European Environment Agency

Showcases on resource efficiency policies

Background document for the webinar Knowledge sharing on Resource Efficiency Policies 29 November 2012

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Contents

1 Reflection on resource efficiency showcases

1.1 Background

In 2011, the EU Commission launched the Communication on a Roadmap to a Resource Efficient Europe[1], as one of the main cornerstones of EU Resource Policy. The Roadmap covers the field of resource-efficiency in its widest interpretation and contains a total of 18 milestones as well as more than 100 specific actions for the Commission and Member States to implement.

In view of the upcoming Communication/Roadmap, the European Environment Agency (EEA) and its European Topic Centre on Sustainable Consumption and Production (ETC/SCP) carried out a well-received survey on resource efficiency policies in 31 European countries[2] in 2011. The work aimed to collect, analyse and disseminate information on national experiences in developing and implementing resource efficiency (RE) policies, and to facilitate an exchange of experiences and good practices.

Among other things, the results of the survey indicated that a full implementation of the resource efficiency roadmap could prove to be a challenge to many Member Countries, and helped to map out key information needs and knowledge gaps as indicated by countries. The EIONET workshop on Green Economy and Resource efficiency, held in October 2011, showed that there is a great potential for successful knowledge sharing and interaction within the EIONET framework.

1.1.1 Aim and structure of the reflection paper

Based on the above mentioned activities the EEA/ETC SCP asked Member Countries in June/July 2012 to provide showcases on RE policy implementation to offer a clearer inside view of their experiences and lessons related to RE policy implementation at Member Country level. By now, 17 Member Countries have provided 22 ‘showcases’ on top of the 3 examples the ETC/SCP made to be used as a baseline for reflection and further discussion within EIONET (such as the upcoming webinar etc.).

The showcases should be seen as a complementary (additional) source of information to the EEA/ETC SCP survey on RE policy implementation, including the 31 country profiles (2011). Based on this, the aim of the paper is to summarize the observations and reflections associated with the showcases and to highlight specific aspects to be used as baseline for discussion within EIONET on RE policy implementation. Here, the showcases are not evaluated case-by-case but used as a valuable

[1] http://ec.europa.eu/environment/resource_efficiency/about/roadmap/index_en.htm

[2] http://www.eea.europa.eu/themes/economy/resource-efficiency/resource-efficiency-policies-country-profiles

source to extract common issues relevant to the majority of Member Countries or a specific group of countries.

In this respect, the reflection paper summarizes the provided information (showcases) on two levels:

- The general observations of showcases;
- Highlighting specific aspects/issues of the provided showcases which could be interesting for common discussion.

To better contextualize our reflection on the showcases, we provide an introduction including a brief summary of outcomes from the EEA survey of 2011. This approach has enabled us to obtain what we believe to be the most valuable knowledge base that has been developed in Europe and Member States so far, as well as facilitating a discussion within EIONET along key issues associated with the implementation of RE policies and establishing common grounds for interaction and information sharing.

1.2 Brief summary of findings from the 2011 survey on RE policy in Europe

The summary report on RE policy in Europe (EEA 2011) presents an overview of findings from the analysis of information provided by each country. It reviews national approaches to resource efficiency and explores similarities and differences in policies. To be used as overall reference to our reflection on the provided showcases, the key findings could be summarized as the following.

Defining 'resources' and 'resource efficiency'

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 appear to be used as synonyms. Only few countries formally define the term 'resources' in their policies, and some of those use the 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 a 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.

Resource efficiency in strategies and action plans

Very few countries report they have 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, national environmental strategies and action plans, followed by SCP action plans, raw materials plans and strategies and strategies and plans related to climate change and economic reform programmes. About a half a dozen countries seem to be shifting away from classical 'environmental' policies (targeting energy efficiency, water, waste, etc. in a standalone fashion) towards more integrated resource efficiency policies.

Priority resources

The priority resources most commonly reported by countries were energy carriers and waste, followed by minerals and raw materials and water. These four were followed by forests and timber, biodiversity, biomass and renewable energy sources. Beyond those, a large diversity of resources reflecting local conditions was mentioned: 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 for 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 and often refer to ensuring 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.

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 organizational arrangements

There is a great variety of institutional settings and organizational 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 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.

1.2.1 General observations on showcases

Based on the showcases provided by 17 Member Countries, the picture on RE policy implementation is quite complex and heterogeneous. The variety of provided material might be a result of the open request from EEA/ETC SCP to provide showcases without specifying the topics. The showcases were analysed for the following aspects:

- Environmental focus;
- Policy approaches (e.g. regulatory, market oriented, informative etc.);
- Grade of complexity of policy design;
- Institutional arrangements and levels of implementation;
- Target groups;
- Outreach of policy (piloting vs. diffusion).

Environmental focus

Related to the environmental focus the majority of showcases address energy and waste as priority resources, while other resources (like water, forest, land, chemicals, raw materials, rare metals etc.) are only mentioned as environmental focus in a few cases.

This is consistent with the results of the country survey and reflects that Member Countries already have a common state of implementation due to longer experiences in policy areas like energy/climate change policy and waste management/recycling policies.[3]

This might be a result from the overall political debate in the last years in which energy and waste were made "priority resources" related to the installed regulatory frameworks in the EU.

Only very few showcases are focusing on different resources besides energy and waste, which might be an indication that only a minority of Member Countries currently enlarge the focus of RE policy into a wider spectrum on biotic and a-biotic resources more systematically.

Interestingly, scarcity or a high dependency of imports, which were addressed in the survey quite often, was not a selection criterion for the majority of showcases. Out of the showcases it might also be concluded that the ongoing transformation within the political arena and the newly introduced policy architecture by the EC (EU 2020) has not yet materialized towards a broader RE policy design which covers more than energy and waste issues.

Looking deeper into the provided showcases, some Member States are in the process of (re)framing and focusing resource efficiency policy more systematically. For example Germany created an institutional setup at the federal level as part of the establishment of the national RE programme (ProgRess) with an overall objective to double abiotic resource productivity by 2020.

The showcases on the institutional setup raise the question on whether it might be a favourable strategy to establish so-called "institutional hubs for resource efficiency" in forms of "specialized institutions" or "programmes" on specific resources. This approach might help to develop and accumulate a "resource" related knowledge base and to form more focused programmes and activities in fields other than energy and waste/recycling.

Policy design

Most, if not all, showcases address RE as an important policy issue/objective. Interestingly, most showcases highlight resource efficiency as a generic/overarching policy objective to be incorporated into a wide spectrum of policy frameworks and programmes for sustainable development, SCP and Green Economy. In line with the survey, this might reflect the situation that in most countries resource efficiency is to some extent anchored in the policy agenda or is at least in the phase to become established as political issue. Here, the showcases exemplify a growing level of political recognition and a high variability of pathways to which RE became established and institutionalized on the political agenda. But a majority of showcases also indicate the fact that a specific design for RE policy implementation is still not yet fully developed in most countries, besides energy and waste. This may give the impression that most countries are still facing a great challenge to create adequate policy approaches to RE, which go further than common grounds.

However, a number of showcases indicate that countries are attempting to re-focus/re-organize their existing policy frameworks towards the emerging issue of RE and to find adequate ways to deal with

[3] This could be also a result of a missing common understanding to what RE is seen within the countries.

new policy challenges in the field of RE, Climate change/energy, SCP and Green Economy etc. Only very few showcases exemplify a progressive/innovative policy design for RE policy implementation which contain examples which could be used for future pathways on RE policy implementation.

Hungary with its National Industrial Symbiosis Programme (NISP), provides an interesting policy design to promote basic principles of "industrial ecology/symbiosis" as innovative tool by creating capacity building and cooperation networks between companies and other stakeholders/market players. This policy design could be seen as a far reaching approach to "re-organize" the material, water and energy flows of manufacturing companies and other partners within the economy which is associated with a proper management of biotic/a-biotic and energy resources under circumstances of potential scarcity. It would be interesting to learn from Hungary's experiences on such an approach on industrial ecology/symbiosis to be used as basic model in future policy design in the field of RE (industrial symbiosis as baseline/modus for economic-wide resource management).

The showcases also indicate that there is still a long way to go for many countries in terms of an integrative perspective on RE policy. Only very few showcases highlight a kind of progress in the direction of better policy integration, e.g. Germany. With the launch of the national resource efficiency programme, the Federal Government creates an opportunity to facilitate not only single activities and measurements, but also cross-sectoral approaches within the federal government (or at least opportunities for better collaboration and synchronization of governmental activities).

Policy approaches and main instruments/measurements (including target groups)

Contrary to the results of the survey, the available showcases do not reflect a broad spectrum of instruments to facilitate RE within the countries. This could simply be a result of the low number of showcases received.

The showcases do not reflect a portfolio of established policy approaches and instruments, but do offer some indication that RE is increasingly addressed by regulatory frameworks (mainly in the field of energy and waste, also water and raw material extraction). Furthermore, some showcases indicate the exploration of economic instruments for more RE, but insufficient information was provided to conduct an in-depth analysis of their implementation and effectiveness.

Companies are mainly identified as target groups within most policy approaches, other target groups (like retailers, consumers, public authorities, private organizations, and research institutions) are only mentioned in a few cases.

There are only a few showcases that address specific sectors (like housing, food) as they tend to be more indirectly related to energy efficiency or waste prevention. Also worthy of note is that compared to the survey, only few showcases identified a clear link between RE and innovation policy, which is currently high on the green economy agenda. It is also notable, that policy approaches related to RE within products (EcoDesign in its many dimension for RE) and sustainable consumption (in its multi-dimensional functions) were given minor representation by the showcases (which reflect also the results of the survey). Education and research for RE is only covered on a single example, so it is therefore unclear as to what kind of knowledge base (evidence, methods and data) the presented showcases are built on.

An interesting approach to promote technology developments for increasing international competitiveness is provided by Poland, with its GreenEvo-programme to provide international markets with a guaranteed quality/level of environmental technologies and to increase national capacities to deliver adaptive (technological) solutions in specific fields of competences towards international markets.

Institutional arrangements and levels of implementation

The showcases give a rather good indication that RE policy implementation has started to be institutionalized in various forms. Some showcases reflect a co-relation between political recognition and capacity building (institutional building). On the other hand, showcases also indicate that RE is still covered by the established institutional setting to which RE became an integral or associated part. The dynamic approach on capacity building in the field of RE (e.g. Germany, Finland, Serbia) signals the need for additional institutional arrangements especially for innovation and mainstreaming RE. The showcases indicate the need for awareness raising and institutional arrangements – see the establishment of the German resource efficiency programme for example.

1.3 Concluding remarks

- RE has become politically recognized to some extent in most countries but institutionalization is still in an early stage;
- The focus is still primarily on energy resources and waste as established fields of environmental policy. A systematic widening of RE policy to include other relevant resources is not yet common in the majority of countries;
- At present it is still unclear to what extent countries define resource efficiency itself as basis for policy implementation while it seems that RE policies are rather based on traditional grounds of environmental policy;
- Approaches of policy design for RE are still explorative in most countries and there are only few dedicated RE policies;
- Many countries have yet to establish an integrated approach to RE policy making;
- Regulatory, economic and informational approaches (instruments/measurements) have yet to be fully exploited to promote RE and some existing policy instruments have not yet been adapted to integrate wider RE concerns.
- Targeting stakeholder groups beyond companies still remains at an early stage;
- The knowledge base (also in terms of scientific evidence) for RE policy implementation is not always clear;
- Specialized agencies for RE could be a strong driver for additional capacity building especially when there are connected with implementation programmes;
- There seems to be a basic need to increase awareness and discussion on the institutional dimensions of RE.

1.4 Questions to webinar participants with outlook for EEA and ETC/SCP work in 2013

- 1. Do you agree there is a need to widen the environmental focus of RE in order to go beyond energy, raw materials and waste?
    - Yes.
    - No.

- 2. Which tools are needed for effective RE policies?
    - The existing policy tools are sufficient, but will have to be customized to RE.
    - Novel policy tools are going to be necessary.
    - It is still too early to judge what will be effective.

- 3. Do you see the need to focus on a certain type of policy instruments during a potential next Eionet webinar on RE?
    - Yes, focus on regulatory instruments.
    - Yes, focus on market based instruments.
    - Yes, focus on information based instruments.
    - Yes, focus on voluntary instruments.
    - No, we should not organize the webinar on instruments.

- 4. Do you see a need for more information sharing on the institutional settings of RE policy implementation within Eionet?
    - Yes.
    - No.

- 5. Would you need guidance from the EEA for a better implementation of the Resource Efficiency Roadmap?
    - Yes.
    - No.

Annex 1 Webinar agenda

European Environment Agency 

Eionet Webinar
Knowledge sharing on Resource Efficiency Policies

29th November 2012, 14.30 – 16.00 (CET)
Technical joining from 14:00 (CET)

Chair: Ybele Hoogeveen (EEA) and Márton Herczeg (ETC/SCP)

EU Roadmap to Resource Efficient Europe	
14:00 – 14:30	**Technical set-up** The webinar platform will be open in order to make sure all participants successfully - join in for **a precise kick-off at 14:30** (detailed instruction will be sent to participants)
14:30 – 14:50	• **Introduction** Objectives and outline of the webinar by Ybele Hoogeveen (EEA) and Márton Herczeg (ETC/SCP) • **One Year "EU Roadmap to a Resource Efficient Europe" – current activities** Rozalina Petrova, (EU Commission, DG ENVIRONMENT)
14:50 – 14:55	**Clarifications and feedback** *Use the chat function to send your questions directly to the EEA moderators who will collect questions and comments during the presentations.*
Country presentations on national showcases	
14:55 – 15:20	• **Institutional set-up**, Serbia by Maja Krunić-Lazić, Serbian Environmental Protection Agency , Serbia (7 min) • **National Industrial Symbiosis Programme**, by Gabriella Pajna, Ministry of Rural Development, Department of Strategy, Hungary (7 min) • **Efficiency agency (EFA) of NRW** by Josef Herkendell, Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the State of North-Rhine Westphalia, Germany (7 min) • Feedback and clarifications (4 min) *Use the chat function to send your questions directly to the EEA moderators who will collect questions and comments during the presentations.*
Discussion and follow-up	
15:20 – 15:30	• **Reflections on national showcases** by Christian Löwe and Jens Günther (ETC/SCP)
15:30 – 15:55	**Discussion and on-line poll**
15:55 - 16:00	**Conclusions and Outlook** by Ybele Hoogeveen (EEA)

Annex 2 List of registered webinar participants

Knowledge sharing on Resource Efficiency Policies, 29 of November 2012

European Environment Agency (EEA) and European Topic Centre on Sustainable Consumption and Production (ETC/SCP) PROJECT TEAM	
EEA – Copenhagen, Denmark	**Ybele Hoogeveen** EEA project manager, webinar chair Ybele.Hoogeveen@eea.europa.eu **Pawel Kazmierczyk** EEA project manager Pawel.Kazmierczyk@eea.europa.eu
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SPEAKERS	
Presentation from the European Commission, DG ENVIRONMENT - Brussels	**Rozalina Petrova** speaker, European Commission, DG ENV Rozalina.Petrova@ec.europa.eu
Country presentation – Hungary **The National Industrial Symbiosis Programme, Hungary**	**Gabriella Pajna** speaker, Ministry of Rural Development Department of Strategy Gabriella.Pajna@vm.gov.hu
Country presentation - Serbia **Institutional setup**	**Maja Krunić-Lazić** speaker, Serbian Environmental Protection Agency Ministry of Energy, Development and Environmental Protection Republic of Serbia maja.krunic@sepa.gov.rs
Country presentation – NRW, Germany **Efficiency agency of North-Rhine Westphalia**	**Josef Herkendell,** speaker, Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the State of North-Rhine Westphalia Head of Unit VII-B.3 European Affairs Josef.Herkendell@mkulnv.nrw.de

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Annex 3 Overview of the showcases

The following table provides a quick reference and a non-comprehensive overview about the contents of the showcases submitted.

Country showcase	**Environmental focus** (i.e. waste, energy, water, land, nutrients, chemicals etc.)	**Area of policy action** (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	**Main instrument** (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	**Results**
Albania **National Waste Management Strategy**	waste	capacity building	Laws/regulations on waste management and the establishment of waste treatment, collection and sorting infrastructure.	Number and size of new landfills.
Albania	energy	legislation, institutional setting	regulation	
Belgium **Brussels Central Region** **Resource efficient eco-construction policy**	resource use (inc. waste management)	capacity building, innovation	4th waste plan, Green jobs pact The “Brussels Greenbizz” project call for projects on exemplary buildings Ecobuild clusters Greenov (sustainable renovation)	Fom waste plan - 80% recycling rate for C&D waste.
Czech Republic **Support Program for SCP Initial Review for Sustainable Consumption and Production**	SCP/resource efficiency	capacity building, improving business capacity and increasing their resource efficiency	information/consultation/voluntary the IR SCP was developed for assistance to industrial enterprises in order to indicate company potentials for SCP and to link them with the most effective innovations.	More than 30 new IR SCP projects started under the program

Country showcase	**Environmental focus** (i.e. waste, energy, water, land, nutrients, chemicals etc.)	**Area of policy action** (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	**Main instrument** (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	**Results**
France **Producer responsibility schemes for specific waste streams**	waste - recovery of end of life products	Institutional setting Institutional backup for EPR initiatives. , including monitoring.	differentiated: some based on EU regulation (lubricants, packaging waste - although EPR is not mandatory), some national (tyres and graphic paper)and some voluntary (plant protection packaging and agricultural films).	Collection and recycled rates of waste types. Lubricants: -collection rate: 89% -of which recycled: 43% Household packaging: -collection rate: n/a -of which recycled: 64% Tyres: -collection rate: 106% -of which recycled: 27% Graphic paper: -Collection rate: n/a -of which recycled: 43% Plant packaging: -collection rate: 71% -of which recycled: 30% Agricultural films: -collection rate: 41% -of which recycled: 96%
Hungary **National Industrial Symbiosis Programme (NISP)**	re-use, recycling or recovery of industrial wastes and byproducts and industrial ecology	Capacity building Innovation The National Industrial Symbiosis Programme (NISP) seeks to link environmental protection and the sustainable	Subsidies Consultancy Wastes/byproducts are recorded in a database and workshops are organised to help identify potential synergies, re-use opportunities and promote co-operation between different companies or other stakeholders.	Interim results of the project: Waste diverted from landfill: 610,9 tons Primary resources saved: 624, 9 tons Amount of CO2 reduced

Country showcase	Environmental focus (i.e. waste, energy, water, land, nutrients, chemicals etc.)	Area of policy action (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	Main instrument (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	Results
		management of resources with competitiveness by creating new business co-operations and using industrial symbiosis as an innovative tool.	The programme delivers free advice on a number of other areas including corporate and business management, greening the office, other forms of material savings, environmental management and life cycle analysis.	by avoiding the use of primary resources in production as well as transport needs attributed to it : 6269 tons Reduction of the amount of water used in the production: 6003, 3 tons Number of workplaces evaluate the progress.
Hungary **National Environmental Technology Innovation Strategy (NETIS)**	waste management, water management, sustainable agriculture, soil protection and remediation, technologies for air, noise, renewable energies, and sustainable construction, development of advanced materials, application of nanotechnology, biotechnology, biobased products, photonics	Innovation mainstream the concept of a green economy and boost innovations related to environmental technology	NETIS will use a specific policy-mix that consists legal, economic instruments and information based tools as well as sector-specific measures. For an innovation friendly setting administrative procedures will be simplified and cooperation between governmental bodies will be improved. Green public procurement and greener tax system may also be applied. Information tools include awareness raising, green education and management.	Progress in general and in terms of resource efficiency triggered by the Strategy will be evaluated at a later stage. In the Strategy, a number of resource efficiency and savings targets have been set for the year 2020 (as compared to the value in 2007): material-intensity: 80% (DMC/GDP) energy-intensity: 80% (toe/GDP) water-intensity: 80% (m3/GDP) import-dependence of

Country showcase	Environmental focus (i.e. waste, energy, water, land, nutrients, chemicals etc.)	Area of policy action (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	Main instrument (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	Results
				fossil fuels: 75% (%) public road transport energy efficiency: 80% (toe/tkm) railway transport energy efficiency: 85% (toe/tkm)
Hungary **Pannon Seed Banks**	biodiversity, nature protection in situ species conservation of the genetic diversity of the Pannonian biogeographical region's entire flora	Capacity building	Subbsidies (LIFE and Hungarian Ministry for Rural Development) Awareness-raising and information dissemination activities This project utilizes international and national experiences and knowledge in this field by assessing available scientific literature, carrying out study tours and trainings, cooperating with experts and utilizing knowledge of related conventions, agreements and networks. Seed collection strategy and methodologies Moreover, the project will also focus on the awareness raising of decision makers (members of the parliament, government officials etc.) on the importance of biodiversity, including plant diversity and ecosystem services. Informing and involving stakeholders (relevant ministries, local municipalities, non-governmental organizations etc.) is essential for the	By the end of the project, approximately 50 percent – at least 800 species – of the species of the wild native flora will be collected.

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			implementation of the long-term objectives of the project.	
Kosovo **Implementation of solar panels at UCCK (University Clinical Center of Kosovo) and SC (Student Center)**	energy renewable energy		Subsidies Implementation of solar panels at University Clinical Centre of Kosovo and Students Centre. The project began in November 2008 and ended in March 2009. The total surface area of the panels is 351.64 m2.	This project will provide the supply of hot sanitary water to 750 students and 500 patients. Overall energy saved is ~ 250 MWh in a year.

Country showcase	**Environmental focus** (i.e. waste, energy, water, land, nutrients, chemicals etc.)	**Area of policy action** (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	**Main instrument** (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	**Results**
Latvia **Special tax rates for plastic bags attached by a merchant to an aggregate of goods or products.**	materials and waste use of plastic bags	Legislation The legal base for application of tax is the Natural Resources Tax Law. Latvian Parliament (Saeima) has approved the revised legal act on 14th of November 2008.	Special tax rates for plastic bags attached by a merchant to an aggregate of goods or products. The aim of the measure is to reduce consumption of plastic bags in Latvia. Since 2008, Latvia has introduced higher tax rates for plastic bags attached by a merchant to an aggregate of goods or products (purchase) in packaging or without it for customer's convenience. The tax rate applied: 2.60 lats per one kilogram (to plastic bags weighting less than 0.003 kilograms) and 0.80 lats per one kilogram (to plastic bags weighting more than 0.003 kilograms). (exchange rate: 1Euro/0.702804 Ls)	The initial response from traders associations and producers was cautious. But during the first year after changes in legislation, almost all retailers stopped offering plastic bags for free and consumption of plastic carrier bags reduced up to 50% in several retail chains compared to previous period, meanwhile more environment friendly packaging increased their share. The collected tax increases the finances available for projects to promote innovative techniques and environmental information and education campaigns.

Country showcase	**Environmental focus** (i.e. waste, energy, water, land, nutrients, chemicals etc.)	**Area of policy action** (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	**Main instrument** (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	**Results**
Former Yugoslav Republic of Macedonia **Mitigation of climate change**	energy and climate change energy efficiency renewables improve the energy efficiency and energy saving, increasing the share of renewable in the energy sector, ensuring stability in energy supply w.	Legislation?	Clean Development Mechanisms CDM project cycle contains several activities like: Planning a CDM project activity, Preparation the project design document, Obtaining approval from each Party involved, Validation, Registration, Monitoring of achieved GHG emission reduction, Verification and Certification, Issuance of CERs and Distribution of CERs Investment activities for building of new thermal power plants on gas and building new big hydro power plants.	
Poland **Thermo-modernisation and Renovation Fund as source of the financial support for thermo-modernisation investments in housing.**	energy use/efficiency		Subsidies and audits investments on modernizations of heating systems, extension and modernization of district heating systems and renewable energy systems will be funded by paying a bonus on bank credits All investment projects will be audited to secure energy savings.	yes, in terms of energy savings in heating. But no concrete figueres mentioned in the showcase
Poland **GreenEvo**	energy (efficiency) waste biodiversity raw materials	Innovation Capacity building	Subsidies and export initiative GreenEvo is mainly a export initiative for Green technologies	yes, in terms of establishing green technologies. But no concrete results described

Country showcase	**Environmental focus** (i.e. waste, energy, water, land, nutrients, chemicals etc.)	**Area of policy action** (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	**Main instrument** (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	**Results**
	climate change		Companies are supported by market analyses, training on foreign legislation and technical standards and promotion of their products by Polish authorities	
Poland **White certificate scheme in Poland**	energy efficiency	legislation Capacity building	regulation energy (electricity, gas, heat) suppliers have to secure investments on energy efficiency by submitting so called white certificates on energy efficiency. These can be achieved by energy saving projects which at least save 10 toe per year or by purchasing certificates on a stock market	yes, in terms of energy savings. But yet not demonstrated as the regulation will come into force in 2013
Montenegro **Strengthening institutional dialogue on sustainable development**	sustainable development	concept development	policy dialogue set-up of a multi-stakeholder dialogue for further development and revision of the national sustainable development strategy Resource efficiency will be included in the revised SDS and is currently under discussion	
Portugal **ERSAR - Quality of service assessment**	waste and waste water	Service assessment quality assessment and benchmarking of local waste services using 16 indicators (around 7 indicators seems to deal	Quality assessment and benchmarking yearly audits on service quality and efficiency improvement which are operated and published by a public authority	six environmental indicators (out of 16) are presented demonstrating increasing performance of the local waste services in average over the last seven years

Country showcase	**Environmental focus** (i.e. waste, energy, water, land, nutrients, chemicals etc.)	**Area of policy action** (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	**Main instrument** (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	**Results**
		with environmental aspects)		
Serbia **Institutional setup**	raw materials energy waste and wastewater	Institutional setting implementation of different strategies, e.g. National Strategy for the sustainable use of natural resources and goods, through several national bodies and agencies	Research and consultancy agencies for public bodies and private companies (energy, SCP) network of energy managers Cleaner Production Center	yes, as the agencies are set-up, but no concrete impacts on resources use are described
Slovakia **Protection and effective use of raw materials**	raw materials	Legislation	Economic instruments on resource use	
Spain **Conference on waste prevention and resource efficiency**	waste prevention and resource efficiency	Capacity building	The starting point has been the collection of the main previous waste prevention experiences developed in several regional governments and municipalities in Spain, both in the framework of the European Waste Prevention and Reduction Week, as well as other waste prevention initiatives (NGOs, other stakeholders, markets, etc).	

Country showcase	**Environmental focus** (i.e. waste, energy, water, land, nutrients, chemicals etc.)	**Area of policy action** (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	**Main instrument** (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	**Results**
Sweden **The Recycling Ground Alelyckan**	waste recycling	pilot project/good practice Recycling programme managed by local authorities, NGO and second-hand retailers on a waste disposal station	demonstration project with concrete implementation of a recycling strategy waste is sorted into different fractions (re-usable, recyclable, disposable)	waste landfill is reduced by nearly 5% for the Gothenburg region
Sweden **A series of examples**	waste mineral resources metals energy climate change biomass and renewable energy	legislation (e.g. introduction of producer responsibility) Policy developement (strategies, programmes) (e.g. National programme on waste prevention; National waste plan; strategy on sustainable use of minerals) Research & Development (e.g. on increasing material and energy efficiency; production of renewable energy out of forest industry...)	law (producer responsibility for WEEE, batteries, light bulbs, packaging, tyres, paper) research funding	several examples are mentioned and described very briefly

Country showcase	**Environmental focus** (i.e. waste, energy, water, land, nutrients, chemicals etc.)	**Area of policy action** (i.e. Institutional setting, Concept development, Assessment, Capacity building, Legislation, Innovation)	**Main instrument** (i.e. Laws/regulations, Taxation, Subsidies, Consultancy/Audits, Labelling)	**Results**
Switzerland **Project R'EFF**	raw materials air water soil climate	SCP Research	Research project / Awareness raising (?) Analysis of environmental impact of Swiss consumption patterns and field of activity in production	comprehensive overview of the environmental impact of Swiss consumption and production patterns
Turkey	climate change energy efficiency waste management	Awareness raising legislation	Awareness raising on energy efficiency through different communication channels (publications, websites, national platforms) National Action plan on climate change	

Annex 4 Showcases on resource efficiency

Albania - National Waste Management Strategy

Contact details to the Coordinator of the response
Arta Kodra, National Reference Center for Waste, Head of Heavy Metals and Waste Sector, Agency of Environment and Forestry

Municipal waste management
In Albania municipal waste management is a priority issue due to the potential environment and health impacts of waste. Through waste management Albania aims to promote environmental sustainability and the reduction of negative environmental and health impacts. Municipal waste management is also seen as the beneficial source for waste recycling companies which use the recyclable waste as the raw material for their products. The construction of waste treatment infrastructure to facilitate selective collection, recycling and disposal is a priority for Alabama.

National resource policy framework
The Albanian National Waste Management Strategy sets the direction of the Albanian Government policy for the sustainable management of waste by 2025 divided into 3 operational phases of 5 years each. The objectives of this draft strategy are: • By 2015: to recycle / compost 25% of municipal waste; • By 2020: to stop the increase of municipal waste generated; recycling / composting 55% of municipal waste; • By 2025: Reclamation of energy from 15% of waste municipal. The objectives of the National Waste Strategy will be implemented through the development and implementation of: National Waste Plan Regional Waste Management Plans Local Waste Management Plans.

Description of practical example
Waste management in Albania has been identified as a top environmental priority issue in a large number of strategic documents of Environmental Research, as well as all the various reports of the European Commission to Albania, including EC progress reports 2006, 2007 and 2008. As stated above, the main aim is:

- Construction of waste treatment infrastructure, selective collection, recycling and disposal.

In Albania private recycling companies collect and process different types of waste: scrap, paper, plastic, textile, used tires. There are approximately 12,000 individual informal collectors, and approximately 60 different recyclable waste collection companies. The lack of separation of the source waste is a problem, however. Individual collectors and companies face difficulties in finding clean and separate waste. Most of recyclable waste comes from urban waste, and partly from the industrial sector.

Ministry of Environment, Forests and Water Administration (MEFWA) is the main institution for drafting the policy and legislation on waste management, inspection, and control of the implementation of the law. The following institutions also collaborate on its implementation: Ministry of Public Works, Transport the Telecommunication; Ministry of Health; Ministry of Economy, Trade and Energy; Ministry of Agriculture, Food and Consumer Protection.

In order to have a single coherent strategic document on which to base the National Waste Management Plan, the waste elements of different existing policy and strategy documents have been combined into the National Waste Policy and Strategy document by the INPAEL (Implementation of the National Plan for Approximation of the Environmental Legislation) project team, together with its own pieces of work on waste, such as the Waste Directive Implementation Plan and others.

This document establishes the direction of the Albanian Government's policies for sustainable waste management to 2025. It is built around a major commitment of funding by the Government to transform Albania's record on waste reduction, recycling, composting and recovery. It sets out challenging but realistic objectives to achieve fundamental change in Albanian waste management. This is a part of an overall programme of legislation to reform in line with EU legislative norms.

For the preparation of waste management policy, the MEFWA considers four policy pillars.
Planning (Development of plans for improvement before the policy and strategic agenda to the point of application), **Education** (Training of stakeholders for effective implementation and successful operation of the system), **Resources** (human and financial resources), **Legislation** (improvement of legal framework) .These policy pillars are essential for the success and continuity of waste management in Albania and should be applied in equal measure.

The plan was created in consultation with key government, civil and waste industry stakeholders. It brings together the results of a broader action; the technical assistance project (CARDS 2006, INPAEL), which identified and assigned working groups to 12 regional Waste Areas based on the geographical boundaries of the existing districts. These working groups, comprising Government, MEFWA, local authorities, regional development bodies, voluntary organizations, industry and other stakeholders, will be involved in the development of sustainable waste management plans that are appropriate for regional conditions. Local waste management plans focus on the collection and removal of waste, including waste separation and recycling arrangements. In addition the affairs of these

Waste Areas will be managed by an overarching body the Waste Area Group consisting of local and regional stakeholders.

To date, some landfills have been constructed, while others are in the process of construction as part of the implementation of the National Strategy and Plan for waste management. The following table presents the status of these landfills:

No	Landifll	Surface	Kapacity	Notes	
1	Bestrova 1 (Vlorë)	12 ha	1044690 m^3	feasibility study completed	
2	Bushat (Shkodër)	12 ha	1000000 m^3	Constructed	
3	Bajkaj (Delvinë)	5 ha	-	feasibility study completed	
4	Sharrë (Tiranë)	15 ha	2900000 tonne	In operation	
5	Korçë	10 ha	-	feasibility study completed	
6	Rubik (landfill industrial)	5000 m^2	3500 tonne/year	Constructed	
7	Peshkopi	8000 m^2	-	feasibility study completed	
8	Bajram Curri	-	-	In operation	
9	Rreshen	-	-	Constructed	
10	Paper, Elbasan	-	-	feasibility study completed	
11	Durres	-	-	feasibility study completed	

Critical to the success of the strategy will be the adequate resourcing of the infrastructure requirements and capacity building measures to fulfill the obligations of both this strategy and the associated implementation plan. The National Waste Management Plan outlines the funding commitment of the Albanian government together with a mechanism to better co-ordinate both Central Government and International donor funding to best serve Albania in overcoming its challenges and to create a long term sustainable integrated waste management system.

Further information

National Strategy on Waste Management *www.moe.gov.al*

National Plan on Waste Management 2010- 2025 *www.moe.gov.al*

Albania – Institutional setting for resource efficiency and energy policy

Contact details to the Coordinator of the response
Contact: Albanian Eionet National Reference Centre for SCP including resource use Ing. Enkeleda Shkurta.

Institutional setting Energy policy and resource efficiency in Albania
Promoting resource efficiency is an overall policy objective of the Albanian Government, with many cross-cutting links to various policy fields. Therefore, resource efficiency policies are formulated and introduced by individual Ministries covering different issues and aspects of the resource efficiency agenda. To better implement policy programmes and measurements in the field of resource efficiency, Ministries founded several new governmental bodies, institutions and networks in the field of resource efficiency with a main focus on capacity building for different target audiences.

National resource policy framework
Albania is working to adapt new energy efficiency policy and integrate renewable energy sources, as part of the broader National Strategy of Energy based on EU Directives (2001/77/EC, 2003/54/EC; 2003/55/EC). The Albanian National Strategy of Energy 2007-2020 (updated) broadens focus from fossil fuels to include energy efficiency and renewable energy sources, and includes the steps to be undertaken to ensure implementation. Security of supply and climate change are important guideline energy factors for energy policy in Albania. The main aim of the strategy is the exploitation of all available energetic resources including renewable ones. Albania has ratified some agreements related to renewable energy and is working to harmonize the renewable energy legal framework. Energy policy integration is an obligation of the Albanian government under the Stabilization-Association Agreement. Albania is linking the strategy of energy, renewable energy sources and energy efficiency. The integration of renewable energy sources and increased energy efficiency are important to energy policy and the environment and is dependent on establishing an operation framework for practical profits.

Description of practical example

Albanian energy policy has a number of goals: security of supply through better exploitation and utilization of energy sources; energy diversification; increasing the competitiveness; and environmental protection. As such, Albanian National Strategy of Energy (updated) takes into consideration the development of energy sector on the path of most effective scenario.

The main instruments of Albanian energy policy include the harmonization of legal framework of the energy sector with European directives, consumer protection, energy efficiency promotion and increasing the utilization of renewable sources. Energy planning is based on least-cost and the right actions to encourage private and private-public investments (private investments in particular). Albania has signed and ratified the Kyoto Protocol by Law no. 9334, on 16.12.2004, (as a Non Annex I country). Albania has signed the Energy Charter Treaty in 1994, which was ratified by the Albanian Parliament in December, 1997. Being a member, of the Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA) requires its Signatories to formulate energy efficiency strategies and policy aims. In order to establish appropriate regulatory frameworks it is necessary to develop specific programs for the promotion of efficient energy use. The Treaty establishing Energy Community was concluded on October 25, 2005 and ratified by the Albanian Parliament. From July 2006, in accordance to the Treaty, is established an integrated regional market in electricity and natural gas. The tasks of the Energy community are to enhance the security of supply of the single regulatory space by providing a stable investment climate, to improve environmental situation and energy efficiency of the energy sector. Another important task of the Energy community is to foster the use of the renewable energy sources and to develop competition of the energy sector through the function of the market in energy sector. Energy strategy and policies of the energy sector are important component not only to support the stable development of the country but also to fulfil the targets of the Stabilization Association Agreement (SAA).

One best practice in managing of natural resources is the establishment of The National Agency of Natural Resources (NANR) in 2006, which has its management and organizational structure approved by the Minister of Economy, Trade and Energy. The NANR protects and well administers the interests of Albania in the hydrocarbon, mining and energy fields.

The NANR is responsible for the development and supervision of the rational exploitation of natural resources based on Government policies, and the monitoring of post-exploitation in the sectors of mining, hydrocarbons and hydropower. The NANR has the following tasks and responsibilities:

- It consults and cooperates with the relevant government structures for the development of policies in the area of mining, hydrocarbons and energy;
- It implements government policies in the area of mining, hydrocarbons and energy;

- It provides the government's critical opinion on studies and projects in the areas of mining, hydrocarbons and energy that have been presented by government or private entities from the country or abroad. In special cases it asks for specialized assistance;
- It promotes mineral, hydrocarbon, hydro and renewable energy resources;
- It negotiates hydrocarbon and mining agreements, and monitors the implementation of their development plans;
- It prepares the necessary documentation and procedures for issuing permits, licenses and authorizations as per the law, which enables the signing of hydrocarbon agreements and the performing of hydrocarbon operations as per the signed agreements;
- It monitors the execution of signed agreements on hydrocarbons;
- It supervises mining, post-mining, hydrocarbon and energetic activities;
- It performs the monitoring of the exploited areas, mining risk and the termination of mining activities;
- It monitors the concessionary contracts for hydropower plants;
- It exclusively manages primary data of the hydrocarbon sector and the data related to the mining and post-mining activity;
- It proposes necessary measures for the increase of the energy use in energetic cycle.
- It composes and publishes the annual energetic balance, on a national and regional level, conforming to EUROSTAT and International Energy Agency forms.

I would like to emphasis the cooperation between the NANR and The Environment and Forestry Agency (AEF) and the Ministry of Environment on sharing environmental data, particularly where providing information and AEF produce reports to increase the public awareness. In addition, Albania is currently involved in research programs including National Report on Sustainable Development and Mediterranean Strategy on Sustainable Development.

Further information

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Agency of Environment and Forestry, Tirana Albania www.aefalbania.org.al

National Agency of Natural Resource www.akbn.gov.al

Belgium - Brussels Central Region Resource efficient eco-construction policy

Contact details to the Coordinator of the response
Belgium, Brussels Capital Region, Brussels Environment Administration *Bruxelles Environnement-IBGE,* Jolien De Troch (jdetroch@leefmilieu.irisnet.be)

Title and short description of show case (max 100 words)
Resource efficient eco-construction policy In Brussels, the building sector is responsible for 75 % of energy consumption and 70 % of CO_2 emissions. This is why the Brussels-Capital Region is conducting a number of activities to improve the energy efficiency of buildings and promote eco-construction. The transformation of the construction sector to an eco-efficient construction sector is stimulated and promoted throughout different policies and instruments: several projects that stimulate the demand and the supply sides of the eco-construction sector and the overall policy of the regional waste plan that foresees less resource use in the construction sector.

National resource policy framework (max 300 words)
In Belgium the environmental competencies lie with the regions. In the Brussels Capital Region the development and the implementation of resource efficiency policies are coordinated by the Brussels Environment administration (Bruxelles Environnement – IBGE). The Brussels Region has not elaborated a specific resource efficiency strategy. This issue is incorporated in the Regional policy statement, and mainly through the Regional Waste prevention and management plan. Since 1992, every 5 years, the Region adopts a “waste prevention and management plan”, in short “waste plan”. It includes all the means and actions foreseen in order to minimize waste and manage waste products in a sustainable way, and is followed by an evaluation of its implementation. The fourth waste plan has been approved in March 2010, and is accompanied by an environmental impact assessment, has an indeterminate duration, and will be evaluated every 2 years. This fourth Waste Plan takes into account the impact of waste on climate change and the consumption of resources. Priority is therefore given to waste prevention and eco-consumption. It aims to achieve measurable prevention targets of numerous waste streams for 2020. Those reductions concern specific waste streams (food, paper, superfluous packaging, gadgets and superfluous purchases, organic waste) and specific segments of the public (households, workers, pupils, …). The waste plan foresees also the pursuing of an

ambitious sustainable purchasing policy, through the promotion of objective research on sustainable consumption, implementing partnerships with distribution and commerce and supporting 'good behaviour'. The reuse, repairing and second-hand sector are likewise seen as prior sectors to further develop.

The regional waste plan foresees **a resource efficient policy for the construction sector**, and specific approaches by other waste streams.

Description of practical example

Eco-construction policy

The fourth waste plan foresees the development of an integrated 'eco-construction' approach, to minimize the impact of construction on the environment through all life cycle phases by prevention, reuse and recycling. The objective is to achieve 90 % (by weight) recycling of construction and demolition waste.

Priority is given to prevention, to avoid the use of resources and generation of waste, by promoting renovation rather than new construction; by the promotion of the most efficient use of materials and the promotion of sustainable materials. After promoting prevention, priority is given to the promotion of reuse without prior treatment, the recycling of wastes into secondary raw materials and the recovering of wastes as fuels or other means of producing energy. The disposal of the waste is seen as last measure.

The waste plan also provides support for selective deconstruction, and a requirement to sort and reuse construction and demolition waste.

Different projects are set up to envisage to encourage innovations that decrease demand for resources and decrease the environmental impact in the construction sector:

- **The Green Jobs Pact** (*Alliance Emploi-Environnement*): **the Green jobs pact** has been established with a key focus on sustainable construction. The main goal of this pact is to ensure a smooth and rapid transition from the traditional construction to a sustainable construction. A multi-sectorial pact has been developed between public authorities, the operators, social partners and stakeholders to increase the capability of the Brussels construction sector to exploit the great potential of employment, including the less qualified in this sector.
  This includes support for structuring and developing the construction sector raises between other education and vocational training, funding and actors, assisting companies / contractors, agencies to be ableinstead of labels, ... Emphasis is on the involvement of SMEs and TPEs, as well as actors in the social economy.
- **The "Brussels Greenbizz" project;** creating 12,000 m^2 of areas for companies active in sustainable construction, in conjunction with the Employment-Environment Alliance.

- **Call for projects for exemplary buildings:** which, since 2007, have supported eco-construction innovation.
- **Ecobuild** clusters which favour the development of the construction sector and sustainable renovation.
- The **Greenov** project, targeting the development of the sustainable-renovation economic sector.

A first evaluation of the objectives set out in the Fourth Waste Plan for the construction waste stream shows that the current recycling rate of demolition and construction waste in the Brussels Region reaches 80 % (objective in the Waste Plan is to attain 90 % and the European requirement under the Waste Framework Directive is 70 %).

Further information

Fourth Regional Waste Plan:

http://www.bruxellesenvironnement.be/uploadedFiles/Contenu_du_site/Professionnels/Formations_et_séminaires/Conférence_Pre-waste_2011_(actes)/w-brusselsenvironment-wasteplanEN.pdf?langtype=2060

Green jobs pact (Alliance emploi-environnement):

http://www.bruxellesenvironnement.be/uploadedFiles/Contenu_du_site/Professionnels/Themes/Emploi_et_%C3%A9conomie/07_Alliance_Emploi_Environnement/ficheactions_fr.pdf?langtype=2060

Exemplary buildings :

http://www.bruxellesenvironnement.be/uploadedFiles/Contenu_du_site/Particuliers/02_Th%C3%A8mes/Climat_en_construction/04_Les_engagements_internationaux_de_la_R%C3%A9gion/03_Le_pacte_des_Maires/IF_CoM_ExamplaryBuildings_EN.pdf?langtype=2060

“Brussels Greenbizz” project:

http://www.bruplus.irisnet.be/en/content/brussels-greenbizz

Greenov Project:

http://www.greenov.net/

Czech Republic - Support Program for SCP Initial Review for Sustainable Consumption and Production

Contact details to the Coordinator of the response
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Initial Review for Sustainable Consumption and Production
Support Program for Initial Review for Sustainable Consumption and Production (IR SCP) for years 2011 – 12 has been launched by the Czech Ministry of the Environment. The aim of the program is to facilitate technical assistance to enterprises interested in identification and exploration of potential for most suitable Sustainable Consumption and Production (SCP) tools within all enterprise levels (products, processes, management systems, strategy and relationship with stakeholders). IR SCP, developed and successfully piloted within preceding projects of ENVIROS and CENIA, is a new tool for implementation of SCP in enterprises and other organisations bringing effects mainly in the field of resource efficiency. This integrated diagnosis and interactive project development tool helps to find the most significant problems and subsequently appropriate solutions in all kinds of organisations.

National resource policy framework
There is no specific authority focusing its activities solely on resource efficiency in the Czech Republic. Fulfilling individual strategies is primarily responsibility of the Ministry of Environment (MoE). Raw material and energy efficiency falls within the scope of the Ministry of Industry and Trade (MoI). Both ministries are cooperating on support of resource efficiency and SCP in industry - for example MoI developed a guidance document for SCP for SMEs which is being utilised within the Program Support for IR SCP launched by MoE and described in this case study. Other institutions which are involved in promotion of SCP in the Czech Republic include: • Regional Information and Education centers for SCP • Czech Environmental Information Agency CENIA • Chamber of Commerce • National Network of Healthy Cities • Regional government in Liberec

Description of Program Support for Initial Review for Sustainable Consumption and Production
The need to develop Initial Review for Sustainable Consumption and Production (IR SCP) was perceived by industrial enterprises interested in an objective analysis of where to allocate limited resources. These resources can be devoted to so-called “voluntary instruments” of industrial management for sustainable development (such as Cleaner Production Assessment, Environmental Management Accounting, Monitoring and Targeting, Integrated Management Systems, Life Cycle Management, Social Responsibility, Eco-design, Design for Sustainability etc.). Enterprises are very often approached by specialists with an offer to implement particular instruments. This approach is usually missing a broader system perspective and does not correspond with companies’ actual needs and potentials for improvements as practitioners have a natural tendency to promote “their” instrument. The methodology of the IR SCP was developed to assist industrial enterprises to identify company potentials for SCP and to link them with the most effective innovations. The methodology was developed and on a pilot base implemented within two partnership projects managed by ENVIROS and CENIA in 20 organizations (mainly industrial companies, but also municipality and one medical centre and educational institution). Almost in all cases significant potential for SCP innovations was found and specific innovation projects identified and consequently implemented. At the same time a pool of professionals was trained in IR SCP methodology within an on-the-job training programme, and received a certificate "SCP Manager". Within IR SCP, all levels of an enterprise’s management pyramid are assessed in a systematic way from the perspective of possible SCP opportunities for improvements that could enhance enterprise’s value. IR SCP is implemented at four basic levels: products, processes, systems and stakeholders, proposing the most effective SCP innovations and projects for the given company. When areas for improvements are identified, suitable instruments are allocated and cost-benefit analysis implemented based on quantification of potential for improvement and quantification of costs of innovations. The output of IR SCP are specific innovation projects with an evaluation of their feasibility from technical, environmental, social and economic perspective. The methodology also includes evaluation of best financing options including no cure, no pay schemes (based on Energy Performance Contracting approach). The main benefit of this new methodology is its holistic approach. If comparing IR SCP with other methodologies for a complex diagnosis in the field of sustainability of industrial enterprises:

- IR SCP provides a complex review thus not omitting any significant opportunity for improvement
- IR SCP is based on quantitative analysis thus pointing out the most effective priorities instead of comparing assessed enterprises with an ideal SCP site assuming that all SCP tools should be utilized (as other similar tools do). IR SCP focuses on opportunities for improvements and innovations within the given enterprise.
- IR SCP focuses on opportunities for improvement (SCP aspects) first; suitable instruments for improvements and innovations are assigned to these opportunities only after completion of this initial analysis (thus ensuring need driven approach).

More than 30 new IR SCP projects have been started thanks to the support provided for implementation of IR SCP by the Ministry of the Environment of the Czech Republic. The program supports implementation of IR SCP by certified SCP Managers thus stimulating further development of capacities in this area. SCP managers are promoting IR SCP within industry and after successful implementation of IR SCP are eligible for compensation of their costs. Co-financing of IR SCP is provided by the benefiting company and active cooperation of its employees is also required. The program is managed by the platform for SCP EMPRESS.

Companies appreciate an independent evaluation of their potentials and identification of often completely new innovation projects. Feasibility of beneficial innovation projects was mainly proved in the area of management of material and energy flows within production. Desirable improvements in life-cycle design are often hindered by existing framework conditions and questions of ownership of life cycle of a specific product are often raised here. Enterprises are in general already performing well in the field of management systems. Surprisingly high potential for improvements is being found in the area of the relationship with stakeholders and social responsibility.

Implementation of the Program confirms that management of material and energy flows is still a weak point in enterprises. Not only in SMEs, which lack capacities for identification and exploration of resource efficiency potential, but large unexplored economically feasible potential for increase of resource efficiency is being identified within well managed larger enterprises. One of the reasons is way how enterprises allocate costs for waste management (non-product output costs are not allocated to waste flows thus hiding potential for economic savings which could be achieved through resource efficiency). Most industrial sites also do not monitor real efficiency of use of material and energy inputs within their processes despite the fact the costs of these resources are high and are further increasing. IR SCP is helping to explore the feasible potential for resource efficiency and there is a prospect to spread this approach fully on commercial basis after completion of the program of support.

Further information
Information on the resource projects of ENVIROS and CENIA can be found at http://www.usv-partner.cz/ and at http://www.cenia.cz/__C12572160037AA0F.nsf/showProject?OpenAgent&PID=CPRJ6WECYXIH&cat=about Program support for IR SCP is described at www.empress.cz Guidance document for SMEs for increase of competitiveness through eco-efficiency published by MoI is available at http://zpravodajstvi.empress.cz/uploads/attachment/file/30/publikace-prirucka-ke-zvysovani-konkurenceschopnosti.pdf

Denmark – Resource taxation (by ETC/SCP)

Contact details to the Coordinator of the response
Contact: Márton Herczeg, European Topic Centre on Sustainable Consumption and Production under contract with the European Environment Agency

Material input tax on raw materials
In Denmark, a tax on raw material extraction has been in effect since 1977. In 1990, it was replaced by a tax on raw materials following the implementation of the landfill taxation in 1987. The objective of the raw material tax, in combination with the waste tax, was to promote the restriction of raw material consumption and the reuse of building and construction waste.

National resource policy framework
In Denmark the main driver for resource efficiency policies currently is the policy development within EU. Most recently the Europe 2020 strategy, the informal Council of Ministers Meeting (summer 2010), the Flagship Initiative on resource efficiency and EU Council conclusions on sustainable resource management has pointed the way forward for the member states, including Denmark. Danish environment policies have been characterized by the use of a wide variety of policy instruments. Traditionally, environment policy was mainly based on regulation, but in the last two decades this has been supplemented with an increasing use of economic instruments and a range of other instruments, including awareness raising campaigns and voluntary agreements. Awareness raising is targeted towards citizens in general and key actors, e.g. specific industries or companies. The use of economic instruments was greatly increased by a tax reform in 1994. One of the aims of this tax reform was to explicitly introduce elements of green taxation in the Danish tax system. The reform has made it possible to reduce taxation on income and labour, whilst increasing fiscal incentives to protect the environment. Since then the use of green fiscal instruments have steadily increased and the most recent Danish tax reform from 2009 also included a relocation of taxes and duties from labour tax to increased green taxation.

Description of practical example
The tax rate is currently set at DKK 5 per m^3 for selected extracted raw materials, including aggregates (stone, gravel and sand), clay, limestone, chalk, peat, top soil and similar deposits.

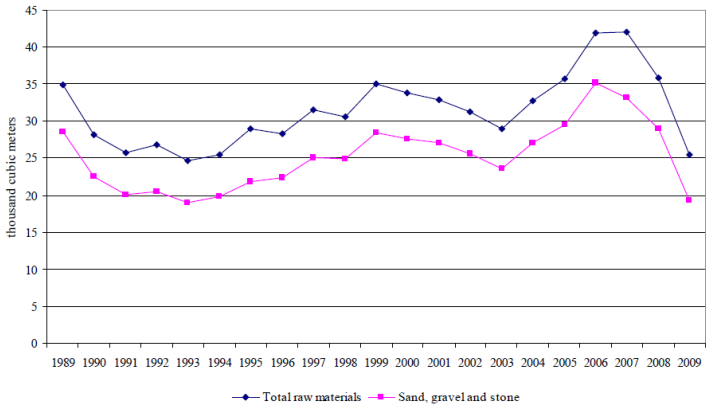
The tax burden increased prices between 3-33% percent depending on material, but the overall tax is small in relative values.

The tax is levied both on raw materials that are extracted for domestic use and on imports to Denmark for domestic consumption. Therefore, imports are taxed, but no tax is levied on exports in order to ensure that domestically and imported raw materials are treated equally. In other words, a BTA is in place to ensure that exported resources are untaxed and unaffected, allowing competition to continue without disruption.

The raw materials tax was complemented with other measures to reduce the use of resources and encourage substitution to recycled materials as a landfill tax, voluntary agreements and, a regulation on the separation of construction and demolition waste. The importance of this policy mix especially of the waste tax.

The tax on raw materials combined with the landfill tax and the scheme for separate collection of demolition materials provides a strong incentive for aggregates users in Denmark to employ recycled materials, rather than extracting virgin materials and disposing of old ones (Söderholm, 2011).

The figure below shows the development of raw materials extraction in Denmark over the period 1989-2009. Extraction levels fluctuated to some extent, but the overall extraction of raw materials has declined slightly over the period, whereas the extraction of resources has decoupled from the growth of the GDP that was around 35% on constant prices (Danmarks Statistik, 2011) over the same period of time. In parallel, in the period from 1985 to 2008 the absolute amount of waste to landfill from construction and demolition activities has declined by 1.2 million tonnes or equivalent to a reduction of 88%.



Source: Statistikbanken (2010) in Söderholm, 2011.

Further information
Danmarks Statistik, 2011, Denmark in Figures 2011.: http://www.dst.dk/pukora/epub/upload/14851/dkinfigures.pdf Danish Tax Authorities (SKAT): http://www.skat.dk/skat.aspx?oId=1880492&vId=0 Resource Efficiency - Country profile Denmark http://www.eea.europa.eu/themes/economy/resource-efficiency/resource-efficiency-policies-country-profiles Raw Materials Tax (Denmark): http://www.economicinstruments.com/index.php/solid-waste/charges-and-taxes-/article/212- Söderholm, P., 2011, Taxing Virgin Natural Resources: Lessons from Aggregates Taxation in Europe*. Resources, Conservation and Recycling, 2011 http://www.sciencedirect.com/science/article/pii/S0921344911000942

Finland - Institutional framework for resource efficiency in Finland (by EEA)

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Institutional setup for
The sectoral and thematic resource efficiency processes are managed by the relevant ministries, mainly by Ministry of Employment and the Economy, Ministry of the Environment, Ministry of Agriculture and Forestry, and Ministry of Finance; with the Parliament also playing an important. LYNET consortium and MOTIVA Material Efficiency Centre were set up to support design and implementation of policies.

National resource policy framework
Finland does not yet have a dedicated resource efficiency strategy. However, resource efficiency considerations are included in a number of key policies, including the Natural Resource Strategy, Mineral Strategy, national program to promote sustainable consumption and production, and the strategy for sustainable development. For an industrialised nation, the Finnish economy is very strongly based on added value obtained from natural resources. Main drivers for the development of resource efficiency policies in Finland include: reducing harmful environmental impacts and climate change; responding to issues related to availability, scarcity and depletion of natural resources; complying with EU relevant policies and legislation; and promoting innovative technologies for export on a global market.

Description of practical example
The Finnish Government broadly draws on the expertise of various expert and advisory bodies when designing policies on resource efficiency, and a number of organisations are involved in the policy process. Many of these are members of **LYNET**, the Finnish Partnership for Research on Natural Resources and the Environment: • Evira - Finnish Food Safety Authority • GL - Finnish Geodetic Institute • MTT - Agrifood Research Finland • Metla - Finnish Forest Research Institute • RKTL - Finnish Game and Fisheries Research Institute • SYKE - Finnish Environment Institute

LYNET draws on hundreds of experts to integrate the efforts addressing the global problems connected to natural resources, food, energy, climate change, biodiversity, and ecosystem services. LYNET has a number of joint programmes: Climate change adaptation and mitigation, Baltic Sea, Bioresources, and Sustainable Land Use. In addition, working groups are set up for specific topics of interest such as: infrastructure, data management and production of statistics, monitoring, information services and project support.

As part of Finland's national programme to promote sustainable consumption and production, the Ministry of the Environment and the Ministry of Employment and the Economy established in the spring 2008 a **Material Efficiency Centre** as a unit in state-owned company Motiva. The Centre aims at being recognized as an independent national coordinator and information source in the field of material efficiency. The Centre initiates and coordinates interactive networks among material efficiency professionals and acts as a data and knowledge centre. The Centre promotes material efficiency by emphasising the importance of proactive approach and early adoption. Best results in material efficiency are achieved by influencing early on through planning and promoting design for environment. Activities of the Centre include:

- material efficiency audit tools for companies
- support for environmental technology procurement
- international project activities
- development of the Material Flow Cost Accounting Standard (ISO 14051)

Motiva itself is an expert company promoting efficient and sustainable use of energy and materials. Its services are used by the public administration, businesses, communities, and consumers. Motiva operates as an affiliated Government agency, and the company's entire share stock is in Finnish state ownership. Motiva is also the national competent body for eco-labelling (Nordic Swan and EU Flower) since 1.1.2011.

Further information

LYNET partnership: www.lynet.fi

Motiva material efficiency center: http://motiva.fi/en/areas_of_operation/

Resource Efficiency - Country profile Finland
http://www.eea.europa.eu/themes/economy/resource-efficiency/resource-efficiency-policies-country-profiles

A Natural Resource Strategy for Finland: Using natural resources intelligently

http://www.sitra.fi/fi/Innovaatiotoiminta/kansallinen_luonnonvarastrategia/materiaaleja/materiaaleja.htm

Former Yugoslav Republic of Macedonia - Mitigation of climate change

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Clean Development Mechanism in practice
Mitigation of climate change and its negative effects to society and the environment is one of the key goals of the Sustainable Development in the Republic of Macedonia. Specific measures for achieving this goal are improving energy efficiency and increasing the share of renewables in the energy sector. These are essential in order to make best use of limited resources and reduce GHG emissions. A Particularly effective instrument is the Clean Development Mechanism, which allows for structural changes in industry, increased resource efficiency and energy savings, thus having significant implications to the efforts to tackle climate change impacts.

National resource policy framework (max 300 words)
Republic of Macedonia became a party to the UNFCCC in 1998 and the **Ministry of Environment and Physical Planning** (MoEPP) has been designated as the National Focal Point to the Convention. The MoEPP is thus the key governmental body responsible for policy making with regards the provisions of the UNFCCC. In the year 2000 a **Climate Change Project Office** was established. The Republic of Macedonia also ratified the Kyoto Protocol in July 2004. MoEPP coordinate all activities related to ratification and was also nominated as the country's Designated National Authority. Climate change issues are now incorporated into the **Law on Environment**, including details on preparation of inventories of GHG emissions and removal of sinks as well as an action plan on measures and activities to abate increase of GHG emission and to mitigate adverse impacts of climate change. Republic of Macedonia (as a non-Annex-I country), satisfies the eligibility criteria to

participate in the **Clean Development Mechanism** (one of the flexible mechanisms of Kyoto Protocol), and has produced a **National Clean Development Mechanism (CDM) Strategy** that aims to facilitate transfer of investment and technologies through CDM for implementation of projects that reduce GHG emissions and contribute to the country's sustainable development priorities.

The recommendation for reduction of GHG and improving energy efficiency is also contained in Macedonia's **First and Second National Communications to the United Nations Framework Conventions (UNFCC)**, prepared by the Ministry of Environment and Physical Planning.

Description of practical example

Macedonia's economy is characterized by a relative high level of energy consumption and GHG emissions per unit of GDP, in fact one of the highest among Central and Eastern European countries. The high emission level is result of Macedonia's energy sector, relying heavily on coal and lignite based thermal power. This means that CDM projects replacing grid-based electricity are likely to lead to high emission reductions and thus be attractive CDM projects. The energy sector in Macedonia contributes to 70% of the country's total GHG emissions. Most of the potential CDM projects are therefore expected to be in this sector. Due to the high carbon emission factor for the Macedonian electricity grid (0,915 t CO_2/MWh) not only electricity production from renewable energy projects, but also energy efficiency, will have more favourable conditions under CDM in Macedonia than in many other non-Annex-I countries. The Department of Energy and Mineral Resources in the Ministry of Economy has a good overview of the potential for CDM projects.

The Clean Developed Mechanism (CDM) provides for Annex-I countries (developed countries) an opportunity to invest in project activities that reduce GHG emissions in non-Annex-I countries, in return for the carbon credit Certified Emission Reduction (CER). The CERs generated by a registered CDM project located in a non-Annex-I county can be used by authorities or companies in Annex-I countries to help meet their emissions targets under the Kyoto Protocol. Involved stakeholders in a CDM project are the Project owner, CDM consultant, Designated National Authority (DNA) of host country, Designated National Authority (DNA) of investor country, Designated operational entity (DOE), CDM Executive Board, Buyer of certified emission reductions (CERs).

CDM project cycle contains several activities including: planning a CDM project activity; preparation the project design document; obtaining approval from each Party involved;

validation, registration and monitoring of achieved GHG emission reduction; Verification and Certification; issuance of CERs and; distribution of CERs.

The aims of the CDM projects that have taken place in the Republic of Macedonia have been to improve the energy efficiency and make energy saving, increasing the share of renewable in the energy sector, ensuring stability in energy supply with investment activities for building of new thermal power plants on gas, and building new big hydro power plants.

Project example within the CDM "Capacity building project for climate projects development", funded by Norwegian Government:

1. Collection and incineration of wine residue for energy production - CCC

2. Geothermal heating of schools, 6 municipalities - MACEF

3. Rehabilitation Bitola Coal Power Plant,

4. Combined Cogeneration Heat and Power, CCHP, ELEM, Energetika

Sources: *Concept paper: Building local expertise in climate project development in Macedonia; and other presentations and material available to the Ministry of Environment and Physical Planning.*

Further information
Resource Efficiency – Country Profile Macedonia: http://www.eea.europa.eu/themes/economy/resource-efficiency/resource-efficiency-policies-country-profiles Clean Development Mechanism: http://www.cdm.unfccc.int http://www.unfccc.org.mk Further details for following the development of the Energy efficiency monitoring system: http://www.eeportal.mk/en MoEPP: http://www.moepp.gov.mk/default-en.asp?ItemID=B704FCDD4E23E6439F6FC4D781A75B74 Center for promotion of sustainable agricultural practices and rural development http://www.ceprosard.org.mk/

France - Producer responsibility schemes for specific waste streams

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Producer responsibility schemes for specific waste streams
These schemes are based on the "Extended producer responsibility (EPR)" principle that holds producers responsible for the costs of managing their products at end of life. In this way, EPR shifts the responsibility for waste management from last user or local authorities to private industry, obliging producers, importers and/or sellers to internalise waste management costs in their product prices. In France, producers choose generally to delegate this responsibility to an ad hoc structure they create and manage, a so-called "eco-organism", who charges fees to producers based on the amount placed on the market. France has EPR schemes based on European and national regulations (14), but also voluntary industrial schemes (6). France is currently the country in the world where the EPR management principle is the most broadly applied, with some 20 EPR schemes for specific waste streams, at different stages of development.

National resource policy framework
The main strategic framework (to 2020) which governs France's actions in terms of sustainable management of natural resources is the Law no. 2009-967 of 3 August 2009. This law sets out the framework for France's policies for the next ten years. The objective of this strategic framework is to bring about a new model of sustainable development which respects the environment and also includes lower energy and water consumption as well as lower consumption of other natural resources. It puts sustainable development into a wide range of sector based policies such as energy, town planning, transport, biodiversity, water, farming and waste management policies. France has also adopted a national strategy for sustainable development (SNDD) for the period 2010-2013. The SNDD aims to develop a lower carbon and lower resource economy to make France one of the major players in the green economy. It has fixed concrete and quantifiable eco-responsible objectives in the areas of energy, water, waste, procurement, buildings, transport and greenhouse gases. It has also included human and social dimensions.

Description of practical example

Driver for policy

At the end of the 1980s, local authorities, responsible for household waste management, were facing strong increases in waste management costs. This was one of the reasons that led French government to adopt a new regulatory instrument based on EPR principle. The first EPR scheme on household packaging was created in 1992. Afterwards, OECD work on EPR (especially the guidance manual for governments published in 2001) and EU regulations have encouraged EPR schemes development.

Expected contribution to the overall national resource policy

First adopted to relieve local authorities of some of the cost of managing waste and transfer the financing from taxpayers to consumers, EPR schemes contributes to national resource policy in several ways. EPR schemes are made to internalise the cost of end-of-life management in the product price; producers are so incited to adopt an eco-design approach. Moreover, the related objective of efficient waste recycling is now systematically found in regulations. Minimum targets for reuse/reutilisation, recycling or recovery operations are fixed when possible in EPR schemes.

Institutional setup and stakeholder involvement

Many actors are involved in design and implementation of EPR schemes.

Professionals (producers and marketers) can choose if they assume the responsibility individually or collectively via a producer compliance scheme (PCS) or “eco-organism”. In the case of regulated EPR schemes, government authorities establish the regulatory framework, certify PCSs for a period of no more than 6 years and ensure that mechanisms are properly executed. The producers are directly involved in the governance of PCSs which is based on partnership between different actors in the product life cycle. In most cases, in EPR schemes concerned with household waste , PCSs sign voluntary agreement with local authorities by which the later pledge to implement separate collection and sorting of end-of-life products and the former pledge to take in the collected products. PCSs can also contract with distributors when the latter are obliged to take back used products.

Results

The State monitors EPR schemes. In most instances, the State entrusts ADEME, a public agency, with the task of establishing Observatories for EPR schemes. The data gathered is used to evaluate the operations of EPR schemes and to ascertain whether each one has attained its objectives.

In 2010, an estimated 18.7 million tonnes of products put on the market were covered by an operational or soon-to-be-operational EPR scheme.

Examples

Type of product	*Targets*	*Data year*	*Declared or apparent reservoir (thousands of tons)*	*Collection rate or apparent collection rate for recovery*	*Recycled rate in relation to tonnage colected*
EPR schemes established in response to European regulations that do not require EPR					
Lubricants	*-*	*2010*	*237*	*89%*	*43%*
Household packaging	*Recycling target : 55% in 2008* *75% in 2012*	*2010*	*4 686*	*-*	*64% (recycling rate in relation with reservoir)*
EPR schemes required by national regulations					
Tyres	*Collection and recovery targets : 100%*	*2010*	*465*	*106%*	*27%*
Graphic papers	*Recovery target :100%*	*2010*	*3 034*	*-*	*43% (recycling rate in relation with reservoir)*
EPR schemes based on voluntary agreements					
Plant protection product packaging	*Collection target : 70% in 2010* *Recycling/recovery target: 20%*	*2010*	*7,3*	*71%*	*30%*
Agricultural films	*Collection target:70% by 2014*	*2010*		*41%*	*96%*

	Recycling/recovery target: 100%				

Further information

Extended producer responsibility in France- Panorama, Ademe,2011

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General Directorate for Risk Prevention

Department for waste management policy

Ministry of Ecology, Sustainable Development and Energy

Germany – Institutional framework for capacity building on resource efficiency (by ETC/SCP)

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Institutional setup and capacity building for implementation of resource efficiency policy
Promoting resource efficiency is an overall policy objective of the Federal Government of Germany, but also of the Federal States (Bundesländer), with many cross-cutting linkages to various policy fields. Therefore, resource efficiency policies are formulated and introduced by various Federal Ministries, covering different issues and aspects of the resource efficiency agenda. To better implement policy programmes and measurements in the field of resource efficiency the various Federal Ministries as well as the Federal States founded several governmental bodies, institutions and networks in the field of resource efficiency with a main focus on capacity building for different target audiences.

National resource policy framework
Promoting resource efficiency is an overall policy objective of the Federal Government of Germany, but also of the Federal States (Bundesländer), with many cross-cutting linkages to various policy fields. Decoupling of economic growth and resource consumption and absolute reduction of resource use and its impact on the environment is already mentioned as a goal in the national sustainable development strategy, substantiated with the target of doubling the abiotic material productivity by 2020 based on 1994. In spring 2012 the German government enacts the National Resource Efficiency Program (ProgRess) to interlink the different measures and provide a framework for a joint resource efficiency policy. The main focus of the programme is the minimisation of impacts on the environment through raw material production and processing with measures on all administrative levels from national to business level. It merges different main drivers and policy approaches e.g. waste policy, securing raw material supply, sustainable consumption and production, improving competitiveness and reducing impacts of resource use into an overall strategy on resource efficiency. Therefore ProgRess supplements and enlarges the German policy approaches to improve resource efficiency in Germany like the sustainable development strategy (2002), the national raw material strategy (2010) or the national biomass action plan (2009).

Description of practical example

Constitution and utilization of *mobilizing institutions* is a key to successful diffusion of resource efficiency and changing attitudes along the value chain. In ProgRess, various measures for capacity building, knowledge sharing and strengthening public awareness are important strategic approaches to foster resource efficiency along the entire value chain. To underpin these measures a broad institutional setup on different levels from federal to local is already in place and is intended to be upgraded in the next years. On the federal level several ministries founded governmental bodies and agencies to foster the implementation of resource efficiency policies and measures by capacity building and knowledge share. The **German Material Efficiency Agency (demea)** was founded in 2006 by the Federal Ministry of Economy and Technology (BMWi) to provide information and increase public awareness of the importance of material and commodity efficiency and to encourage companies to realise material efficiency potentials. One of the main instruments is the program "go-efficient" for advising small and medium-sized enterprises to improve material efficiency. Further the demea award the German Commodity Efficiency Prize which price innovative solutions for resource efficient products, processes or services on a yearly base. The **Centre for Resource Efficiency (VDI-ZRE),** founded in 2009 by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), aims to reduce the resource consumption in German industries by promoting an integrated use of technologies protecting the environment and natural resources, mostly through awareness raising, case studies and best-practice databases. The **Agency for Renewable Resources** (FNR – Fachagentur für Nachwachsende Rohstoffe) was founded in 1993 by the German Federal Ministry of Food, Agriculture and Consumer Protection. The main responsibility of FNR is to support research and development in the area of renewable resources, but also inform the public about current research results and give advice on a range of applications of renewable resources.

Nearly all federal states founded their own agencies to support resource efficiency measures in their responsibilities like consulting services or support programs especially for SMEs. For example the **Effizienz-Agentur NRW** – abbreviated as EFA – is the centre for small and medium-sized manufacturing enterprises in the German state of North Rhine-Westphalia. The objectives of their work are comprehensive strategic and technical improvements concerning the sustainable economy -through new strategies, innovative technology and ecologically-oriented measures. Today, the Effizienz-Agentur NRW is not only a competent and reliable partner for medium-sized enterprises; it is also a capable intermediary between industry, science, politics, the media and the public. Rhineland-Palatinate has created the **Effizienznetz Rheinland-Pfalz** (EffNet) in 2005 as a central consulting and information platform for small and medium enterprises for resource efficiency and environmental technologies.

To support the knowledge transfer on resource efficiency within the German industry and to intensify the communication between economy, science, and politics the German Environment Ministry created the ***Network Resource Efficiency***. It intends to bundle know-how and experience regarding resource protecting production, products and management. It provides possibilities for mutual exchange of information. To operate resource efficient creates special problems for small and medium sized enterprises (SMEs). Thus, the network organizes regional and sector specific conventions and meetings that provide practical information. In doing so, the network units actors from politics, business associations, trade unions and society and co-ordinate their activities and intend to inform about efficient use

of resources and present successful examples of regional or branch-specific companies.

Using several research programs like the **Framework programme for Sustainable Developement (FONA)**, the **National Research Strategy for BioEconomy,** the **High-Tech Strategy 2020 for Germany** or the Eco-Innovation program the federal ministries foster the institutional setup for capacity building also in the research institutions and universities. Furthermore, since 2010 the Federal Ministry of Education and Research (BMBF) fund the **Institute on resource technology** (Ressourcentechnologie-Institut Freiberg). The institute is a joint research centre of the technical university Freiberg and the Helmholtz-Zentrum Dresden-Rossendorf. Main research areas are new efficient mining methods, the increase of availability of secondary raw materials, product-specific selection of raw materials e.g. through smart design and sustainability assessment of resource technologies.

Further information

German Material Efficiency Agency www.materialeffizienz.de

Centre for Resource Efficiency www.vdi-zre.de

Effizienz-Agentur NRW http://www.efanrw.de/index.php?L=1

Effizienznetz Rheinland-Pfalz www.effnet.rlp.de

Institute on Resource technology http://www.hzdr.de/db/Cms?pNid=2423

Network Resource efficiency www.netzwerk-ressourceneffizienz.de

Resource Efficiency - Country profile Germany
http://www.eea.europa.eu/themes/economy/resource-efficiency/resource-efficiency-policies-country-profiles

National Resource Efficiency Program (ProgRess)

http://www.bmu.de/wirtschaft_und_umwelt/ressourceneffizienz/ressourceneffizienzprogramm/doc/47841.php (German, English version available soon)

Hungary - National Industrial Symbiosis Programme (NISP)

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National Industrial Symbiosis Programme (NISP)
The **National Industrial Symbiosis Programme** (NISP), started in 2010, is run by the Public Foundation for the Development of Industry (IFKA) and aims at the **re-use, recycling or recovery of industrial wastes and byproducts** by creating new business co-operations based on the principles of industrial ecology. In the framework of the programme, wastes/byproducts are recorded in a database and workshops are organised to help identify potential synergies, re-use opportunities and promote co-operation between different companies or other stakeholders. Keeping materials in the production cycle and moving wastes higher up the hierarchy enables material, energy and cost savings as well as greenhouse gains.

National resource policy framework
1.5 *The **3rd National Environment Programme** (NEP) 2009-2014 – having sustainable development as its context - handles environmental issues including the improvement of resource and energy efficiency, protection of biodiversity, sustainable management of our genetic resources, sustainable land use, sustainable water management, sustainable production and consumption, food safety, waste management in a comprehensive and integrative manner, based on the DPSIR framework.* *http://www.kormany.hu/download/8/67/10000/NKP_2009-2014.zip#!DocumentBrowse* ***1.6*** *NEP 2009-2014 contains goals and specific measures aiming at improving the efficiency of production and technology development in different sectors (e.g. promotion of material efficient technologies, waste reduction to be applied during design, enforcement of the chemicals policy, improvement of energy efficiency, application of environment management systems, and the use of secondary raw materials). NEP sets as an objective the widespread application of principles and methods helping the prevention and/or reduction of environmental pressure related to production (cleaner production, eco-efficiency, principle of prevention, environmentally-centred management systems, environmentally conscious product planning, and eco products). It also facilitates the adoption of a life cycle approach.* ***1.7*** *NEP, as a framework programme, integrates existing and future strategies and plans*

*and is strongly interrelated with a number of other policy documents, inter alia, the **National Sustainable Development Strategy** (2007-2025/2050), the **National Climate Change Strategy** 2008-2025, the **New Széchenyi Plan**, the **National Reform Programme** under the Europe 2020 Strategy (for details and a more comprehensive list see link) as well as with sector-specific documents, e.g. the National Rural Strategy 2011-2020, and the National Environmental Technology Innovation Strategy.*

1.8 *Development and implementation of policies on resource efficiency are coordinated at ministerial or inter-ministerial level, with the involvement of agencies, authorities, municipalities and other stakeholders.*

With a view to the special characteristics of Hungary and the lack of mineral resources in the country, priority resources include land, soil, water, biodiversity, genetic resources and biomass.

Description of practical example

1.9 *The Public Foundation for the Development of Industry (IFKA) has developed a number of industry-related sustainability projects since 2003.*

*1.10 The **National Industrial Symbiosis Programme** (NISP) seeks to link environmental protection and the sustainable management of resources with competitiveness by creating new business co-operations using industrial symbiosis as an innovative tool.*

Prudent management of resources is a top policy priority in Hungary, given the scarcity of natural resources like minerals and energy in the country.

The NISP programme promotes the reuse, recycling or recovery of industrial wastes and byproducts**.** The material, water and energy flows of manufacturing companies and other potential partners are recorded in a database which helps the partners identify potential synergies. Presentations and workshops are organized for awareness raising and information purposes and to promote co-operation between the potential partners.

In addition to workshops addressing the principles of industrial ecology and the benefits of industrial symbiosis, The webpage of NISP showcases best practice examples and detailed case studies (whole texts available in Hungarian, summaries in English).

1.11 Furthermore, the programme delivers free advice on a number of other areas, including corporate and business management, greening the office, other forms of material savings, environmental management and life cycle analysis.

The NISP programme thus contributes to achieving a number of objectives of the National Environment Programme (incl. material efficiency, use of secondary raw materials, life cycle approach) and those of the related strategies and plans, inter alia, the New Széchenyi Plan, (providing a framework for regional development and focusing on the aspects of green economy, energy efficiency, eco-innovation and sustainable waste management) and the

National Environment Technology Innovation Strategy *(see details in separate RE showcase factsheet).*

NISP helps wastes move higher up the hierarchy by reducing the amount sent to landfills, and by increasing the flow of reusable and recyclable resources. The increased use of secondary raw materials in production saves primary resources, and the greenhouse gains of the co-operations is an important step towards a sustainable low carbon economy (the programme will later also introduce a carbon calculator application http://nisp.hu/en/carbon_calculator).

NISP is co-financed by LIFE+ and the Public Foundation for the Development of Industry is partnered with International Synergies Ltd. of the UK. The target group of the programme consists of diverse manufacturing companies, municipalities and non-governmental organisations of the Central Region of Hungary. These stakeholders are involved in the implementation of the projects.

NISP started in 2010 and will run for 3 years. Several indicators have been established in order to evaluate the progress and though the number of established co-operations is expected to increase substantially in the near future, the first results of the programme are already visible.

Interim results of the project:

- Waste diverted from landfill: 610,9 tons
- Primary resources saved: 624, 9 tons
- Amount of CO2 reduced by avoiding the use of primary resources in production as well as transport needs attributed to it : 6 269 tons
- Reduction of the amount of water used in the production: 6 003.3 tons
- Number of workplaces created: 2

NISP is constantly looking for cooperation opportunities with other projects and initiatives which work towards the mitigation of the effects of climate change, the establishment of a less energy consuming industry and a recycling society.

Further information

For further information, please contact:

Public Foundation for the Development of Industry
H1063 Budapest, Munkácsy Mihály u. 16., Hungary

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E-mail: **info@nisp.hu**, virag@ifka.hu, branyi@ifka.hu

Website of the NISP programme (partly available in English):

http://nisp.hu/hu/bemutatkozas (HU) http://nisp.hu/en/introduction (EN)

http://nisp.hu/en/best_practices (EN) , http://nisp.hu/en/case_studies (EN)

The English subpages are constantly being improved.

Hungary - National Environmental Technology Innovation Strategy (NETIS)

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National Environmental Technology Innovation Strategy (NETIS)
With the adoption of Hungary's first **National Environmental Technology Innovation Strategy** (NETIS) in September 2011 (Gov. Decision No. 1307/2011. (IX. 6.)), the Hungarian Government expressed its determination to mainstream the concept of a green economy and boost innovations related to environmental technology. The medium term strategy (2011-2020) aims for decoupling, resource savings, improved resource efficiency, higher competitiveness by the development of the environmental industy, and by fostering the uptake of innovations. NETIS promotes a move towards preventive, life-cycle based and integrative solutions. NETIS has a crucial role in ensuring the successful implementation of EU 2020 Strategy, with special regard to the Innovation Union flagship initiative.

National resource policy framework
1.12 *The **3rd National Environment Programme** (NEP) 2009-2014 is a framework programme handling environmental issues incl. the sustainable management of diverse resources, the improvement of resource efficiency, sustainable production and consumption, in a comprehensive and integrative manner and in a sustainable development context. NEP 2009-2014 contains goals and specific measures aiming at reduced environmental pressures of and improved efficiency in production, as well as technological development in different sectors. NEP sets as an objective the widespread application of principles and methods serving the prevention and/or reduction of environmental pressure related to production (cleaner production, eco-efficiency; principle of prevention, environmentally-centred management systems, environmentally conscious product planning, and eco products). It also facilitates the adoption of a life cycle approach.* ***1.13*** *http://www.kormany.hu/download/8/67/10000/NKP_2009-2014.zip#!DocumentBrowse* NEP is strongly interrelated with a number of other policy documents, inter alia, the **National Sustainable Development Strategy** (2007-2025/2050), the **National Climate Change Strategy** 2008-2025, the **New Széchenyi Plan** setting the main regional development targets of the Government, the **National Reform Programme** under the Europe 2020 Strategy (for details and a more comprehensive list see

http://www.eea.europa.eu/themes/ economy/resource-efficiency/hungary-2014-resource-efficiency-policies/view) as well as with sector-specific documents*, e.g. the National Rural Strategy 2011-2020 http://videkstrategia.kormany.hu/index.*

Other relevant strategies that were taken into consideration when creating the NETIS include the **Science, Technology and Innovation Strategy** and the **Research, Development and Innovation Strategy**, the latter providing an overall framework for sector-based innovation strategies and an integrated funding system together with a simple and transparent legal environment.

With a view to the special characteristics of Hungary and the lack of mineral resources in the country, priority resources include land, soil, water, biodiversity, genetic resources and biomass.

Description of the practical example

Hungary is not abundant in natural resources. It strongly relies on energy and raw material imports hence the development of energy and material saving technologies, a higher resource efficiency, reuse, recycling of waste and the use of renewable energy are vitally important for the country. The economic crisis has put the spotlight on the crucial need for innovations resulting in a greener, more sustainable economy, including the decoupling of economic development from environmental pressures resulting from unsustainable resource use and pollution.

The **National Environmental Technology Innovation Strategy** explores the crucial linkages between innovation and green economy for the period of 2011-2020. It sets the development of environmental industry and the acceleration of the uptake of related innovations as its overall objectives.

The NETIS contains a review of the current position of the Hungarian environmental industry, stating that it has a high potential in terms of intellectual capital and services but, due to its current structure, is not yet capable of living up to these advantages, nor are its actors integrated well enough to the rest of the Hungarian innovation system.

Therefore, the Strategy identifies a number of policy measures that can give impetus to innovations related to environmental technology and can encourage industries to take up more sustainable practices. NETIS identifies a wide range of opportunities for innovation and intervention in the fields of product innovation, process innovation (e.g. cleaner production technologies) and organizational innovation.

The primary **aim** of NETIS is to foster innovations related to environmental technology that in general enable natural resource savings and a reduction of the ecological footprint as well as the pressure on ecosystems. In particular, they help to move towards a more sustainable material management e.g. via the reduction in the use of primary resources, an increase in the use of secondary resources, and the wide spread use of high added-value, knowledge-based, environmentally-friendly techonologies that use natural resources wisely. In terms of resource efficiency and resource saving, special attention is paid to the priority resources of the country.

Target areas for innovation include waste management, water management, sustainable agriculture, soil protection and remediation, technologies for air, noise, renewable energies, and sustainable construction. Horizontal technological innovations include: the development of advanced materials; the application of nanotechnology in the field of energy, environment and production technology; the application of biotechnology in the field of agricultural, food production, chemical, energy sectors and; in the field of environmental remediation, the use of biobased products as well as the use of photonics in renewable energy production technologies.

The Strategy highlights that, in addition to the end-of-pipeline technologies, a life-cycle based, prevention-centered and integrated approach should emerge.

The Strategy promotes a broader use of the life cycle analysis, closed material cycles and green product design.

The spread of these innovations (e.g. procedures that cause less pollution and handle all resources incl. wastes in a more sustainable manner, less resource intensive products, services and all kinds of more resource efficient organizational solutions) can bring forth a development of the environmental industry in a way that will lead to increased employment and improved competitiveness of the country.

The Strategy can contribute to a number of objectives of the National Environment Programme (e.g. promotion of material efficient technologies, waste reduction during design, improvement of energy intensity, application of environment management systems and the use of secondary raw materials) and it also has direct links with the New Széchenyi Plan, which has green economy as one of its priority areas. *(The Green Economy Development Programme targets green energy, energy efficiency, green education, green employment and awareness raising and green R+D+I.)*

NETIS has a crucial role in ensuring the successful implementation of EU 2020 Strategy. It fits well with the sustainable consumption and production goals of Agenda 21 of the UN, and with the concept of sustainable materials management.

NETIS will use a specific policy-mix that consists of legal, economic instruments and information based tools as well as sector-specific measures. For an innovation friendly setting administrative procedures will be simplified and cooperation between governanmental bodies will be improved. Green public procurement and greener tax system may also be applied. Information tools include awareness raising, green education and management.

The elaboration of the Strategy was led by the **Ministry of Rural Development**, in strong cooperation with the **Ministry for National Economy** and the **National Research, Innovation and Science Policy Council**. The Council was established in 2010 and served as a major advisory body in this process. The opinions of business, chambers and other stakeholders, including municipal authorities have also shaped the strategy.

The main target group of the Strategy is ambitious, forward looking companies, predominantly SMEs, yet a wide cooperation between the above mentioned actors is needed for a successful implementation.

The first review of the NETIS will be carried out in 2013. In addition to this, reports will be submitted biannually to the Governement in order to ensure transparency and monitoring.

Progress in general and in terms of resource efficiency triggered by the Strategy will be evaluated at a later stage.

In the Strategy, a number of resource efficiency and savings targets have been set for the year 2020 *(as compared to the value in 2007)*:

- material-intensity: 80% (DMC/GDP)
- energy-intensity: 80% (toe/GDP)
- water-intensity: 80% (m3/GDP)
- import-dependence of fossil fuels: 75% (%)
- public road transport energy efficiency: 80% (toe/tkm)
- railway transport energy efficiency: 85% (toe/tkm)

(For further targets, see p66 of the Strategy; link below)

Further information

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Hungarian website to governmental news on environmental technology:
http://kornyezettechnologia.kormany.hu/

Hungarian document on NETIS:
http://kornyezettechnologia.kormany.hu/download/c/66/40000/NKIS.pdf

Hungary - Pannon Seed Banks

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Pannon Seed Bank - ex situ conservation of wild and cultivated plant diversity
1.14 *In the framework of the* ***Pannon Seed Bank project,*** *a joint seed bank for the agricultural and wild flora of the Pannon biogeographical region is being established. The long-term seed preservation of the wild vascular flora and the ex situ conservation of cultivated plant diversity serves as a unique and demonstrative example in line with the objectives of the Convention on Biological Diversity.* *1.15 This valuable collection of natural assets is of great importance in terms of maintaining biodiversity at national, European and global levels and meeting the current biodiversity objectives.*

National resource policy framework
1.16 *With a view to the special characteristics of Hungary and the lack of mineral resources in the country, priority resources include land, soil, water, biodiversity, genetic resources and biomass.* ***1.17*** *The* ***3rd National Environment Programme*** *(NEP) 2009-2014 – having sustainable development as its context - handles environmental issues incl. the improvement of resource and energy efficiency, protection of biodiversity, sustainable management of our genetic resources, sustainable land use, sustainable water management, sustainable production and consumption, food safety, waste management in a comprehensive and integrative manner, based on the DPSIR framework.* ***1.18*** *NEP 2009-2014 includes as appendices* ***the National Basic Plan for Nature Protection,*** *and the* ***National Biodiversity Strategy and Action Plan.*** ***1.19*** *NEP, as a framework programme, integrates existing and future strategies and plans and is strongly interrelated with a number of other policy documents, inter alia, the* ***National Sustainable Development Strategy*** *(2007-2025/2050), the* ***National Climate Change Strategy*** *2008-2025, the* ***New Széchenyi Plan****, the* ***National Reform Programme*** *under the Europe 2020 Strategy (for details and a more comprehensive list see link) as well as with sector-specific documents, e.g. the National Rural Strategy 2011-2020, and the National Environmental Technology Innovation Strategy.*

1.20

Description of practical example

1.21 *The traditional methods of nature protection going back several decades in Hungary have resulted in considerable expertise in the field and achieving the designation of protected areas. The experiences gathered have highlighted that in-situ protection needs to be reinforced by ex-situ conservation.*

1.22 *In order to assist and complement in situ species conservation activities, the Pannon Seed Bank project was started in January 2010. The LIFE+ co-financed project runs until December 2014.*

1.23 *In compliance with Convention on Biological Diversity and the EU Biodiversity Action Plan, the aim of the project is to conserve the genetic diversity of the Pannonian biogeographical region's entire flora, including the wild flora, as well as crop and vegetable plants serving human nutrition, in one place. This is achieved by expanding the current functions of the world's 13th largest agricultural gene bank, the* ***Research Centre for Agrobiodiversity*** *(former Research Centre for Agrobotany, with more than fifty years of experience in the conservation of agricultural genetic resources).*

1.24 *The project contributes to objectives set out in the* ***National Environment Programme*** *and its appendices (incl. maintaining biodiversity, ex situ conservation and sustainable management of our genetic resources) and the valuable collection of natural assets is also of great importance in terms of meeting the current biodiversity objectives and maintaining biodiversity at European and global levels. It also relates to the* ***National Rural Strategy*** *and the* ***National Environmental Technology Innovation Strategy****.*

1.25 *This project utilizes international and national experiences and knowledge in this field by assessing available scientific literature, carrying out study tours and training, cooperating with experts and utilizing knowledge of related conventions, agreements and networks. Seed collection strategy and methodologies are being developed by the Institute of Ecology and Botany of the Hungarian Academy of Sciences, with the involvement of prominent botanists. Based on this scientifically well-founded strategy, collection will be carried out by botanical experts and the national park directorates. By the end of the project, approximately 50 percent – at least 800 species – of the species of the wild native flora will be collected.*

Seed samples will be safeguarded in the **Base and Active storage facilities** of the Pannon Seed Bank established at **Research Centre for Agrobiodiversity** (NÖDIK). The Base collection serves the long term conservation of reserve samples, while the Active collection helps to facilitate research and distribution of research material. To avoid risks of unexpected environmental hazards and to achieve full safety, a duplicate store of the Base collection on the territories of Aggtelek National Park Directorate and a duplicate store of the Active seed collection at the Institute of Ecology and Botany will be established. In order to show how the genetic material preserved in the Pannon Seed Bank could be utilized in nature, a model reintroduction of certain species of the sand steppe community typical to the Pannonian biogeographical region will be done at Natura 2000 priority habitats (Pannonic sand steppes

and inland dunes) of the Kiskunság National Park.

Awareness-raising and information dissemination activities for professional audience, students and the general public are part of the project. NÖDIK will provide the possibility to learn about the seed bank operations on spot, through the establishment of a Pannon Seed Bank Exhibition as well as guided tours and university courses.

Moreover, the project will also focus on the awareness raising of **decision makers** (members of the parliament, government officials etc.) on the importance of biodiversity, including plant diversity and ecosystem services. Informing and **involving stakeholders** (relevant ministries, local municipalities, non-governmental organizations etc.) is **essential for the implementation** of the long-term objectives of the project.

In order to disseminate project information within Europe, an international conference will be organized for relevant institutions, experts and projects, with special attention to those having part of the Pannonian biogeographical region.

The **progress of the project** can easily be tracked:

http://www.pannonmagbank.hu/ered/ered1e.html

Further information

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1.26 *Webpage of the project in English:*

1.27 *http://www.rcat.hu/pannonmagbank/indexe.html*

1.28 *See also:*

1.29 *http://www.pannonmagbank.hu/letolt/inf_tabla_szoveg.pdf*

1.30 *http://www.pannonmagbank.hu/ered/ered1e.html*
http://www.pannonmagbank.hu/aktu/aktu1e.html

Kosovo under UNSCR 1244/99 - Implementation of solar panels at UCCK (University Clinical Center of Kosovo) and SC (Student Center)

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Implementation of solar panels at UCCK (University Clinical Center of Kosovo) and SC (Student Center)
Promoting efficiency of energy is an overall policy objective of Ministry of Economical development. Therefore this Ministry has developed projects promoting solar energy. One such project was the implementation of solar panels at University Clinical Centre of Kosovo and Student Centre. The energy produced by the solar cells was used for sanitary water heating.

National resource policy framework
Kosovo has yet to establish a dedicated resource efficiency policy. However, it has a base in energy production. The Energy Regulatory Office (ERO) Rule, "Certificate of Origin" supports energy production from renewable energy sources. The Scheme defined in this Rule aims at promoting the production of electricity from renewable energy sources to meet the indicative targets for electricity consumption from Renewable Energy Sources defined by the Ministry responsible for Energy pursuant to Article 13 of the Law No. 03/L-184 on Energy. The ERO issues certificates for electricity produced from renewable energy sources or waste or in combination with heat in a single generating unit. In comparison to other similar countries, Kosovo lacks the investors to improve its current economic state, by fully using its natural resources.

Description of practical example
One of the projects on promoting energy efficient from Ministry of economical Development was installation of solar panels at University Clinical Centre of Kosovo (UCCK) and Students Centre. The project began in November 2008 and ended in March 2009. This project was

initiated by the Ministry of Economical Development. During this project UCCK was equipped with solar panels to feed newly installed sanitary water boilers.

- Pediatric Clinic 25 solar panels, 2x4000 litre water boilers
- Neonatology Clinic with 22 solar panels, 2x3500 litre water boilers
- Psychiatric Clinic with 21 solar panels and, 2x350 litre water boilers
- Neurology Clinic with 21 solar panels, 2x3500 water boilers
- The Students centre was equipped with 60 solar panels, 2x5000 litre water boilers

The total surface area of the panels is 351.64 $m^{2.}$

The boilers can use the newly installed solar energy, steam energy and electric energy.

This project will provide the supply of hot sanitary water to 750 students and 500 patients. Overall energy saved is approximately ***250 MWh / year.***

Further information
www.mzhe-rks.net

Latvia - Special tax rates for plastic bags attached by a merchant to an aggregate of goods or products

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Special tax rates for plastic bags attached by a merchant to an aggregate of goods or products.
The aim of the measure is to reduce consumption of plastic bags in Latvia. In 2008, Latvia has introduced higher tax rates for plastic bags supplied by a merchant to an aggregate of packaged or unpackaged goods or products, for customer's convenience or advertising design, regardless of whether or not consumers are charged for the bags. The legal base for application of tax is the Natural Resources Tax Law. Latvian Parliament (Saeima) has approved the revised legal act on 14th of November 2008.

National resource policy framework
There is no one specific resource efficiency strategy in Latvia, but resource efficiency is integrated in other framework strategies. The **Latvian Sustainable Development Strategy of Latvia until 2030**[4] (2010) (Ministry of Environmental Protection and Regional Development) includes national guidelines for sustainable development and spatial perspective. It addresses the management of nature capital, development of market-based instruments, capitalisation of nature actives and promoting sustainable life style. Currently the review is under preparation by Crossectoral coordination centre and to be submitted to the national Parliament by October 2012.

[4] http://www.latvija2030.lv/upload/latvija2030_saeima.pdf

Environmental Policy Strategy 2009-2015 (MEPRD[5]) concerns all environmental sectors. Resource efficiency is particularly addressed in such sectors:

- Air (application of best available technologies, clean production, rational use of resources, and modernisation of heating systems),
- Water (modernisation of water systems to reduce water leakages; reduce hazardous materials' flow into the Baltic Sea),
- Energy (change of consumption patterns, renovation of buildings, and development of technologies to foster energy efficiency and foster effective use of renewable energy),
- Nature (preserves biodiversity and ensure balance between nature conservation and economic interests) and
- Land (to ensure rational, environmentally sound and sustainable use of land resources, subterranean depths and soil, including improvement of waste management, waste recycling and introduction of packaging deposit system).

A midterm review is under preparation. A 1st draft will be ready by 1 December 2012.

Policy development for resource efficiency is the responsibility of several ministries –

- Ministry of Environmental Protection and Regional Development of the Republic of Latvia (waste, sustainable development),
- Ministry of the Economics (competitiveness, energy, innovations),
- Ministry of Transport (transport),
- Ministry of Agriculture (agriculture, rural development and forests).

Description of practical example
The reason for introducing such a measure was the increase of plastic packaging. The consumption of plastic packaging had increased by between 19 and 25 % over a seven year period. Taking into consideration the fact that disintegration period for plastics is much longer than 10 years, the waste volume had significantly increased. The recycling process is

[5] http://www.varam.gov.lv/lat/pol/ppd/

complicated and expensive. Therefore, special tax rates were introduced for plastic carrier bags that are 1.2 to 4 times higher (depending on their type) than those for other plastic packaging. The introduced measure increased the natural resourced tax rate to plastic carrier bags supplied by a merchant to an aggregate of packaged or unpackaged goods or products, for customer's convenience or advertising design, regardless of whether or not consumers are charged for the bags.

The tax rate applied:

- 2.60 lats per one kilogram (to plastic bags weighting less than 0.003 kilograms) and
- 0.80 lats per one kilogram (to plastic bags weighting more than 0.003 kilograms).
  (exchange rate: 1Euro/0.702804 Ls)

Tax rates for plastic carrier bags manufactured from bioplastics or oxy-degradable plastics are the same as for any packaging manufactured from bioplastics or oxy-degradable plastics. The introduction of this special natural resources tax rate for plastic carrier bags has significantly decreased the use of plastic bags. It is difficult to single out an exact contribution of the measure in the overall waste volume reduction, but it is certain that positive trends have been noted. State authorities ensure the design and implementation of the proposed instrument, particularly the Ministry of Environmental Protection and the Regional Development and State Revenue Service. There was no need for additional administrative measures or structures, because the measure fitted into the existing natural resources tax collection scheme. Experiences from other countries were assessed and relevant stakeholders were involved at the design stage.

The initial response from traders associations and producers was cautious. But during the first year after changes in legislation, almost all retailers stopped offering plastic bags for free and consumption of plastic carrier bags reduced by up to 50% in several retail chains compared to preceding period, meanwhile there was an increased share of more environment friendly packaging. The collected tax increased the finances available for projects to promote innovative techniques and environmental information and education campaigns.

Further information

http://www.likumi.lv/doc.php?id=124707 Natural Resources Tax Law

http://www.varam.gov.lv/lat/darbibas_veidi/iepakojums/ Ministry of Environmental Protection and Regional development web site.

www.packaging.lv packaging@packaging.lv Latvian Packaging Association

Montenegro - Strengthening institutional dialogue on sustainable development

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Strengthening institutional dialogue on sustainable development
Although resources efficiency still does not have a dedicated strategy within the Montenegrin legislative framework, its various aspects are incorporated in relevant development and sectoral policies and are implemented by several ministries. To ensure that different aspects of this and other concepts related to sustainable development are taken into account in a coherent and holistic manner, the Government of Montenegro established a National Council for Sustainable Development, a multi-stakeholder body chaired by the Prime Minister. Although the Council is not focusing solely on Resource efficiency, it recognizes the importance of this concept in various ways. For example, resource efficiency was one of the key areas at the wide consultation within the Rio+20 national preparations. Moreover, the Council discussed various sectoral strategies which prescribed ways for the use of a particular resource (forestry, energy, waste, etc...) and on those occasions gave numerous recommendations to ensure their sustainable use.

National resource policy framework
Montenegro still does not have a dedicated resource efficiency strategy. However, the topic of resource management is included in both the overall development strategies as well as several sectoral policies such as: ***National Strategy for Sustainable Development (2007-2012)***; ***Energy Development Strategy of Montenegro by 2025***; ***Action plan for energy efficiency (2010-2012)***; ***Forests for future of Montenegro (National Forestry Politics, 2008)***, and the ***National Waste Management Policy and Strategic Master Plan*** *etc*. All of these strategies include or are rooted in the core sustainable development principles and deal with the efficiency of resources. The National Strategy for Sustainable Development as an umbrella document for development of Montenegro is expected to be revised in 2013. The revised NSSD will include *resource efficiency* and *sustainable consumption and production* as key topics and mechanisms for the implementation of sustainable development in practice. Organizing the process of NSSD revision is taking place in parallel with the UNDP's process on developing the National Human Development Report for 2013/2014, which will focus on RE and which

will provide the expert analyses for RE that will be inputs for the NSSD.

Description of practical example

Following the commitment to develop as an *ecological state*, which has been enshrined in its constitution in 1992, one of the overall policy objectives of the Government of Montenegro is to enhance the dialogue on sustainable development between policy makers and businesses, civil society, academia and all other stakeholders. As a result of this approach, the Government of Montenegro established the **National Sustainable Development Council** (NSDC) as a consultative body to the Government for issues of sustainable development in 2002.

The Council is a multi-stakeholder body that consists of 23 representatives from various social structures: representatives from the Government (6); local governments (3); academia (2); the business sector (4); NGOs (4) and independent individuals/experts in the area of sustainable development (4). The Council is chaired by the Prime Minister of Montenegro, which ensures the highest political debate and consideration of all the topics discussed.

The introduction of the group of independent experts is a novelty in the work and structure of the Council and is a result of reforms implemented in 2008. As a result of this reform, the number of Council members has been reduced; the establishment of working groups contributed to the efficient, continuous and more active work of the Council throughout the year, and the Council began assisting municipalities in establishment of local sustainable development councils.

Since it was set up, **the Council provided expert opinion and recommendations on all relevant development and sectoral strategies** before final discussion in the Government. These included all of the aforementioned strategies dealing with the management of different resources as well as the National Sustainable Development Strategy. As a result of high political and wide societal representation in the Council, the respective institutions, in most cases, fully take into account its recommendations. Additionally, **the Council had a prominent role in the national preparations of Montenegro for the Rio+20 Summit**, which resulted in the publication of a national report on national green economy potentials and included resources efficiency as a core mechanism in this regard. All societal groups were consulted and were involved in the process of the preparation of this report. The revised NSSD will also be deliberated by the Council, while its working group will be directly involved in the process of revision, ensuring that all aspects of issues such as resources efficiency are comprehensively analyzed and discussed.

Further information
Division for the support to the NCSD: http://www.kor.gov.me/en/office *National Strategy for Sustainable Development: http://www.kor.gov.me/en/sections/national-strategy-for-sustainable-development/92859/157161.html* *Annual reports on implementation of the NSSD: http://www.kor.gov.me/en/sections/national-strategy-for-sustainable-development* *National Council for Sustainable Development: http://www.gov.me/naslovna/Savjetodavna_tijela/Nacionalni_savjet_za_odrzivi_razvoj/*

Poland – Thermo-modernisation and Renovation Fund as source of the financial support for thermo-modernisation investments in housing

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Thermo-modernisation and Renovation Fund as source of the financial support for thermo-modernisation investments in housing
The main law governing the operation of the Thermo-modernization and Renovation Fund, which grants State's financial aid to investors implementing thermo-modernization and renovation projects in housing financed from commercial loans, is the *Act on Support of Thermo-modernization and Renovation Investments of 21 November 2008* (the "TM Act"). The TM Act has modified the system implemented in 1998 and established a subsidized loan program designed to significantly increase the implementation of heating system and building envelope related energy efficiency improvements in residential and public buildings. The new law came into force on 19 March 2009, and incorporates solutions designed to support not only thermal modernization, but also renovation projects. Additionally, the new law serves as a compensation tool for the owners of tenements previously affected by regulated rents. In most cases, financial aid is granted in the form of a bonus which partially repays a credit obtained from a commercial bank to finance the project. The relevant resources are provided by the Thermo-modernization and Renovation Fund, operated by the Bank Gospodarstwa Krajowego (National State Economy Bank – Poland's only state-owned bank) and mainly financed out of the state budget. The main goal of the Fund is to promote the best practices in thermo-modernization and renovation projects, related to energy efficiency improvements in residential buildings, particularly from the perspective of the scope as well as technical and economic parameters of the TM investment, and applications of adequate techniques in the TM investment.

National resource policy framework
Improving energy efficiency is very important for increasing resource efficiency in Poland. Energy efficiency is important also for ensuring sustainable growth and security of energy supply, improving the competitiveness of Polish companies and ensuring social wealth, with a positive impact on CO_2 emissions and reducing other pressures on the environment, with potentially significant economic and social benefits. The government therefore aims to reach the energy efficiency targets in a way that would be most economical, or cost effective.

The main objectives of the Polish energy policy as regards energy efficiency include:

- Aiming to maintain zero-energy economic growth, i.e. economic growth without growing demand for primary energy;
- Consistent lowering of energy consumption of the Polish economy to reach the EU-15 level.

In the **Energy Policy of Poland until 2030** and **The National Environmental Policy for 2009-2012 and its 2016 outlook** there are provisions on rational use of energy resources and geological resources management. Dedicated sections deal with energy efficiency and use of renewable energy sources (RES). RES is also addressed in the **National Action Plan for Renewables**, as a direction for the development of the energy sector. In addition, energy efficiency is tackled in the **National Energy Efficiency Action Plan** (NEEAP) which outlines existing and planned measures to stimulate efficiency improvements in housing, service, industry and transport sectors.

Specific objectives in energy efficiency include the increase in energy end-use efficiency. One of the measures described in the Energy Policy of Poland until 2030 to improve energy efficiency is supporting investments in energy savings using preferential loans and EU and national subsidies, including Thermo-modernization and Renovation Fund, the Operational Programme for Infrastructure and Environment, regional operational programmes and funds from the National Fund for Environmental Protection and Water Management. Undoubtedly, the Thermo-modernisation and Renovation Fund, addressed to housing sector, remains an important support instrument for the efficient energy use.

Description of practical example

In accordance with the TM Act, the implementation of the thermo-modernization investment basically means the undertaking is implemented for:

a) an improvement resulting in reduction of energy demand necessary to warm and heat up usable water and to warm dwelling houses, collective housing buildings and buildings owned by public sector entities to carry out administrative duties;

b) an improvement resulting in reduction of primary energy losses in local heat distribution networks and local energy sources supporting local heat distribution networks, assuming that the above-mentioned buildings to which energy is delivered from those networks, meet energy-saving criteria set forth by construction law provisions or the activities aimed to reduction of consumption of energy delivered to those buildings have been implemented;

c) installation of the technical connection to the centralized heating source as a consequence of the elimination of the local heating source, resulting in the reduction of costs of acquiring heat delivered to the buildings mentioned in the point a) above;

d) total or partial exchange of energy sources to renewable sources or application of high-performance cogeneration.

The investor is entitled to receive TM bonus if the TM investment will result in the following savings:

TM Project	Type of savings	Savings to be achieved
Modernization of heating system in building, exclusively	Reduction of annual energy demand	At least 10%
Comprehensive modernization	Reduction of annual energy demand	At least 25% or at least 15% if the heating system was modernized during 1985-2001
Modernization of local heating source and district heating networks	Reduction of annual energy losses	At least 20%
Connection to district heating network due to liquidation of local sources	Reduction of annual heat costs	At least 20%
Conversion of conventional energy sources into renewable (unconventional) ones	n/a	n/a

The anticipated savings have to be confirmed by an energy audit attached to an application for TM bonus submitted to BGK, together with a conditional loan agreement concluded by a commercial bank with an investor. The loan agreement is conditioned upon positive verification of energy audit by Bank Gospodarstwa Krajowego. The detailed process of audit verification commences under the Minister of Infrastructure Regulation of 17 March 2009.

In the TM Act the energy audit has been defined as an analysis determining the scope and technical and economic parameters of the TM investment, indicating the optimal solution, particularly from the perspective of implementation costs of the investment and energy savings. The positively verified energy audit determines detailed scope of the TM investment and its construction plan assumptions. The detailed scope and form of the energy audit has been also specified by the Minister of Infrastructure Regulation of 17 March 2009.

The construction plan prepared by a certified designer for each TM investment has to meet the verified energy audit assumptions and has to comply with the Polish Construction Law. On the basis of the Construction Law, the designer is obliged to prepare a construction plan in compliance with construction law provisions, rules of technical knowledge and – if

required - local development and environmental decisions.

As provided in the TM loan agreement, the designer of the construction plan certifies also that the construction plan has been prepared on the basis of the verified energy audit assumptions and the investor is obliged to implement the TM investment in accordance with the energy audit verified by BGK.

The bonus is paid after realization of the investment only if the thermal modernization project:

- has been carried out in accordance with the construction project articulated in the energy audit;
- has been finished on time as determined in the credit agreement between the investor and the lending bank.

The bonus is transferred to the investor by Bank Gospodarstwa Krajowego through the lending bank in the form of partial repayment of the credit used for realization of the thermal modernization project undertaken by the investor.

Estimations made on the basis of a database of verified audits show that the average annual energy savings per awarded TM bonus is equal to 702.7 GJ/year or 16.77 toe/year. Multiplying this by the number of bonuses awarded till 2011 (22 790 bonuses) by annual energy savings per one awarded bonus (16.77 toe) results in 382 183 toe in 2012. However, it has to be stressed that the Thermo-modernization and Renovation Fund is not designed to finance all the thermo-modernization and renovation projects in Poland, but to promote the best practices. Therefore, the Fund supports only these projects, which wouldn't be optimally realized without banking loans and supplementary TM bonus. These projects play an exemplary role in popularizing benefits generated by thermo-modernization and renovation projects.

Further information

1. Institutions responsible for realization of the TM programme

Ministry of Transport, Construction and Maritime Economy, Department of Housing, ul. Wspólna 2/4, 00-926 Warszawa, Poland, tel. (+48) 22 661 82 03, fax (+48) 22 628 89 58, info@transport.gov.pl, www.transport.gov.pl

Bank Gospodarstwa Krajowego, Al. Jerozolimskie 7, 00-955 Warszawa, Poland, Headquarter's Reception Desk tel: (+48) 22 596 59 99, (+48) 22 599 80 95, fax (+48) 22, bgk@bgk.com.pl, www.bgk.pl

2. Publications and websites

http://www.mg.gov.pl/Bezpieczenstwo+gospodarcze/Energetyka/Efektywnosc+energetyczna

Poland - GreenEvo

Contact details to the Coordinator of the response
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GreenEvo – technology accelerator
Decoupling of economic growth and resource consumption and reduction of resource use (and its impact on the environment) are key priorities of the new strategy "Energy safety and environment". The strategy aims at achieving the economic growth while at the same time taking good care for the environment. The document is planned to be adopted by the Polish government at the end of 2012. Particularly important, in the context of changes taking place in the global and European economy, is the need for efficient use of resources and new production and consumption patterns. Therefore, main directions of the aforementioned strategy are the rational management of mineral resources, more efficient and sustainable use of domestic energy resources and more rational management of waste. Because delivering on such horizontal objectives requires cross-cutting and interdisciplinary initiatives, one of the key examples of relevant actions is GreenEvo – Technology Accelerator. GreenEvo addresses all these issues in the framework of support for eco-innovative technologies, as well as to disseminate green technologies to third countries. The main objective of GreenEvo is to provide international markets with a guaranteed quality of Polish environmental technologies.

National resource policy framework (max 300 words)
Promoting resource efficiency is one of the overall policy objectives of the Government of Poland, with many cross-cutting linkages to various policy fields. Therefore, resource efficiency policies are formulated and introduced by various Ministries (Ministry of the Environment, Ministry of Economy, Ministry of Regional Development, Ministry of Agriculture and Rural Development, Ministry of Transport, Construction and Maritime Economy), covering different issues and aspects of the resource efficiency agenda within the framework of newly established system of 9 horizontal national development strategies: Innovation and Efficiency of Economy Strategy (co-ordination - Ministry of Economy), Transport Development Strategy (co-ordination – Ministry of Transport, Construction and Maritime Economy), Energy Safety and Environment (co-ordination – Ministry of Economy), Regional Development Country Strategy (co-ordination – Ministry of Regional Development).

1.31 *Description of practical example - GreenEvo case study*
The Project involved carrying out studies of selected international markets and identifying

needs of the countries to which technologies are transferred. Polish companies selected for the GreenEvo project have undergone a series of specialized trainings. They have been well prepared for managing their products in a competitive manner; they have been educated in terms of specific legal regulations as well as technical standards applicable on those markets. The awarded participants of the GreenEvo Project are highly able to share their technologies, experience and expertise with countries that face environmental problems.

Within the framework of the project, the Ministry identified the best environmental technology solutions in Poland, including: wastewater and water treatment technologies, innovative hazardous waste treatment technologies, solutions supporting the use of renewable energy sources, including agricultural briquette-making machines and solar panels, technologies for coke industry energy-saving technologies. In the above-mentioned areas, the Polish Clean Tech industry offers tested and innovative solutions.

The identified and awarded green technologies are a result of several years of research and development work, implemented on behalf of satisfied clients and tested by independent experts. In many countries they have received patents, awards and certificates.

Entrepreneurs in the project enter fearlessly into competition with the largest international rivals. Their success is due to innovations, access to a qualified research and development workforce and the relatively low costs of labour in Poland.

Among the technologies distinguished, solutions constituting the source of Poland's technological advantages, supporting the processing of industrial and communal waste products, as well as the destruction of communal, farm and industrial wastes including asbestos, are a serious ecological challenge in many countries.

As for the group of technologies assisting in protecting the environment, we can highlight fuel cells, geothermal heat pumps, and solutions making use of biomass and biogas for generating energy. The companies also offer catalysers improving the efficiency of combustion processes, along with systems aiding in the optimization of energy use.

In this year's edition of GreenEvo we are also supporting biodiversity using a technology for aerating surface waters and renewing lakes, as well as a solution protecting fish from swimming into areas posing a danger to them.

In 2011 alone, GreenEvo participants revenues increased by 31 % on average, and their export revenues soared by 58 %. What is more, 86 % of companies made a trade offer with foreign customers, and 50 % of them have signed distribution agreements with foreign partners.

Considering that the environment for eco-innovations has improved, Poland should now focus on implementation of legislative solutions and utilisation of the EU funds to support transformation towards green economy. This transformation will necessitate solutions for a significant decrease in resource and energy consumption and a reduction of pollution released to the environment. Therefore, Poland’s future depends on the pace and scale on which eco-innovations are implemented, i.e. on the pace and scale of the green economy transformation.

Other eco innovation related initiatives of the last year include:

a) GEKON – Environmental Concept Generator - the programme based on the agreement between the National Fund for Environmental Protection and Water Management and the National Centre for Research and Development. The main objectives of the GEKON: increasing the innovativeness of the Polish economy through the research, development and implementation of environmental technologies. GEKON is a new financial instrument aimed to stimulate the cooperation between the business sector and scientific institutions. The budget is PLN 400 million including 200 million PLN from the National Centre for Research and Development on R & D and PLN 200 million from the National Fund for Environmental Protection and Water Management.

b) Poland confirmed its interest to join the ETV Pilot Programme in 2010. The synergy of ETV with other programmes (schemes and strategies supervised and coordinated by other ministries and their executive agendas) is built by undertaken actions like initial identification of national programmes and schemes in support of ETV (supply/demand sides), the ETV Technical Working Groups, launching the Polish ETV web site, translation of GVP into Polish, ETV Market study, preparation of the guide for ETV proposers developed under EU FP7 project AdvanceETV.

Further information

Resource Efficiency - Country profile Poland
http://www.eea.europa.eu/themes/economy/resource-efficiency/resource-efficiency-policies-country-profiles
Resource efficiency - information
http://www.mos.gov.pl/kategoria/4252_efektywne_wykorzystanie_zasobow/
GreenEvo
http://www.greenevo.gov.pl/index.php?lang=en
GEKON
http://www.ncbir.pl/programy-krajowe/gekon/art,1484,wspolne-przedsiewziecie-ncbr-i-nfosigw-gekon-generator-koncepcji-ekologicznych.html
ETV Pilot Programme
http://www.mos.gov.pl/g2/big/2012_10/7ee4e2be4196b7881c88e395c564a9da.pdf

Poland - White certificate scheme in Poland

Contact details to the Coordinator of the response
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White certificate scheme in Poland
The main instrument to fulfil Poland's targets on energy efficiency, declared on the *Polish Energy Policy until 2030,* is the energy efficiency law adopted by the Parliament on 15 April 2011. The Energy Efficiency Law introduces a scheme of white certificates which is expected to stimulate energy efficiency investments in the whole Polish economy by guaranteeing financial benefits for the entities achieving the highest energy savings.

National resource policy framework
Improving energy efficiency is one of the priorities of EU energy policy, whose goal is a 20 % reduction in energy consumption by 2020 as compared to the "business as usual" scenario. Poland has made significant progress in this respect. Although GDP energy intensity declined by 30% within the last 10 years, efficiency of the Polish economy calculated as GDP (at euro exchange rate) per energy unit remains twice as low as the European average. Economic development, resulting from the use of new technologies, has resulted in a considerable increase in electricity consumption accompanied by a relative decrease in the use of other energy forms. Therefore, energy efficiency is one of the priority in the *Polish energy policy until 2030,* document approved by Council of Ministers in November 2009. The main targets in energy efficiency field are: - to make efforts to achieve development of Polish economy without increase in primary energy demand - to decrease the energy intensity of Polish economy to the EU-15 level (in 2005).

Description of practical example
According to the Energy Efficiency Law, from 1 January 2013 onwards, companies selling electricity, heat or gas to the end users and end users purchasing energy at the Polish Power Exchange are obliged each year to submit energy efficiency certificate (white certificate) for redemption to the Polish Energy Regulatory Office (ERO). These certificates confirm the

completion of energy efficiency investments. If enterprises do not acquire appropriate number of certificates, which is declared by the regulation of the Minister of Economy, they will be obliged to pay a substitute fee. Enterprises will be able to purchase the white certificates at the Polish Power Exchange, according to the procedure currently binding for trade of green and red certificates. With respect to the latter, Poland have introduced a quota system to promote RES and highly efficient cogeneration under which green certificates are granted to those entities whose generated electricity from renewable sources and red certificates granted to those who generated electricity in a highly efficient cogeneration source. The certificates maybe sold to energy companies that have an obligation to present a certain number of certificates to the President of ERO or to trade them for profit on the Polish Power Exchange. If an enterprise does not utilize their white certificate, they can also be sold, generating additional revenue for the enterprise. ERO is responsible for organising a tender in which white certificates maybe obtained. The participation in the tender for a white certificate is allowed for projects that achieve energy consumption savings of at least 10 tonnes of oil equivalent (toe) on average per year, or for groups of projects of the same kind which yield a total energy savings of least 10 toe per year average. The condition for qualification of a project is performing an energy audit confirming the energy savings assumed.

Energy efficiency improvement measures in accordance with the Energy Efficiency Law are the following (investments which can obtain the white certificates):

1) Heat insulation of systems;
2) Buildings thermo-modernisation;
3) Modernization of:
    a) home use devices,
    b) lighting,
    c) own use equipment,
    d) facilities and systems of industrial processes,
    e) local heating networks and local heat sources;
4) Energy recovery in industrial processes;
5) Limitation of:
    a) reactive power flows,
    b) network losses,
    c) transformers losses.

Two of the executive regulations, one on the scope and types of audits, and one managing the amount of white certificates for redemption and the substitute fee, are in force. At the moment, the third executive regulation on tendering procedure waits publishing.

The administrative bodies of the white certificates scheme include the Ministry of Economy (responsible for monitoring and verifying the level of compliance with targeted savings), the Energy Regulatory Office (responsible for tenders and issuance and redemption of white certificates) and TGE SA (the Polish Power Exchange, place where certificates can be traded).

It is expected that energy savings from white certificate scheme will be at the level of

between 2 and 2.5 Mtoe by 2016.

Further information
http://www.mg.gov.pl/Bezpieczenstwo+gospodarcze/Energetyka/Efektywnosc+energetyczna

Portugal - ERSAR - Quality of service assessment

Portugal
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Quality of service assessment
The second generation of the evaluation system for assessing the quality of water and waste services provided to users follows the application of a first generation assessment system, with some improvements in order to give it greater functionality, technical accuracy and applicability to the entire universe of operators. While the first generation was based on 20 indicators for each of the services of drinking water supply, wastewater management and municipal waste management, the second generation is based on 16 quality indicators for each of the three services and adapted to a new, more extensive, universe of operators (nearly 400), regardless of their management model. The system aims to better protect the interests of users, to safeguard the economic viability of the operators and their legitimate interests and to protect the environmental aspects associated with these activities.

National resource policy framework
The Strategic Plan for Solid Waste (PERSU), approved in 1997, configured a reference tool for planning the municipal waste management in Portugal. Subsequently PERSU II, for the period 2007-2016, is based on five activity axes: (1) prevention, (2) awareness and mobilization of citizens, (3) qualification and optimization of waste management, (4) information systems as a pillar of municipal waste management and (5) qualification and optimization of public entities intervention in municipal waste management. It was determined that ERSAR, as the authority responsible for economic and quality of service regulation regarding municipal waste management, and APA (the Portuguese Environmental Agency), while national waste authority, coordinated among themselves the task of supervising and monitoring the implementation of PERSU II. This plan is divided in several axes for intervention, being some of the most important the promotion of the optimization and gains of efficiency in municipal waste management, while safeguarding the operators' sustainability. In this context, the role of the regulation authority is to create mechanisms to induce this increase in efficiency. The quality of service assessment is one of these mechanisms because it allows for the monitoring of quality of service provided to users as well as for a trend of overlooking service provision in the long term, due to the comprehensiveness of the indicators evaluated.

Description of practical example

Context

In order to regulate the quality of the service provided to users ERSAR developed and implemented the first-generation system for assessing the quality of service based on a set of 20 indicators, that enabled the assessment of the protection of the interests of users, of the economic and financial sustainability infrastructure and of the environmental sustainability. This regulatory model allows to publicly assess and compare the performance of different operators (benchmarking), thus promoting "virtual competition" between them for the best quality of service, also known as "sunshine regulation", recognized internationally as a regulation good practice. Thus, since 2004, all operators are evaluated according to one set of quantifiable indicators, and the results classified according to the quality level of service achieved in each indicator (good, average or poor quality) and compared in order to push them towards a continuous improvement of its service.

Both the first generation and the second generation (now in place) of indicators for quality of service assessment were developed within ERSAR by an interdisciplinary team, in partnership with the National Laboratory of Civil Engineering (LNEC). A "Technical Guide for Quality of Service Assessment of Water and Waste Services Provided to Users" was developed, which was subject to a public consultation period to stakeholders to collect input and suggestions. This discussion was extended to a group of seminars where the assessment system was presented and which had a large participation of operators. It was subsequently released the final version of the quality of service assessment system, that incorporated the relevant comments and suggestions for improvement.

With the quality of service assessment system ERSAR wants to:
- Protect the interests of users with regard to quality of service provided to them;
- Conditioning the behaviour of operators and municipalities regarding the quality of service they provide to users;
- Compare the results between similar operators (benchmarking);
- Encourage operators and municipalities towards efficiency and effectiveness;
- Consolidate a culture of concise, credible and easily understood by all information.

Methodology and players

The quality of service regulation, occurs in an annual cycle with an established calendar and includes the following steps:

1. Until the end of March operators submit the corresponding data bearing in mind the indicators that apply to them;

2. Until the end of June ERSAR proceeds with the validation of the operators' data by compiling and validating the data provided, clarifying questions, particularly concerning possible shortcomings of the data, and conducting onsite audits, by contracting reliable audit companies, if necessary;

3. After this phase, and until the end of July, ERSAR shall, for each of the operators, perform data processing and results interpretation through calculating indicators and examining their temporal evolution and respective interpretation, given the values and reference intervals, results of other operators and context factors;

4. Completed this phase, ERSAR promotes a period of contradictory, allowing validation by the operators of the calculated indicators and context factors used;

5. Then, ERSAR consolidates the respective indicators and, by the end of August, proceeds to data processing and interpretation for the set of operators through its: aggregation in groups for each indicator, charts and graphs with the individual values of each operator for each group of operators and comparative analysis of indicators for each operator with critical evaluation of its performance.

6. This cycle is materialized through the publication of the "Evaluation of quality of service to users (Volume 3)" included in the Annual Report of the Water and Waste Sector in Portugal which is publicly disclosed at the fourth quarter of the year.

In parallel, this system was implemented in a context of scarce resources, so it was imperative to adopt good practices in terms of information systems and in a way to streamline the entire exchange of information. "Portal ERSAR", which among other roles, is an online website for collection of information from the operators, allows the report of online information in a standardized and validated manner. This has enabled ERSAR to keep a reduced level of human resources, which otherwise would be necessary, and to meet demanding deadlines, by saving time in information reporting and validation.

Achieved results

The quality of service assessment system allows the collection and dissemination of comprehensive, reliable and audited information, on the water and waste services provided in Portugal. This system has been widely recognized as a regulatory tool of great importance and excellence, which allowed to attain the following results:
- Yearly analysis of the quality of service for each operator;
- Analysis by indicator through benchmarking between similar operators;
- Analysis of the historical evolution of quality of service for each operator;
- Analysis of the quality of service in the sector overall.

The project brought qualitative benefits for every stakeholder in terms of procedures and information available. At a national level it was observed a widespread improvement in the quality of services and the meeting of the objectives set out by policies for the sector, a contribution to safeguarding the environment through greater efficiency in the use of environmental resources and an increased availability of information for statistical and research purposes, but also to empower citizens with more information about the service they are paying for and create a more interventive and demanding society.

The following table illustrates the results during the first generation quality of service assessment system. The data included refers to a subset of waste management operators which was previously evaluated over a period of seven years and highlights some operational and environmental indicators. There is a clear improvement trend which can be confirmed when looking at average values for the indicators on recycling, organic recovery, waste to landfill, leachate tests performed, efficient use of energy resources and monitoring of underground water quality. Special attention must be taken when looking at the indicator on efficient use of energy resources where negative results show positive net balance between energy production and consumption (on average this is a positive contributor of energy for society). It is also important to bear in mind that this data refers to the average results of 17 waste management operators throughout Portugal. Each of these operators show considerable differences which reflect on the results and can be observed when looking at the Min. and Max. values on the table.

PI Code	*Designation*	*Unit*	*Value*	*2004*	*2006*	*2008*	*2010*
RU08a	Recycling	%	Min.	0,3	2,8	4,0	4,2
			Avrge.	4,4	6,4	7,7	8,5
			Max.	7,0	8,8	10,4	17,9
RU09a	Organic recovery	%	Min.	0,0	0,0	0,0	0,0
			Avrge.	3,0	2,0	5,0	9,0
			Max.	49,0	34,0	17,0	47,0
RU11a	Waste to landfill	%	Min.	29,0	26,0	28,0	33,0
			Avrge.	74,5	88,1	75,0	74,0
			Max.	98,0	100,0	95,0	95,0

RU16a	Leachate tests performed	%	Min.	39,0	73,0	86,0	79,0
			Avrge.	89,8	95,6	98,0	98,0
			Max.	100,0	100,0	100,0	100,0
RU18a	Efficient use of energy resources	kWh/t	Min.	-303,2	-372,4	-347,7	-301,2
			Avrge.	-66,5	-87,9	-84,0	-84,4
			Max.	13,3	14,9	11,4	13,9
RU19a	Monitoring of underground water quality	%	Min.	64,0	65,0	62,0	63,0
			Avrge.	84,0	89,6	90,0	90,0
			Max.	100,0	99,0	100,0	99,0

Transferable aspects

There are some aspects transferable to other organizations:
- The use of benchmarking as a tool to promote virtual competition;
- Promoting transparency and acceptance by involving all the stakeholders at an early stage of decision making;
- Promotion of a culture-oriented management practices more efficient and sustainable;
- Implementation of a close relationship with the different target audiences;
- Improved efficiency in the processing of information exchange;
- Increase the productivity of technicians involved;
- Availability to end users of reliable and transparent information in a user friendly language.

Further information

Filomena Lobo

http://www.ersar.pt/website_en/

Annual report on water and waste services in Portugal

http://www.maotdr.gov.pt/Admin/Files/Documents/PERSU.pdf

Serbia – Institutional setup

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Institutional setup for implementation of resource efficiency policy
The resource efficiency processes is managed by the relevant ministries, mainly by Ministry of Energy, Development and Environmental Protection, Ministry of Natural Resources, Mining and Spatial Planning, Ministry of Agriculture, Forestry and Water Management. The Cleaner Production Centre, the Network of Energy Managers Serbia, the Environmental Management Center, and the Standing Conference of Towns and Municipalities, were set up to support the development and implementation of policies.

National resource policy framework
In the Republic of Serbia, resource efficiency considerations are included in a number of key policies, including several documents adopted by the Government e.g.: National Strategy for Sustainable Use of Natural Resources and Goods (2012), Energy Development Strategy of the Republic of Serbia until 2015 (2007), National Programme for Environmental Protection (2010), National Sustainable Development Strategy (2008), First Action Plan for Energy Efficiency until 2012 (2010), Action Plan for biomass (2010), National Waste Management Strategy (2010), Cleaner Production Strategy (2009), Biodiversity strategy (2011), National Environmental Approximation Strategy for the Republic of Serbia (2011), National CDM Strategy (2010), Mineral Resources Management Strategy until 2030 (2012). The **National Strategy for Sustainable Use of Natural Resources and Goods** is one of the basic strategic documents which presents the overall frame for sustainable use and protection of natural resources and goods. The focus of the Strategy includes the increasing efficient use of resources (therefore decrease of the intensity of their utilization) and the reduction of environmental impact of the economic use of resources. In short, it is focused on discovering options for a practical policy to detach the trend of economic development, and even wider development in general, from the trend of resources use and environmental impact. The **Strategy for Mineral Resources Management** aims at studying existing and finding new forms of management of the mineral resources sector. It is based on the principles of

sustainable development and relies on three pillars: economic, environmental, social. Included are: reliable exploitation, land usage planning for the future availability, promotion of recycling and energy efficiency, land conservation through recultivation, research and development of environmentally friendly mining methods, and so on.

The **Waste Management Strategy** sets out to integrate waste management and involves consideration of waste from its origin, minimization, through the collection, transport, treatment to disposal. It includes: waste reduction at source, reuse, recycling, and different methods of waste treatment.

Respecting the **Treaty on establishing the Energy Community**, Serbia has agreed to harmonize with the legislation and standards of the EU. The Energy Law defines energy policy. The policy is focused on the use of renewable energy, implementation of energy efficiency and the rational use of energy, establishment of the Clean Development Mechanism, increasing the security of energy supply and energy sources, and others. In order to improve energy efficiency the First Action Plan for Energy Efficiency and the Biomass Action Plan, among others, have been adopted.

Description of practical example

Main drivers for the development of resource efficiency policies in Serbia include: reducing harmful environmental impacts and climate change; responding to issues related to availability, scarcity and depletion of natural resources and; complying with relevant EU and Serbian policies and legislation. Improving resource efficiency is a continuous process that requires an organized, systematic and systemic approach to relevant state institutions and social organizations, local governments, businesses and individuals. To support these measures a broad institutional setup at different levels, from the local to the national is in the process of development. At the national level several ministries established governmental bodies and agencies that deal with, among other, the implementation of resource efficiency policies and measures.

Ministry of Energy, Development and Environment Protection (MEDEP) – The department for improving energy efficiency provides conditions for the rational use of energy and increase of energy efficiency, monitors the effects of the measures and projects for the rational use of energy and increased efficiency in production, distribution and use of energy, performs international cooperation in the field of encouraging rational energy use and increase of energy efficiency. Also, the Department cooperates with the public, business, education and civil sector with the goal of supporting and promoting, through programs and projects, the improvement of energy efficiency and the wider use of renewable energy sources. In October 2012, the Serbian Energy Efficiency Agency has been abolished by changes in the Energy Law. Its obligations were taken over by the Ministry of Energy, Department for improving energy efficiency. Given that since 2007 the Agency has been the official partner of the European campaign to raise awareness and change the landscape of energy entitled “Sustainable energy in Europe”, MEDEP is the partner now.

There are also six ***Regional Energy Efficiency Centres*** (Belgrade, Novi Sad, Nis, Kragujevac, Novi Pazar and Kraljevo), and ***Network of Energy Managers Serbia*** (NEMS). The Regional Energy Efficiency Centres became self-sustainable, they have provided many trainings, realized many investments, research projects and promotional activities, in particularly in the regions where they are located, as well as Serbian Energy Efficiency Network in Industry, located at the Mechanical Faculty in Belgrade. The task of the Energy Managers of cities and municipalities, industries and public utility companies are to increase energy efficiency in the production, transmission, distribution and energy resource efficiency.

UNIDO, in close cooperation with the main national stakeholders, developed project for the establishment and operation of a **Cleaner Production Centre of Serbia** (CPC) in 2007. The aim of the CPC is to provide services to the private and public sector, to co-ordinate the different national Cleaner Production efforts. It will have a network of more than 100 highly experienced and skilled experts, introducing Cleaner Production methodology in Serbian companies. Improvements of organization and technology will help to reduce or suggest better choices in use of materials and energy, and to avoid waste, wastewater, and gaseous emissions. The CPC offers consultations to companies in assessing the situation, making environmental policy, improving operations in terms of raw material usage, resource efficiency, energy efficiency, waste management and other aspects of business.

The project for setting up an **Environmental Management Center** (EMC) within the Serbian Environmental Protection Agency, supported by the Royal Norwegian Ministry of Foreign Affairs, contribute to sustainable development in all its forms by equipping institutions in Serbia with technology and expertise to monitor and manage environmental aspects of their activities, including increased capacity for improved resource efficiency and emission reduction. This project (2010-2014) is compatible with the Sixth Community Environment Action Programme [1600/2002/EC], stipulating the enlargement process should sustain and protect the environmental assets of the Candidate Countries and should maintain and strengthen sustainable production and consumption and sustainable land use.

Standing Conference of Towns and Municipalities (SCTM) is a national association of local authorities within the cities, and municipalities adopt their policies. Those policies contributing to more efficient use of all available resources (natural, social, financial) at local level. The Committee on the Environment, the Committee on the Energy Efficiency and the Committee on the Communal Activities created and implement policies about water management, land use, and energy at the local level. SCTM is a place of exchange of best practices in these areas among local governments.

Further information

- Ministry of Energy, Development and Environment Protection,
- Network of Energy Managers Serbia (contact jak@cedeforum.org),
- Cleaner Production Centre of Serbia http://www.cpc-serbia.org/eng/

- Environmental Management Center http://www.emc-project.gov.rs/
- Standing Conference of Towns and Municipalities http://www.skgo.org/
- National Strategy for Sustainable Use of Natural Resources and Goods (Serbian only) http://www.srbija.gov.rs/vesti/dokumenti_sekcija.php?id=45678

Slovakia - Protection and effective use of raw materials

Contact details to the Coordinator of the response
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Protection and effective use of raw materials
The Slovak Republic as a member of EU gives a lot of attention to the issues of resource efficiency. The conference Sustainable Use of Natural Energy resources on National and Regional Level, which will be held on October 2012 in Banská Bystrica, is a good example. According to Article 4 of the Constitution the mineral wealth is owned by state. Raw Material Policy of the Slovak Republic in the field of mineral resources has been approved by the Government Resolution in 1995. Raw materials represent the primary input to the production process.

National resource policy framework
According to a resolution adopted by European Parliament on May 24, 2012 the EU must make better use of resources for the sake of its future economic growth and the environment. The main drivers for the implementation of resource efficiency policy in Slovakia are ensuring security of resource supply, the concept of sustainable development and the activities within EU. Slovakia does not currently have a dedicated strategy or action plan on improving resource efficiency, but resource efficiency is address in a number of key policies. Additional drivers are the international targets concerning the use of renewable resources, reducing CO_2 emissions, energy security, access to resources and other tasks.

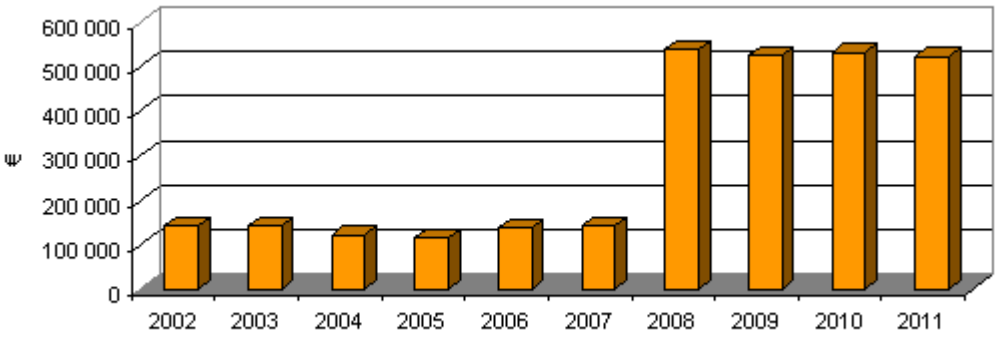
Description of practical example
Mineral resources are non-renewable and therefore must be protected and effective used. The fulfilment of this objective follows the raw material policy. Slovak Republic depends on

the import of certain types of fuel-energy and raw materials.

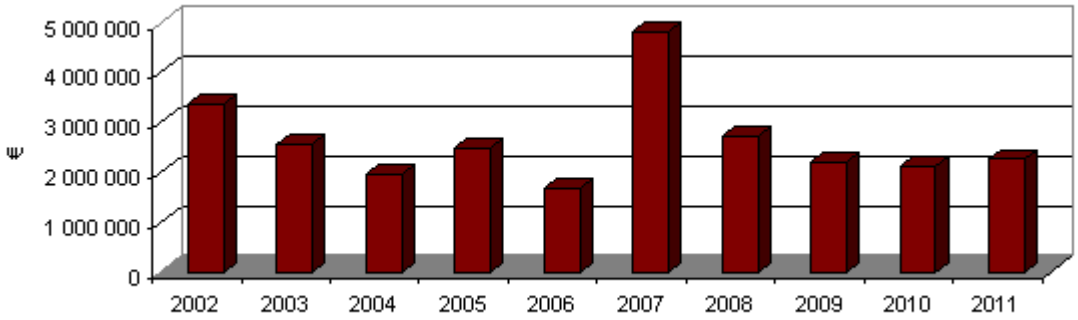
Economic instruments provide the fulfilment of the main objectives of resource policy and a purposefully used by the State, municipalities and mining entities. **The economic instruments include** in particular:

- prices of raw materials, which in the conditions of market economy are determined by supply and demand in a liberalized market,

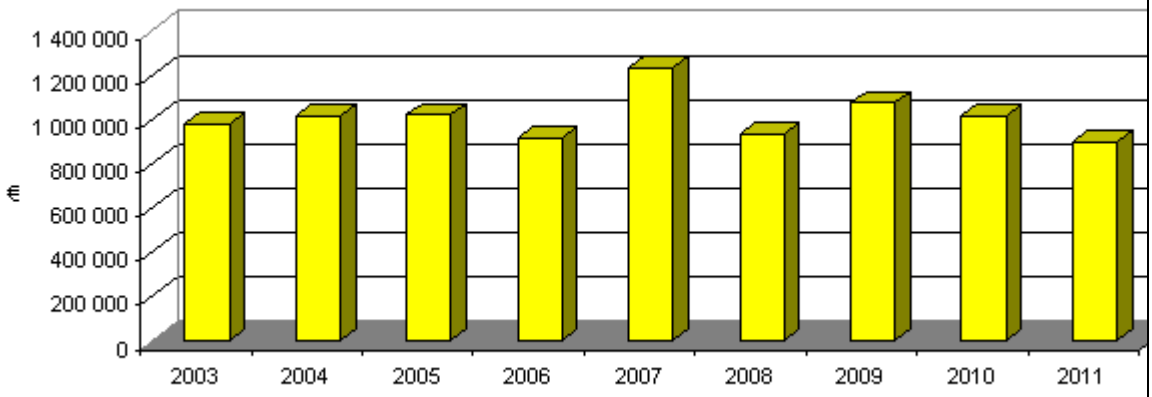
- payments for the mining areas, payments for extracted minerals and payments for storage of gases and liquids,
  - Payments for the mining areas (€)



  - Payments for extracted minerals (€)



  - Payments for storage of gases and liquids (€)



Source: MMO, Processed by SEA

http://www1.enviroportal.sk/indikatory/kategoria.php?kategoria=263 - only in Slovak language

- payments for the removal of surface deposits of agricultural or forest land,

- promoting the use of structural funds and the state budget as a measure of the Sectoral Operational Programme Industry and Services (use of mineral raw materials, increased use of alternative energy sources).

The Government of the Slovak Republic has prepared the analysis of the functioning of state support for mining. The Slovak Republic is preparing an amendment to the Waste Act, which will promote the increased use of secondary raw materials.

The Ministry of Economy has prepared an innovative policy for the years 2011 - 2013. The main objective of innovation policy is to increase the competitiveness of Slovak industrial companies.

The Manifesto of the Government of the Slovak Republic for the period 2012 - 2016 includes a section relating to the environment. The government considers it in the national interest of the Slovak Republic to achieve and maintain a high quality environment protection and rational use of natural resources while maintaining the principles of sustainable development. Special attention will be paid by the government to rational use of domestic raw materials and supporting businesses that used, in the extraction and processing of minerals, best available technology with minimal impact on the environment.

On 30 April 2012, the Slovak Republic submitted its Stability Programme to the Council of European Union covering the period 2012-2015 and its 2012 National Reform Programme. The Council accepted recommendation on 10 July 2012 on the above Programmes. One of the recommendations of the Council was the question of taxes. Given the diminishing scope for further expenditure-based consolidation and the need to support continuing convergence through expenditure in key areas such as education, innovation and transport infrastructure, there is scope for measures aimed at broadening the tax base, limiting tax avoidance and improving tax compliance, without affecting near-term growth prospects. Tackling one of the largest VAT gaps in the EU could bring significant additional revenue. There is also room for increasing receipts from taxes that are least harmful to growth, including real estate taxation, and environmental taxation.

Further information

Raw Material Policy of the Slovak Republic in the field of mineral resources

http://www.economy.gov.sk

Conference - Sustainable Use of Natural Energy resources on National and Regional Level

http://www.enef.eu/2012/

Innovation policy for the years 2011 - 2013 in the Ministry of Economy

http://www.economy.gov.sk/inovacna-politika-sr-na-roky-2011-az-2013/127598s

The Manifesto of the Government for the years 2012-2016

http://www.vlada.gov.sk/programove-vyhlasenie-vlady-sr-na-roky-2012-2016/

Council Recommendation of 10 July 2012 on the National Reform Programme 2012 of Slovakia and delivering a Council opinion on Stability Programme of Slovakia, 2012-2015

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:219:0074:0076:EN:PDF

Resources of the Slovak Republic as a factor of development strategies in European and global space, National Centre for European and Global studies of the Slovak Republic, University of Economics in Bratislava, Koloman Ivanička et al., 2011, ISBN 978-80-225-3204-

Spain - Conference on waste prevention and resource efficiency

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Conference on Waste Prevention
The "Waste Prevention and Resource Efficiency" conference, held in the Ministry of Agriculture, Food and Environment, 2nd October 2012[6], aims at learning about previous experiences implemented in the framework of the European Waste Prevention and Reduction Week (Life+ project), as well as to present other waste prevention and reduction initiatives of specific waste sectors, mainly agriculture and food industry, and health care and hospital waste, as a means, among others, to improve resource efficiency.

National resource policy framework
The Conference is a part of the roadmap to implement waste prevention initiatives to prepare and/or update planning waste prevention instruments before end 2013, according to the mandate of the Spanish Waste Law and European Framework Directive. Conclusions of the Conference will be published on the Ministry of Agriculture, Food and Environment website and be publicly available. Further electronic exchanges of experiences with other countries interested in those subjects could be undertaken.

Description of practical example
The starting point has been the collection of the main previous waste prevention experiences developed in several regional governments and municipalities in Spain, both in the framework of the European Waste Prevention and Reduction Week, and other waste prevention initiatives (NGOs, other stakeholders, markets, etc). The Conference of is expected to be useful to Spanish Public Administrations that have competences on waste management and prevention, enterprises and customers, as well as

6 http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/formacion/Jornada-sobre-prevencion-residuos-octubre-2012.aspx

other stakeholders. Resource efficiency in public and private consumption and production is involved. The conclusions of the Conference will also be useful in the implementation or update some national initiatives related to resource policies.

The Ministry of Agriculture, Food and Environment has been responsible for the design and implementation of the event. Further events could be organised, if deemed convenient, to transfer these experiences and broaden the scope of public action in the framework of waste prevention as a mean to improve resource efficiency.

An internal *ex-post* assessment of the results and conclusions of the Conference will be undertaken by the Ministry of Agriculture, Food and Environment.

Further information
Ministry of Agriculture, Food and Environment website, www.magrama.es National Conference on Waste Prevention, 2nd October 2012 http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/formacion/Jornada-sobre-prevencion-residuos-octubre-2012.aspx

Sweden - The Recycling Ground Alelyckan

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Recycling Ground "Alelyckan"
The recycling ground in Gothenburg reduces the amount of otherwise disposed waste by employing an extended recycling and reuse program. With a 70 % recovery rate at the site, little less than 6 % of the total received waste were recovered.

Description of practical example
The general public delivered 500 tonnes of heavier waste goods at the recycling ground in 2012, of which 360 tonnes - or approximately 70% - were recycled rather than disposed of. By running this program, this single station (there are five others) saves the Gothenburg region 5 % of the waste that would otherwise be disposed. The programme, running since 2007, is operated by the local city authorities together with a group of NGOs and second-hand goods retailers and reuse companies. Used goods that appear in the delivered waste are recovered and offered for sale. Thus the recycling ground resembles a small outlet retail sales area. Of the total amount of waste coming in to this particular waste disposal ground, 8 % are recyclable and reusable goods. Textiles and wooden building materials each represent about one fifth of the recoverable fraction of the delivered waste by weight. Other building materials, electrical appliances and metals each represent about 10 % of the recoverable fraction of the waste. Books and furniture are present in smaller fractions. Recovered and sold for reuse goods are of comparable quantity as the amount coming in. Out of the total load of recyclable waste coming in to the recycle ground, 70 % (in weight) went to reuse. 10 % goes to waste incineration and 1 % to landfill disposal. It was estimated that without the special activities at the ground only some 11 % would have been gone to reuse, with an estimated 60 % that would have gone to either into incineration or landfill. With a 70 % recovery rate a little under 6 % of the total received waste was recovered. This has been calculated to save approximately same amount of ghg emissions as are produced by 360 Swedish citizens. Potentially, a general adaptation of the recycle ground concept to additional waste disposal stations may contribute to a fairly large saving of energy and greenhouse emissions. There are 600 waste disposal stations in Sweden and just a few run reuse programs and even fewer run programmes that are as elaborate as that used at Alelyckan.

Further information
Waste Recovery at Recycle Grounds, IVL report B1958, Feb 2011.

Sweden – A series of examples

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Christoffer Nelson, Swedish Environmental Protection Agency, christoffer.nelson@swedishepa.se

National resource policy framework (max 300 words)
There are general consideration of resources in the Swedish Environmental Code[7], for example: "The Environmental Code shall be applied in such a way as to ensure that; the use of land, water and the physical environment in general is such as to secure a long term good management in ecological, social, cultural and economic terms; and Reuse and recycling, as well as other management of materials, raw materials and energy are encouraged with a view to establishing and maintaining natural cycles". Sweden has 16 Swedish Environmental Quality Objectives (EQO). The environmental quality objectives describe what quality and state of the environment are sustainable in the long term. Several of the environmental objectives are interlinked to Sustainable Material Management. There are interim targets for waste (generation) and resource management (e.g. extractions of natural gravel), as well as objectives for sustainable forestry and good-quality groundwater. One resource aspect of the environmental objective "A varied agricultural landscape" is the availability of arable land to promote continuous ecosystem services. This is, for example in the interim target, "The farmed landscape will be managed in such a way as to minimize adverse environmental impacts and promote biodiversity". Natural gravel, phosphorus and waste are high-lighted in the EQOs. The existing goals on energy efficiency and the work to make that happen have influence on use of resources and material. Since the previous survey, the EQO-system has been changed, following a Parliamentary

[7] http://www.regeringen.se/content/1/c4/13/48/385ef12a

decision in June 2010. The 16 environmental quality objectives are kept, but a "generation goal" has been introduced. This defines the direction of the changes that need to occur, within one generation, if the EQOs are to be met. Four out of the seven most important changes appointed are strongly connected to Sustainable Material Management namely; "the eco-cycles are resource effective and as far as possible free from hazardous substances", "a good management of resources", "consumption patterns (products and services) give rise to as little environmental and health problems as possible".

Before the revision of the EQO-system a national strategy on resource efficiency and non-toxic substances and a strategy for management of land, water and the built environment were being developed in a cooperative action between several national agencies (2004-2010). Activities proposed, are now integrated in the regular responsibility of the agencies.

Description of practical example

With several different policy measures, programmes and initiatives, the Swedish Government and business sectors intend to reduce waste in general, to increase recycling and to increase sustainable material management. Some of these are described below.

A new **national waste plan** has been finalised. Waste prevention, especially on the flows of textiles, electronics, food and the resource intensive construction and demolition industry, is one of the key issues[8].

A **national program for waste prevention** is under preparation (to be finalised in 2013). Key topics are e.g. to decrease food waste and increase recycling of textiles. A national cooperation group for decrease of food waste has also been created. It has representatives from national authorities, retailers, wholesalers, food industry, consumers and waste managers (through Swedish Waste Management[9]). A series of activities has been carried our related to food (waste) & environmental

[8] http://www.naturvardsverket.se/Start/Produkter-och-avfall/Avfall/Ny-nationell-avfallsplan/ - in Swedish

[9] http://www.avfallsverige.se/topmenu/in-english/

impact e.g. research conference, seminars. The Swedish EPA has also established a "cooperation group" to reduce food waste with representatives for all involved actors (SaMMa).

Sweden has introduced producer responsibilities for several types of products: Batteries (2008:834); Packaging (2006:1273); Paper/newsprint (194:1236); Tyres, cars/ELV (2007:185), WEEE (2005:209), Light bulbs and certain light fittings (2008:208). The producer responsibility for packaging and WEEE includes requirements on design (for disassembly/reuse/recycling), use of material and detoxification.

The Swedish Government is (under 2012) developing a national strategy for a long-term and sustainable usage of Swedish Mineral resources.

Some examples of other initiatives are:

1) This autumn sees the start of Mistra's Closing the Loop programme[10], which will develop methods for using waste from industrial processes. The aims are to save natural resources, generate financial added value and boost efficiency in industry. Seven projects have been awarded funds.
2) The Swedish Steel Producers' Association has launched The Steele Eco-Cycle, a research programme called, aimed at more economical and energy-efficient production of steel, better use of steel in structures and greater ease in utilisation of steel scrap and residual products[11].
3) Stena Innovative recycling - project to improve efficiency in recovery/recycling of used

[10] http://www.mistra.org/en/mistra/news/newsarchive/sevenprojectsareturningwasteintogoldinmistrasclosingtheloop.5.111f9e581385b1384f922.html

[11] www.jernkontoret.se/english/research/the_steel_eco_cycle/index.php

[12] http://www.sp.se/sv/press/news/Sidor/20110217.aspx

[13] www.lrf.se/PageFiles/15797/LRF_folder_A4_farmers_090907.pdf

[14] www.forestindustries.se/web/Climate.aspx

[15] Waste Recovery at the Recycling Ground. Analysis of the Environment Effects, Report (in Swedish) U2011:02, Avfall Sverige AB, Malmö 2011. Available at: avfallsverige.se. For English Summary see Waste Recovery at Recycle Grounds, IVL report B1958, Feb 2011.)

cable (plastics and copper).

4) Kuusakoski Sweden AB – "From landfill to fuel", better pre-treatment of rest from fragmentation can create fractions suitable for incinerate (from waste that used to go to landfill). R&D project in cooperation with relevant actors.
5) SP Technical Research Institute of Sweden has several SMM-related activities e.g. a handbook[12] to guide for small business (ca 50 employees) to profitable environmental work; training program for energy saving (sponsored by the Energy Agency)
6) Federation of Swedish farmers (FSF) – Climate events, project to (via information/ good examples) inspire farmers to change behaviour to reduce GHG-emissions and costs[13].
7) Forest industries – uses a systems approach, and has a long tradition of using resources based quality: large trees are used to produce timber while branches, tops and other by-products are used to produce pulp and/or energy. Used paper products are to a high extent recycled. R&D projects e.g. to produce DME/fuel from spent liquor. See sustainability report[14] (p. 14, 27).
8) The Recycling Ground "Alelyckan" recycled 70 percent The recycling ground in Gothenburg reduces the amount of otherwise disposed waste by employing an extended recycling and reuse program. 500 tons of heavier waste goods were off-loaded at the recycling ground from the general public in 2010. 360 tons of that were recycled instead of been disposed. This represent 70 per cent of the heavy waste delivered to that particular waste handling unit. By running this program, this single station out of a total of six, the Gothenburg region saves 5 per cent of the waste that would otherwise be disposed. The program, running since 2007, is operated by the local city authorities together with a group of NGO:s and second-hand goods retailers and reuse companies. Used goods that are assembled and disposed in the waste are recovered and offered for sale. Thus the recycling ground resembles a small outlet retail sales area[15].

Further information
See also: www.naturvardsverket.se/en/In-English/Start/Environmental-objectives/Best-practice-examples/

Switzerland – Project R'EFF

Name of the Country, contact details to the Coordinator of the response
Federal Office for the Environment FOEN, Switzerland Contact: simonne.rufener@bafu.admin.ch

Title and short description of show case (max 100 words)
With the FOEN project called **R'EFF**, resource efficiency including efficient use of raw materials, Switzerland started a project to assess the potential of the reduction of the total environmental impacts due to Swiss consumption and production. The current situation of the environmental impacts were analysed using the ecological scarcity method based on consumer perspective, production perspective, material and goods perspective and others. Overall 14 fields of activities are highlighted (table 1) wherein measures and instruments of raised resource efficiency are being drafted within the framework of different existing national strategies (figure 1).

Fields	Most important fields of activities
Consumption	Nutrition
	Housing (rent, electricity, water and waste disposal)
	Mobility (private mobility)
Production	Construction industry (G45, building sector)
	Agriculture and forestry (G01b05, primary sector)
	Other Industries (G25, G29, G32-36)
	Chemical industry (G24, chemical industry)
	Waste disposal / recycling (G37, recycling + G90, disposal)
	Public demand (G75, administration)
Materials and goods	Raw material (metals)
	Electricitys production
Others	Land und nature use (land use and heavy metal in soil)
	Overall instuments
	Accompanying measures

Table 1 Overview of main fields of activities

National resource policy framework (max 300 words)

Measures and instruments worked out within the R'EFF project are embedded in the already existing national resource policy framework such as water, soil, biodiversity, biomass, agriculture, energy and climate strategy.

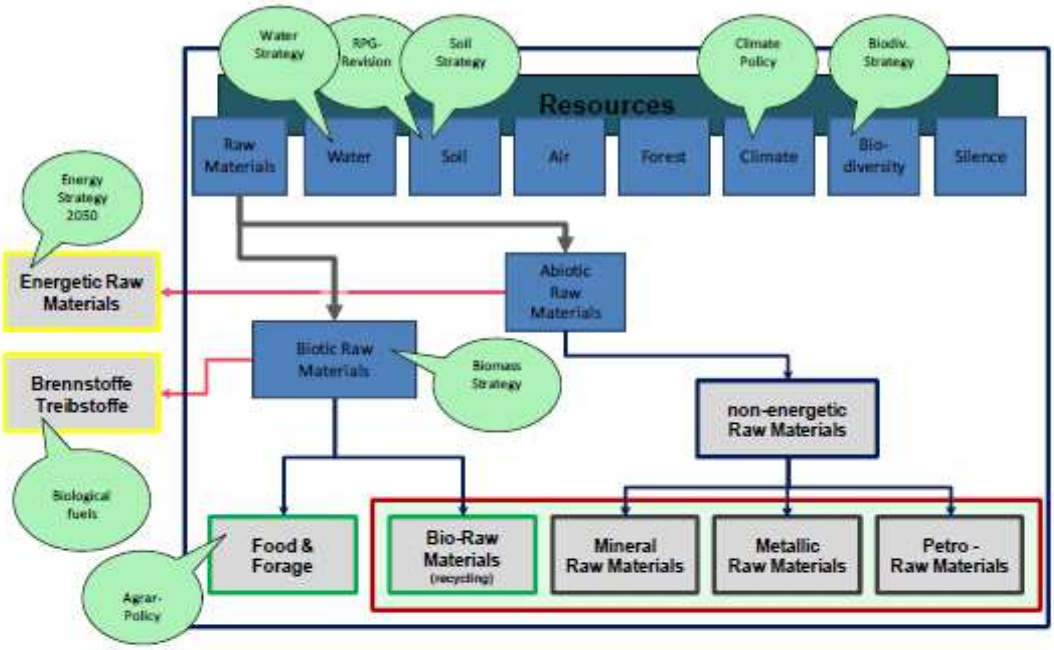

Figure 1 Definition of Resources including existing national strategies and policies (ProgRess, MBU, 2011, modified by FOEN)

Description of practical example

Air, soil and climate are the resources that are mainly affected through the total Swiss consumption and production (figure 2). Nevertheless, one has to keep in mind that resources such as forest, biodiversity and silence are not represented and that approximately 60% of the environmental impacts are caused abroad (table 2).

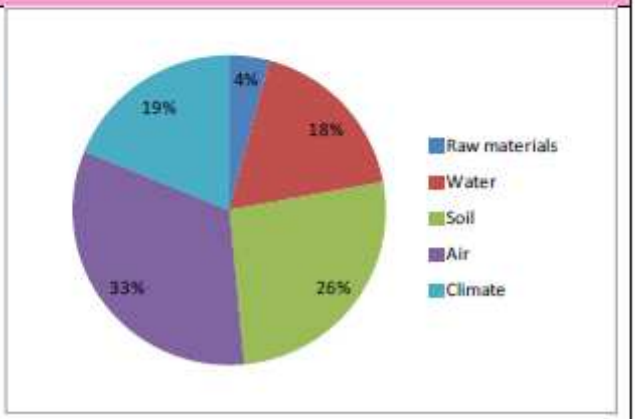

Figure 2 Total environmental impact by resources (not including forest, biodiversity and silence)

Ressource	% on the total environmental impact	Distribution of environmental impact in Switzerland / abroad
Raw materials	4%	almost only damage abroad
Water	18%	almost only damage abroad
Soil	26%	a mainly larger percentage abroad
Air	33%	a considerably larger percentage abroad
Climate	19%	a mainly larger percentage abroad

Table 2 Distribution of total environmental impact of Swiss consumption and production in Switzerland and abroad

The current situation of the environmental impacts were analysed based on consumer perspective, production perspective, material and goods perspective and others.

Regarding the consumer perspective the main drivers of environmental impacts are nutrition, followed by housing and mobility (figure 2).

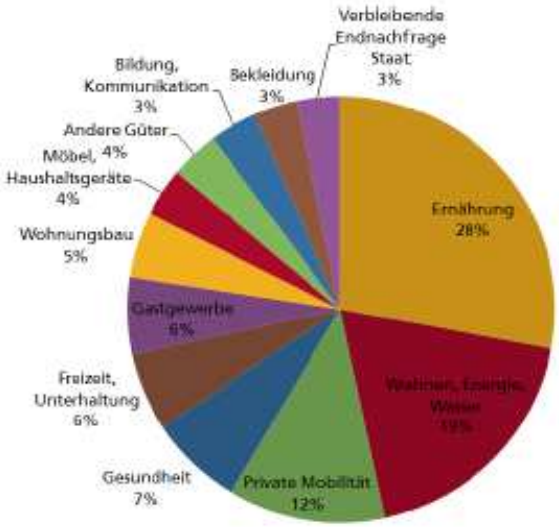

Figure 3: Percentage of total environmental impact due to Swiss consumption (Jungbluth et al. 2012a)

Similar calculations were made based on production, material and goods perspective to extract the 14 fields of activities (table 1).
For each of the main activities, the current total environmental impact of the corresponding resource was elaborated (table 3). Based on this, concrete measures and legal instruments for raising the resource efficiency in Switzerland are being drafted now.

Fields of activities	Current situation		Env. impact of the individual resources							
	% (measured on the overall impair-ment)	Million UBP per person (not summable)	Resources	Water	Soil	Air	Forest	Climat	Biodiversity	Silence
Nutrition	28%	5.6								
Housing (rent, electricity, water and waste disposal)	18%	3.7								
Mobility (private mobility)	12%	2.4								
Construction industry (G45, building sector)	13%	2.5								
Agriculture and forestry (G01b05, primary sector)	20%	4								
Other industries (G25, G29, G32-36)	18%	3.9								
Chemical industry (G24, chemical industry)	18%	3.6								
Waste disposal / recycling (G37, recycling + G90, disposal)	5%	1.0								
Public demand (G75, administration)	10%	2								
Raw material (metals)	18%	3.6								
Electricity production	30%	3.1								
Land and nature use (land use and heavy metal in soil)	9%	1.9								
Overall instruments										
Accompanying measures										

key

0-20%	21-40%	41-60%
low	medium	high

Table 3 Current situation and environmental impact on resources per field of activity

Further information

Environmental Impacts of Swiss Consumption and Production, A combination of inputoutput
analysis with life cycle assessment, Federal Office for the Environment FOEN, 2011
http://www.bafu.admin.ch/publikationen/publikation/01611/index.html?lang=en

Strategy on biodiversity
http://www.bafu.admin.ch/publikationen/publikation/01660/index.html?lang=de

Climate policy
http://www.bafu.admin.ch/klima/00493/index.html?lang=en

Energy Strategy 2050
http://www.bfe.admin.ch/themen/00526/00527/index.html?dossier_id=05243&lang=de

Biomass-Energy Strategy
http://www.bfe.admin.ch/themen/00490/00496/index.html?lang=de&dossier_id=00726

Turkey – TO BE FINALIZED