and also as an index based on the year 2000.

Domestic material consumption is presented as the ratio to the population. This indicator is expressed in tonnes per capita.

Dashboard indicators

These include eight macro-indicators which focus on key natural resources: land, water and carbon.

Land indicators

Productivity of built-up areas is defined as GDP divided by the total surface of built-up areas in a country and shows whether these areas are efficiently used to generate added economic value. Built-up areas include buildings and greenhouses but exclude streets and sealed surfaces. The indicator is expressed in euro per km².

Built-up areas presents the total surface of built-up areas in km² and as a proportion of the total land area. It helps monitor the Roadmap objective to reduce the rate of land taken for housing and industry.

Water indicators

Water productivity is defined as the ratio of GDP to the total annual abstraction of fresh water removed from any fresh water source, either permanently or temporarily. The indicator is expressed in euro per m³.

Water exploitation index is the ratio of the annual total fresh water abstraction in a country to the long-term average available water. It shows how efficiently water is used.

Carbon indicators

Greenhouse gas emissions per capita is defined as emissions per capita in tonnes of CO₂ equivalent, and shows the trends in man-made emissions of the 'Kyoto basket' of greenhouse gases. It monitors the Roadmap objective to reach the climate change milestones, and is complemented by indicators on energy, since energy production is directly linked to greenhouse gas emissions.

Energy productivity is the ratio of GDP to gross inland consumption of five types of energy: coal, electricity, oil, natural gas and renewable energy sources. It is measured in euro per kg of oil equivalent.

Energy dependence is calculated as net energy imports divided by the sum of gross inland energy consumption plus maritime bunkers. It shows the extent to which an economy relies upon imports in order to meet its energy needs.

Share of renewable energy in gross final energy consumption shows how rapidly the use of renewable energy is developing. It helps monitor progress towards the target set by the Europe 2020 strategy for increasing the share of renewable energy sources in final energy consumption to 20% by 2020.

Thematic indicators

These are a set of 20 specific indicators focusing on the sub-themes in the Roadmap. They show progress in shifting the economy onto a more resource-efficient path, the pressure on nature and ecosystems and developments in key areas of basic needs with a high impact on the environment.

The sub-theme **Transforming the economy** shows progress in turning waste into a resource with indicators on waste generation and treatment (e.g. landfilling and recycling rates of different types of waste). Progress in research and innovation in environmentally related fields is measured by the eco-innovation index, which shows how individual Member States perform in this area compared to the EU average. Two indicators on environmental tax revenues and on energy taxes show the response of society to environmental pressures and monitor the shift from taxation of labour towards environmental taxation.

The sub-theme **Nature and ecosystems** monitors the state of and pressure on biological resources. For biodiversity, the scoreboard includes indicators on farmland bird populations, the area of organic farming and on landscape fragmentation. Clean air as a resource is monitored by two air pollution indicators which show the level of exposure of the urban population to particulate matters. The threat to land and soils as important resources is analysed by indicators on soil erosion by water and by the gross nutrient balance in agricultural land. An indicator on marine resources is currently under development.

The sub-theme **Key areas** includes indicators which present the high environmental impact caused by food consumption, buildings and mobility. For food consumption, there is an indicator of daily calorie supply from animal and vegetal products. For monitoring efficient mobility, the scoreboard offers indicators on CO₂ emissions from new passenger cars, on pollutant emissions from transport and on the modal split of passenger and freight transport. Indicators to measure improvement of buildings are currently under development.