Indicators and measuring resource efficiency

Building on current Commission work on resource efficiency indicators, future efforts could emphasise the need for EU-wide integrated resource efficiency indicators. Among other things, these would address trade-offs and resources embedded in traded goods, and would include impact indicators that combine economic and ecosystem objectives. Several accounting methods (e.g. material flow accounting, NAMEA and environmentally extended input/output analysis, lifecycle assessment, ecosystem capital) offer the potential to produce a coherent indicator package of this sort.

Targets and indicators are one of the areas identified by countries as a priority for exchanging experience and sharing good practice. One important element in this context would be to intensify cooperation between policymakers and the statistical offices or research institutes responsible for producing resource efficiency indicators.

Strengthening the knowledge base for resource efficiency

Reflecting on their information needs and knowledge gaps, countries identified over fifty different issues. Among the more common needs were information on how best to integrate resource efficiency into other policies; good practice in policy implementation (including assessing policy effectiveness); and setting strategic objectives, targets, and indicators. Further work on strengthening the knowledge base for resource efficiency could target some or all of these areas.

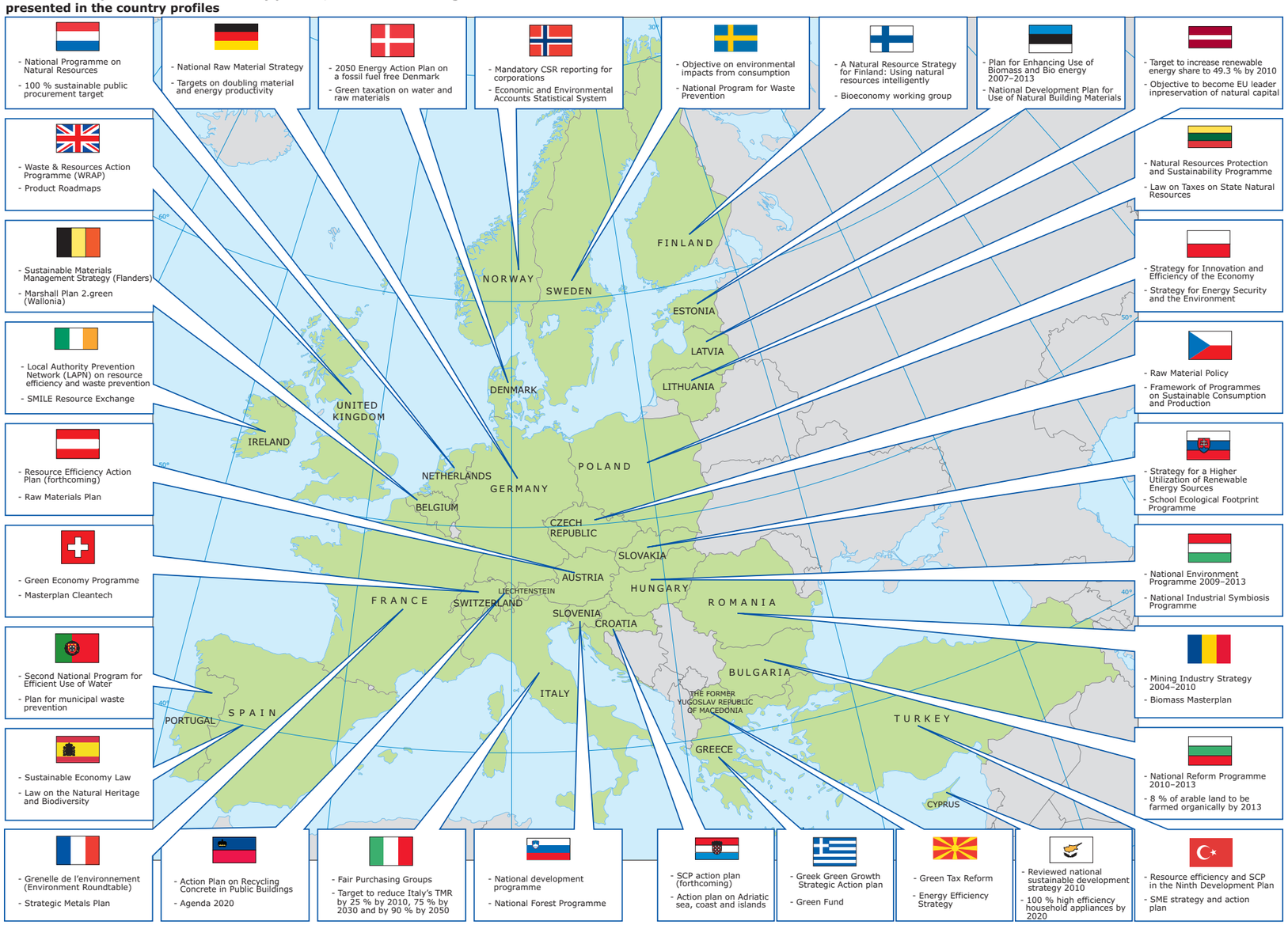
Initiatives on institutional development and capacity-building could focus on better integration of resource efficiency within existing institutions; stimulating closer inter-institutional collaboration and strengthening coordination mechanisms to improve policy coherence and consistency; and fostering stakeholder dialogue and public participation to mobilise broad support for policy implementation.

It could also be worth exploring if and how a platform for sharing good practice in resource efficiency policy could assist policymaking at the national, regional and local levels.

2011 survey of resource efficiency policies in EEA member and cooperating countries

Selected initiatives from resource efficiency country profiles

Selected examples of resource efficiency policies, instruments or targets presented in the country profiles



Further information: www.eea.europa.eu/resource-efficiency

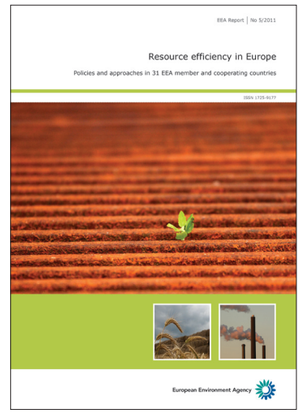
ETC/SCP

European Environment Agency

Resource efficiency in Europe

Policies and approaches in 31 EEA member and cooperating countries

Executive summary



Rationale and objectives of the survey

Resource efficiency is now a key priority for policymakers across Europe — as the EU underlined when it designated resource efficiency as one of seven flagship initiatives in its Europe 2020 strategy for smart, sustainable and inclusive growth.

In November 2010, anticipating the need for countries to respond to the Europe 2020 Resource Efficiency Flagship Initiative and in view of the European Commission's interest in expanding the knowledge base on the topic, the European Environment Agency (EEA) and its European Topic Centre on Sustainable Consumption and Production (ETC/SCP) initiated a survey of resource efficiency policies and instruments with its member and cooperating countries network (Eionet).

The survey aimed to collect, analyse and disseminate information about national experiences in developing and implementing resource efficiency policies, and to facilitate sharing of experiences and good practice.

A total of 31 countries provided information, including 25 countries of the EU-27. Information on national resource efficiency policies was provided by Eionet's national reference centres for sustainable consumption and production and resource use or by national focal points, following the same approach used in the country assessments in the EEA's report *The European environment — state and outlook 2010* (SOER 2010).

To maximise the consistency of country reports, a standardised set of questions was used to elicit information on policies, targets and indicators in place; priority resources; the institutional setup and main policy drivers; and knowledge gaps and information needs. The project team reviewed initial country responses to identify the possible need for additional information, to suggest areas to strengthen and to ensure maximum consistency across countries. Revised country responses were published as 'country profiles on resource efficiency policies' and are available on the EEA website: www.eea.europa.eu/resource-efficiency.

Key points from the analysis of the information provided by countries

This summary report presents an overview of findings from the analysis of information provided by countries. It reviews national approaches to resource efficiency and explores similarities and differences in policies. The analysis is illustrated with short examples of policy initiatives in the countries, which are described in more detail in the country profile documents. The key findings are set out below.

Defining 'resources' and 'resource efficiency'

- One of the key goals of the survey was to determine how the countries define or interpret the terms 'resources' and 'resource efficiency', so the survey included no definitions for them. The country submissions indicate that there is neither a clear definition nor a common understanding of key terminology. Terms such as 'resource efficiency,' 'decoupling,' 'sustainable use of resources' or 'minimising use of natural resources' often seemed to be used as synonyms. However, this could partly result from problems translating terminology into various languages.
- Only five countries (Austria, Cyprus, Hungary, Poland and Spain) formally define the term 'resources' in their policies, and some of those use a more narrow term, 'raw materials', when addressing resource efficiency. Generally, most countries seem to interpret resource efficiency quite broadly, including raw materials, energy sources, biomass, waste, land and soil, water and biodiversity. This is largely in line with the European Commission's interpretation in documents published to date.
- Several countries noted difficulty in interpreting what is covered under the heading 'resource efficiency' and how this new policy priority is related to 'sustainable consumption and production (SCP)', 'sustainable use of natural resources', 'green economy', etc.

ETC/SCP

European Environment Agency

Resource efficiency in strategies and action plans

- Very few countries (Austria and Germany as well as the Flanders Region in Belgium) report having a dedicated strategic policy document (e.g. a strategy or a national action plan) for resource efficiency. Instead, six broad 'economy-wide' types of strategies or action plans commonly include references to resource efficiency. The most common were national sustainable development strategies and national environmental strategies and action plans, followed by SCP action plans; raw materials plans and strategies; strategies and plans related to climate change; and economic reform programmes.
- About a half a dozen countries seem to be shifting from classical 'environmental' policies (targeting energy efficiency, water, waste, etc. in a standalone fashion) to more integrated resource efficiency policies. A couple of countries reported applying an holistic approach focusing on greening the whole economy, instead of giving attention to particular resources.
- Concerning resource efficiency featuring in sectoral policies, the two sectors most frequently mentioned were energy (including supply of energy, energy efficiency, use of renewable energy sources and climate change) reported by 28 countries and waste (management of waste, and recycling and recovery) noted by 22 countries. Additionally, the public sector (mainly in the context of green public procurement), building and construction, water management, forestry and transport were frequently mentioned. Some countries also listed technological innovation, mining and quarrying, agriculture, industry and fisheries.
- Except for transport, the services sector does not appear to be a target of resource efficiency policies at present.

Priority resources

- The priority resources most commonly reported by countries were energy carriers (22 mentions) and waste (18), followed by minerals and raw materials (16) and water (14). These four were followed by forests and timber, biodiversity, biomass and renewable energy sources. Beyond those, a large diversity of resources were mentioned reflecting local conditions: land and soil, construction materials, agricultural crops, air, fish, metals, the sea and coast, and others.
- When individual priority resources reported by countries are grouped into broader categories (e.g. timber, agricultural crops and fish can be combined into the category 'biomass') the picture changes somewhat and the top three priority resources become: energy sources (including fossil fuels and renewables), biomass (including agricultural crops, timber and fisheries) and raw materials (including minerals, construction materials and metals). These were priorities in about three quarters of the countries. About half of the countries listed waste, land and soil, and water as priority resources.

Strategic objectives, targets and indicators

- Information provided by countries on strategic objectives, targets and indicators for resource efficiency reveals a large variety of approaches, directions and levels of detail. Strategic objectives for resource efficiency tend to be fairly general in nature, most often referring to ensuring more efficient use of natural resources, materials and energy; increasing recycling of waste; improving the share of renewables in the overall energy mix; and preventing waste or decoupling waste generation from economic growth (all reported by more than half of the countries). Other fairly common strategic objectives focus on reducing use of water and protecting water resources, sustainable forest management, and halting the loss of biodiversity.
- Half a dozen countries have strategic objectives addressing absolute quantities of resources used, such as reducing resource use by a certain factor or percentage. Some countries aim to reduce the use of fossil fuels.
- Only Sweden reported having strategic objectives related to global environmental impacts of national consumption, while the Netherlands reported addressing the environmental impacts embodied in international trade.
- In the context of promoting resource efficiency, a large number of countries reported having strategic objectives related to SCP, indicating that they consider resource efficiency as a challenge related to the entire production-consumption system in the economy.
- Concerning consumption areas with significant environmental impacts, several countries reported having objectives and/or targets in the fields of housing (typically for energy efficiency in buildings and sometimes for appliances and electricity use); mobility (typically for increased use of biofuels in transport and fuel-efficiency standards for cars); and food (typically on the amount of land under organic farming). However, in most cases objectives and targets aimed at improving technological efficiency rather than addressing consumption by managing demand.
- The country responses indicate that concrete and measureable targets related to resource efficiency are most commonly set for waste, energy use and energy efficiency, reducing GHG emissions, and increasing the share of land used for organic farming. Most targets tend to be driven by EU requirements.
- Only six countries reported targets addressing material efficiency and use of materials.
- The level of detail and focus of indicators on resource efficiency varied widely, possibly reflecting the rather broad understanding of the term. The most widely used indicators (identified in between half and two thirds of the countries) seem to be in the areas of waste, energy and material use. Indicators related to water, land use and forestry are also relatively widespread. Only a few countries reported indicators that take account of pressures embedded in imported goods. A handful of countries reported indicators on patterns of consumption and on environmental awareness. Four countries reported using indicators on the environmental impacts of resource use.

Experience with resource efficiency policy instruments

- Countries were invited to present those policy instruments and initiatives that they consider good practice for improving resource efficiency. No attempt was made through this question to make a methodical and comprehensive analysis of policy instruments used. However, the examples presented indicate that countries see most value in sharing experience regarding economic instruments and information-based instruments. Only a few countries mentioned research programmes or initiatives addressing household consumption.

Institutional and organisational arrangements

- There is a great variety of institutional settings and organisational arrangements for developing and implementing resource efficiency policies. Typically four types of ministries are involved — those addressing environment, energy, economy and agriculture, often with responsibility for a single sector or type of resources. Quite often national environmental agencies or various specialised 'efficiency agencies' also play a role. This abundance of actors sometimes leads to overlapping competencies or unclear responsibilities.
- Only a few countries have established mechanisms to coordinate work on resource efficiency nationally. Some countries have set up 'specialised agencies' or research consortia to support policy development. The involvement of regional and local level administrations in policymaking seems to be limited (although the survey did not ask specifically for information on activities at the regional and local levels).

Policy drivers

- Factors frequently reported to drive resource efficiency policy can be roughly grouped into those related to the environment (e.g. concerns about environmental degradation or sustainable development) and those related to the economy (e.g. the energy crisis, rising costs of resources, the need for a deep economic reform, future resource scarcity or reducing dependence on imports). There was no clear conclusion as to their relative importance, except when policy priorities were driven by an acute shortage of a critically important resource (e.g. water).
- EU policy initiatives appear to be a strong driver of policy development at the country level. A dozen countries reported already including various aspects of resource efficiency in new policies and strategies prepared in response to the Europe 2020 Strategy and its flagship initiatives, as well as the EU Raw Materials Initiative. EU accession requirements were a major factor for candidate countries.

Knowledge gaps and information needs

- From the responses on knowledge gaps and information needs, it appears that countries are most interested in information on how best to integrate resource efficiency into other policies and in sharing information and experience on good practice in policy implementation. Other topics of interest to several countries included strategic objectives, targets and indicators to monitor progress, and assessing the effectiveness of various policy instruments. However, with almost fifty separate issues, there was a large variety of needs and interests.

Eionet: a partnership network

Eionet is a partnership network of the EEA and its member and cooperating countries. It consists of the EEA itself, six European topic centres (ETCs) and a network of around 1 000 experts from 39 countries in over 350 national environment agencies and other bodies.

Within each country, cooperation with the EEA is coordinated by the National Focal Points (NFPs), typically national environment agencies or environment ministries, which are responsible for coordinating networks of the twenty-six topic-specific National Reference Centres (NRCs).

Through Eionet, the EEA gathers timely, nationally validated, high-quality environmental data from countries, which contribute to the integrated environmental assessments and other analysis available on the EEA website. The Eionet partnership is crucial to the EEA in helping collect and organise data and develop and disseminate information.

Further information, including the country profiles, is available at the EEA website:

www.eea.europa.eu/resource-efficiency

Some EEA considerations for future policies on resource efficiency

Building on the survey's findings, some EEA reflections on the analysis of country information are presented below. These could be considered in developing future resource efficiency policies at the EU and country levels.

Benefits of resource efficiency policies: synergies and trade-offs

Reflecting on the drivers for resource efficiency policymaking, the countries indicated a combination of environmental, economic and political factors. In doing so, they highlighted the potential synergies between efforts to achieve environmental and economic goals. For example, one of the most commonly reported priority resources is waste, now widely recognised as economically important because it is a secondary raw material and a substitute for primary resources. At the same time, better waste management has the additional benefit of reducing greenhouse gas emissions and other pressures on the environment, with potentially significant economic and social benefits.

Efforts will be needed to ensure that resource efficiency policies are coherent with other key policies. In some instances, decision-makers face the need for trade-offs. For example, the introduction of 'biomass for energy' strategies in many countries, driven by the need to increase the share of renewable energy sources in the overall energy mix, means that biomass resource efficiency could become a key policy area in the near future. This could draw in agricultural or forestry policy and necessitate compromises between energy policy, agricultural and food policy, spatial planning, biodiversity preservation and ecosystem maintenance.

EU policies can play a key role as a driver of resource efficiency policymaking

While countries often adopt sectoral and resource-specific policies due to the importance of particular resources or sectors, other policies result from EU and international requirements. Indeed, EU policy initiatives appear to be a strong driver of national policies, indicating both an opportunity and a need for EU resource efficiency policies to provide guidance and strategic direction.

In addition to elaborating specific policies, EU contributions could include helping to develop a common understanding of key concepts around resource efficiency, enabling sharing of knowledge and experience, and guiding work on development of indicators. They could also include stimulating a discussion on targets for reduced consumption of certain materials or reducing overall use of resources.

Towards a common understanding of resource efficiency

The survey responses revealed fairly widespread uncertainty about the definition of 'resource efficiency' and its relationship to other concepts such as 'sustainable consumption and production' and 'the green economy'. This uncertainty appears to complicate efforts at the country level to develop policies and to set targets and policy objectives.

To support policy coherence, it could be helpful to develop and communicate an understanding of the interlinkages, overlaps and synergies between these and related concepts. One possible approach could be for EU resource-related policies to use broad interpretations of 'resource efficiency' but leave it to the countries to decide which policies and resources are most relevant in their national context.

Targeting resource efficiency policy

Most countries identify resource efficiency as a priority in economy-wide strategies but policy measures to increase resource efficiency are primarily located in environmental or sectoral policies. This mismatch raises a question about where to focus policy intervention — the economy as a whole, selected sectors or priority resources.

Consumption appears to be a priority area for strengthening policy if resource efficiency is to improve significantly. Very few countries presented examples of policies and instruments addressing consumption. Those that did mainly referred to information instruments (e.g. various labels), or focused on technical efficiency improvements rather than on managing demand.

Using economic instruments to change consumption behaviour could be particularly important, given the apparently limited national experience with policies addressing consumption, except for information-based instruments. Another topic of interest — important although raised by only a few countries — could be how to address the rebound effect and steer consumption towards low-impact products or services.

Product-oriented resource efficiency initiatives did not feature prominently in country responses, with the exception of a general emphasis on green public procurement and some mention of integrated product policy, both driven by EU initiatives. This indicates that resource efficiency could be strengthened through an increased focus on products (and thus also on consumption). Furthermore, increasingly globalised product chains and ever growing international trade imply that EU product-oriented initiatives could also have a global knock-on effect for improving resource efficiency.

Financial sector and business community participation in developing policies on resource efficiency appears to be limited, judging by country responses. This highlights the importance of making a business case for resource efficiency. Three particularly relevant aspects in this context include decreasing dependence on imports of strategic resources, creating green jobs and maintaining the competitive edge of European industries.

Global environmental impacts of a country's consumption are increasingly the focus of policy debate and some emerging national initiatives. This indicates a desire for policies that take into account resources 'embedded' in global trade, in addition to the traditional focus on 'domestic' resource efficiency (within national borders).

Setting policy objectives and targets

Strategic objectives and targets vary substantially across countries. Future EU policies could play an important role in defining common EU-wide strategic objectives and targets on resource efficiency, perhaps with differentiated time perspectives. While agreeing and setting targets is a politically complex process, the survey demonstrated that common EU targets can be an important driver for policy development at the country level. New policies could include specific targets where feasible, or provisions for setting targets at a later date, or provide a framework for discussing aspirational targets.