

European Environment Agency



## 2011 Survey of resource efficiency policies in EEA member and cooperating countries

#### **COUNTRY PROFILE:**

# Slovenia

Country information on resource efficiency policies, instruments, objectives, targets and indicators, institutional setup and information needs

May 2011





This country profile is based on the information provided by Barbara Bernard Vukadin, Urška Kušar and Vesna Polanec, from the Environment Agency of the Republic of Slovenia, International Co-operation Service. The information is current as of March 2011.

This country profile was prepared as part of the EEA-ETC/SCP 2011 survey of resource efficiency policies, which aims to collect, analyze and disseminate information about national experience in the development and implementation of resource efficiency policies in EEA member and collaborating countries. The work resulted in the following outcomes:

- Short 'country profiles' (this document) self assessments prepared by countries, describing the current status of resource efficiency policies, including key strategies and action plans, policy objectives, instruments, targets and indicators used, institutional setup and information needs.
- **Summary report** prepared by the EEA and ETC/SCP, the report reflects on trends, similarities and differences in policy responses, showcases selected policy initiatives from member countries and identifies information needs and knowledge gaps.
- A session on resource efficiency policies during the 2011 EIONET workshop to discuss further needs and to facilitate information sharing and experience exchange among EIONET members.

More information about resource efficiency policies, including an analytical report "Resource efficiency in Europe" and thirty one country profiles, can be found at:

http://www.eea.europa.eu/resource-efficiency





#### 1. Resource use in Slovenia – facts and figures

#### 1.1 General Facts and figures about the country

	Population (projected inhabitants for 2010) [1] Percent of total EEA-32	2,046,976 0.35%
	Surface area (km <sup>2</sup> ) [2]	20,273
	Percent of total EEA-32	0.36%
	GDP at market prices – Purchasing Power Standard – Current Prices (Million Euro, 2009) [3]	42,363
See.	Percent of total EEA-32 (minus Liechtenstein)	0.33%
	GDP per capita in Purchasing Power Standards (PPS) [4] EU27=100 (2009)	88
	Urban population (rate of pop., 2009) [5]	48.3%
	Main economic sectors and their share in total GDP (2009 est.) [2]	
	Agriculture	2.4%
Source:	Industry	31%
https://www.cia.gov/library/publi cations/the-world- factbook/index.html	Services (2010 est.)	66.6%
	EU accession date [6]	1.5.2004

Additional relevant background information on Slovenia (and on 37 other EEA member and cooperating countries) can be found at the SOER2010 website: <u>http://www.eea.europa.eu/soer/countries/si</u>

Factsheet on national waste policies for Slovenia is available at: <u>http://scp.eionet.europa.eu/facts/factsheets\_waste/2009\_edition/factsheet?country=SI</u>





#### 1.2 Facts and figures on resource efficiency for Slovenia

#### Use of resources per capita 2000 and 2007 [tonnes DMC/capita]



Source: Eurostat, OECD and Total Economy Database [7]

\* = For these countries data is for 2000 and 2005.

### Domestic Material Consumption by category over time, Slovenia

Breakdown of DMC by type of materials (2007)







#### Material productivity 2000 and 2007 [USD ppp/ton DMC]



Source: The Conference Board, Total Economy Database, Eurostat [9] \* = For these countries data is for 2000 and 2005.



#### Primary energy consumption

Source: Eurostat [10]





#### Trends in labour, materials and energy productivity, 1992-2008

Source: Total Economy Database, IFF Database. WI Database, Eurostat, OECD, IEA Database [11]





### 2. Evolution and main drivers for the development of resource efficiency policies

#### FORESTRY:

Slovenian forestry is considered an activity with a long tradition and success in the use and preservation of forests in Slovenia as a quality renewable energy resource. An opinion growing more and more prevalent is that this resource is underexploited as the felled wood brings too little value added because of the too low processing at the national level.

#### **ENERGY:**

As coal is the only fossil energy resource available in Slovenia, the reserves and utilisation of coal must be managed as rationally as possible because it significantly reduces the risks in energy supply as a national resource. Important coal deposits in Slovenia include Velenje (lignite) and Zasavje (brown coal) as well as Prekmurje, where potential reserves of brown coal have been established.

The use of fossil fuels burdens the environment as it causes the emissions of greenhouse gasses and air pollutants, so fossil fuels would have to be gradually replaced by more environmentally friendly fuels. Although the replacement of coal with other, more environmentally friendly fossil fuels (presumably with natural gas) has been foreseen, these fuels would cause dependence on imports and thus inevitably undermine the self-sufficiency of Slovenia, so the domestic coal production would need to be preserved and a compromise between the implementation of the Kyoto Protocol commitments and the achievement of economic trading conditions would need to be found. Thus Slovenia must make a priority of the development of renewable energy sources, as it has very good conditions for their exploitation.

The priority fields of heat production from RES are especially the energy of wood biomass and solar energy. The present useful efficiency of wood biomass is still low, so we must promote the replacement of fossil fuels as well as the replacement of the existing systems for biomass-fired heating with more efficient ones. The priority fields in electricity generation are the fields with the highest economic potential: water resources and energy of wood biomass and biogas. As regards the concrete placement of RES in the space, we must bear in mind that the environmental impact remains – the construction of hydroelectric power plants requires a major spatial intervention and the areas with favourable conditions for construction in Slovenia are already exploited or unsuitable from the aspect of ecosystem protection (Natura 2000).

The problem of the use of wood biomass is in its quality – most wood biomass-fired boilers in Slovenia are outdated, we utilise obsolete and energetically inefficient technologies, the emissions of smoke gasses are high and the technologies of production and processing of wood biomass are outdated, too, which significantly influences the costs of production as well as the final market price.

Although PV systems have a strong potential, their costs are still high so it is reasonable to promote them to the extent enabling the implementation of the technology and the production of the technology in Slovenia. The potential of the geothermal energy in Slovenia for the electricity generation still needs to be explored.





Also desirable is the combined production of electricity and heat where the energy of the fuel (which may be of fossil origin or a renewable energy source) is transformed to heat and electricity, which causes less environmental burdens than separate production, although the problem of dependence on imports appears in certain aspects. The most common units of combined production in Slovenia are autoproducers (companies producing electricity and/or thermal energy besides their basic activity) and public power plants with the production of electricity and/or thermal energy as their main activity.

An important source of electricity in Slovenia is also nuclear energy (Krško nuclear plant) considerably contributing to meeting the needs for electricity in the country and thus to the reliable and quality supply, economics of electricity production and reduction of greenhouse gas emissions in Slovenia. The problem of the Krško nuclear plant is low and intermediate level waste which requires a solution, as only a final and safe solution of disposal may allow for the construction of new facilities or increased life-expectancy, which are envisaged possibilities for further development.

#### **MINERAL RESOURCES:**

The efficient use of mineral resources arose as the subject of political debate around 1990, at a time when the metal mines with more than hundred years of tradition, subterranean coal mines and the uranium mine began to close. The mining practice of today chiefly focuses on mineral resources used for construction where measures will have to be taken to ensure sustainable exploitation of resources, including recycled materials and secondary raw materials (scoria etc.), when possible.

#### WASTE:

With the implementation of the Operational programme on elimination of waste aiming at the reduction of the quantity of biodegradable waste disposal, Slovenia in terms of substance created the right foundation for municipal waste management in a way which enables it to become a recycling society that is economically efficient and environment friendly. However, the instruments which were put in place within the programme and associated decrees were not in themselves efficient and clear enough to direct waste streams from disposal to recovery, increase the recycling rate and improve its technology, increase composting and energy recovery of waste. In order to redress the current state of municipal waste management, a new programme and legislative package for municipal waste management is being prepared, which will among others stipulate minimum maintenance standards, technical measures and the standards for public service provision, the responsibilities related with the setting up of local-level infrastructure for public service provision and the responsibilities of the producer of municipal waste with regard to the separate collection at sources. The new features include the provision on mandatory door-todoor separate waste collection for packaging waste and biological waste, using recycling bins only for collecting glass and paper, and the introduction of separate collection at least for paper, metal and plastic packaging and kitchen waste in public institutions and companies. In addition, new recovery and disposal objectives will be defined. The waste management objectives will be transferred from the national to local levels. More attention will also be placed on raising public awareness and on organizing collection events with free refuse disposal services. Actions aiming at reducing waste and use of resources, and not only separation and recovery of waste have not





yet been included into the new programme and legislative package, but should be incorporated into it shortly.

#### 3. Overall Policy Approach for Resource Efficiency

Below is the schematic presentation of the Slovene hierarchy of strategic and implementation documents.

Strategic document Operational document	Slovenia's Development Strategy (SDS) ↓ National Development Programme			
	$\downarrow$ $\downarrow$		↓	
Other documents	Resolution on national development projects		National Strategic Reference Frameworl	ĸ
		ectoral strategies, solutions, nationa programmes	↓ ↓ Operational I programmes	
	Documents regarding European Union and other international institutions (in accordance with SDS)		$\uparrow$	

Slovenia does not have specific strategic document that addresses the issue of resources efficiency. Other strategic documents do touch the issue in one way or another but not in a coordinated matter.

Recently in Slovenia we had opted for the transition to a 'target-oriented' programme budget. A target-oriented budget means that the expenditure planning is directly linked to the targets and to the activities for achieving these targets. In this context we prepared, among others nine development policies (entrepreneurship, R&D, labour market, education, transport, environment, energy, social development, and agriculture). The policies are divided into programmes and sub-programmes to which the necessary resources and programme indicators for efficiency monitoring are planned to be linked. The programme budget consists of a mid-term plan and a two-year budget. The two-year budget comprises 'a basket' in which all expenditure has been planned according to the set priorities operationalised in sub-programmes and integrated within programmes and corresponding indicators. The expenditure has been planned in accordance with the fiscal rule of the mid-term scenario.

Within the environmental and spatial policy a sustainable management of natural resources is formulated. The measures that it contains are still focusing mainly on waste management, waste water, drinking water and water management, and construction of related infrastructure, but the intention is that in the future, measures which focus on resources efficiency would be introduced in the context of this policy as well as they will be integrated in other sectoral policies.





In the context of environmental and spatial policy one of the objectives is also to achieve good state of the environment. To see if we are going towards the desired goal, several indicators had been selected, among them also Domestic Material Consumption (DMC) and Direct Material Input (DMI). The intention of introduction of these indicators was to bring the issue of resources efficiency closer to the attention of the policy makers. We are aware that the Eurostat had now also introduced a headline indicator *Resource productivity*, which could be better to be used in the future for this purpose.

#### Slovenia's Development Strategy (SDS), 2005.

Slovenia's Development Strategy (SDS) for the period 2006-2013 is considered as Slovenia's sustainable development strategy, because at the forefront of it is the overall welfare of every individual, meaning that it does not focus solely on economic issues but also involves social, environmental, political, legal and cultural issues.

One of the main objectives of the development of Slovenia is the principle of sustainability which means, in the field of the environment and spatial planning, such organisation of the economy, infrastructure, settlement and the way of life in the framework of the capacity of the environment, space and natural resources, as to allow the satisfaction of the spatial or settlements needs of the population in an efficient way. The main orientations indicating efficient resource management refer to:

- climate change, which will require the reduction of the greenhouse gas emissions and the adaptation of agriculture and forestry,
- increased sustainable use of natural resources and recycling and recovery of waste,
- provision of favourable status and appropriate management of water,
- stopping the reduction of biodiversity.

#### http://www.umar.gov.si/fileadmin/user\_upload/projekti/02\_StrategijarazvojaSlovenije.pdf

In 2006 government adopted a **Resolution on national development projects for the period of 2006-2023**, containing the list of projects that will foster further economic and social development.

#### National development programme (NDP), 2008

In 2008 the government adopted National development programme (NDP) as an implementation document of the SDS in accordance with the Decree on the documents of development planning bases and procedures for the preparation of the central and local government budgets.

The main objectives of the development programme are:

- to increase the economic, environmental and social capital,
- to increase efficiency in the sense of economic competitiveness, quality of living and sustainable use of natural resources.

In the National Development Programme, the activities on following topics aimed at achieving sustainable development refer to the efficient resource management:

• harmonised regional development, development of the countryside and fisheries,





- food security and improving the quality of life in urban and rural areas
- renewable energy sources and efficient energy use
- spatial and real estate management and conditions for improved operation of the real estate market
- environmental management and efficient environmental infrastructure

#### <u>http://www.svlr.gov.si/fileadmin/svlsrp.gov.si/pageuploads/A-REG-RAZVOJ/drp/DRP2007-2013-</u> <u>sprejet.zip</u>

#### National Strategic Reference Framework (NSRF), 2007

Slovenia adopted the National Strategic Reference Framework (NSRF), as a document for coordination of funding on basis of National Development Programme and funding from EU funds. On basis of NSFR Slovenia adopted new **Operational programme of environmental and transport infrastructure development for the period 2007 – 2013.** EU funds are used to finance the environmental projects in waste management, collection and treatment of urban waste water, drinking water supply reducing water damages, in sustainable use of energy and renewable energy sources and transport infrastructure projects, railway infrastructure, road and maritime infrastructure and airport infrastructure.

<u>http://www.svlr.gov.si/fileadmin/svlsrp.gov.si/pageuploads/KOHEZIJA/kohezija-</u> <u>200207/National Strategic Reference Framework.pdf</u> <u>http://www.svlr.gov.si/fileadmin/svlsrp.gov.si/pageuploads/KOHEZIJA/KOHEZIJA -</u> <u>angleska stran/OP ENVIRN ENG.pdf</u>

#### Spatial Development Strategy of Slovenia (SDSS), 2004

Basic principles and objectives are presented by the Spatial Management Policy of the Republic of Slovenia (2002) and deepened within the Spatial Development Strategy of Slovenia (2004), Spatial Order of Slovenia (2004) and Slovene National Housing Programme (2000).

In line with the principle of sustainable development, which is its basic principle, the Spatial Strategy enforces prudent land use and provides for the safety of life and natural resources. It emphasizes endeavours to preserve spatial identity and to enhance the Slovenian identity as well as its local and/or regional identities.

http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/publikacije/drugo/en/sprs\_eng.pdf

Some explicit objectives related to resource efficiency, important also from the spatial development perspective, either as limitations or as potentials, are laid down in the Objectives chapter. But it has to be stressed that the Spatial Development Strategy of Slovenia considers also space as nearly non-renewable resource. The set objectives are transformed in the guidelines for national, regional and local spatial development and are checked during the preparation of spatial documents of different levels.





The following examples of objectives of the Spatial Development Strategy of Slovenia, directly or indirectly deal with resource efficiency, including, as explained above, also space as a resource:

- 1. Rational and effective spatial development
- 1.1 To guide activities with spatial impact so as to produce maximum positive effects towards a spatially balanced and economically efficient development, social integration, and the quality of the natural and living environment.
- 1.2 To ensure rational land use and the safety of the population through appropriate planning, multipurpose use and the linking of sectors.
- 1.3 To improve situations involving negative spatial development trends by taking spatial and environmental measures.
- 8. Prudent use of natural resources
- 8.1 Economical and multipurpose use of land and resources.
- 8.2 Appropriate land use for urbanization and the control of the enlargement of urban areas.
- 8.3 Conservation of production potential of soil for agricultural use.
- 8.4 Balanced supply with raw mineral resources.
- 8.5 To distribute activities so as to ensure balance between the possibilities of supply and the demand for water.

#### Strategy of Regional Development in Slovenia (SRDS), 2001

Basic strategic document of Slovenian regional policy is Strategy of Regional Development in Slovenia (SRDS) that was adopted by the government in 2001. The vision of the regional development in Slovenia is balanced economic, social, health, cultural, spatial and environmental aspects of development in all regions of Slovenia, which would ensure a high living standard and quality of health and living environment of the entire population of Slovenia. The vision strives for the sustainable development in the broadest sense, which optimally uses all potentials in the region without reducing the resources and development possibilities of the future generations.

#### http://www.rra-posavje.si/files/File/strategija%20reg.%20razvoja.pdf

#### The National Environmental Action Programme (NEAP)

The National Environmental Action Programme (NEAP) for 2005-2012 is the basic strategic environmental protection document. Its chief objective is the general improvement of the environment and quality of life, and the protection of natural resources. NEAP sets out a framework for environmental policy in Slovenia for the 2005–2012 period, and contains guidelines for future policy. The strategic environmental protection guidelines and the instruments to be deployed to achieve the objectives of the programme and sustainable development are set out below:

- Drafting and adopting new legislation and the consistent implementation of existing legislation
- <u>Sustainable use of natural resources</u> (this objective is integrated in many sectoral legislation for example in acts for hunting, fishing, mining, forests and waters)
- <u>Inclusion of environmental protection requirements in spatial development planning</u> (to ensure a high level of environmental protection and to assist in the inclusion of





environmental aspects in the preparation and adoption of plans and programmes, thus further promoting sustainable development)

- Integration of the environment into sectoral policies (In relation to the objectives of the Birds and the Habitats Directive, priority financial measures for the drafting and implementation of programmes for the management of special protected areas, including NATURA 2000, were directed to other plans, such as forest, hunting and fishery management plans and river basin management plans. In order to improve the efficiency of protection measures and to establish nature conservation status on a continual and ongoing basis, the monitoring of biodiversity measures to implement nature conservation policy were ensured as a matter of priority in Natura 2000 areas and in habitats of plant and animal species whose protection is in the interests of the EU. The necessary establishment or enhancement of a nature conservation information system was connected to this. National budget funds were earmarked for the implementation of renaturisation projects in terms of the rehabilitation and improvement of habitats, the purchase of as many areas of land as possible of importance for the conservation of biodiversity (Mura, Škocjan bay), compensation for loss of development rights and the payment of compensation for damage caused by protected animal species (bear, wolf).
- Environmental technologies
- <u>Promoting sustainable production and consumption</u>
- <u>Economic policy and environmental protection</u>
- Raising environmental awareness, dialogue with interested parties and public participation
- <u>Redevelopment of brownfield sites</u>

http://www.uradni-list.si/files/RS -2006-002-00003-OB~P001-0000.PDF

#### National Reform Programme

Slovenia is preparing a National Reform Programme in accordance with EU respond to the global economic crisis. Although document is not finalized yet (it will be done in the first quarter of the year) many issues concerning sustainability and environmental protection are included. Further development (construction) of water and waste infrastructure is foreseen.

<u>http://www.svrez.gov.si/fileadmin/svez.gov.si/paqeuploads/docs/Razvojni\_dokumenti/NRP\_koncn</u> <u>a 17.11. 2010\_FINAL.doc</u> (draft, November 2010)





### 4. Strategies or action plans to improve resource efficiency for individual economic sectors, products or product groups

Sector-specific strategies and action plans:

#### FORESTRY:

#### • National Forest Programme (2007)

Wood is the most important renewable material in Slovenia. Although the general benefits of forests are the most important, their economic importance is far from negligible. By National Forest Programme it is possible to cut more wood in Slovenian forests and at the same time provide their sustainable preservation and development. Tradition and knowledge in Slovenian forestry and wood industry can largely contribute to the enrichment of wood from our forests and permanently contribute its share to the added value created in the country. Forests largely contribute to social security and the quality of life of the rural population. http://www.zgs.gov.si/fileadmin/zgs/main/img/PDF/Katalog\_IJZ/NGP3.pdf

#### **RURAL DEVELOPMENT:**

#### • Rural Development Programme of the Republic of Slovenia 2007-2013

In the need to improve the competitiveness of all three sectors of the primary production, i.e. agriculture, food industry and forestry, special attention is paid to sustainable management of natural resources, maintenance of cultural landscape, environmental protection and preservation of the settlement and the identity of rural areas. In this context measures to ensure the sustainable use of water (quality and quantity) and agricultural land and protect the biodiversity are implemented.

http://www.arsktrp.gov.si/fileadmin/arsktrp.gov.si/pageuploads/Aktualno/Aktualno/2010/RDP20 07-2013 en.pdf

#### **BIODIVERSITY:**

#### • Biodiversity Conservation Strategy of Slovenia (2001)

The strategy stresses the approach of in-situ biodiversity conservation with the main stress on the conservation of ecosystems by preserving a favourable status of the relevant groups of plant and animal species and habitat types. It also stresses the need to preserve especially the most endangered types and forests - very important for the conservation of populations of species endangered at the European level. The Strategy also provides the orientations for the key activities of the sustainable use of components of biodiversity and sustainable development (for agriculture, forestry, hunting, fisheries, water management, transport, industry and energy industry and tourism).

http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/publikacije/drugo/biotska.pdf





#### WATER:

#### • Water Management Plan (2009-2015) (not adopted jet)

Slovenia is water rich country – with abundance of water in all forms with remarkable richness of animal and plant species in it. Waste water discharges, application of nutrients and plant protection products in agriculture, building of infrastructural and other objects with impacts on water environment, excessive (local) water abstraction are main pressures to the Slovenian resources. To sustain quality and quantity of water resources measures are adopted for each pressure (sector) and each river basin.

#### **FISHERIES:**

• National Strategic Plan on the Development of Fisheries in the Republic of Slovenia 2007-2013

The National Strategic Plan for Fisheries Development in the Republic of Slovenia determines the priorities for the development of fisheries and aquaculture in Slovenia in accordance with the common policy on fisheries providing a balanced and sustainable development of the fisheries sector.

http://www.mkgp.gov.si/fileadmin/mkgp.gov.si/pageuploads/Ribogojstvo/april2010/Nacionalni\_s trateski\_nacrt\_Ribistvo\_2007\_2013.pdf

#### **ENERGY:**

#### • Resolution on the National Energy Programme (ReNEP), 2004

In order to provide for better energy efficiency and environmental sustainability, the Government of RS in 2004 adopted the Resolution on the National Energy Programme (ReNEP), which layed down the objectives of the energy policy: competitiveness of the energy companies, the economy and the Government, reliability in providing energy services and reduction of environmental impacts. By adopting the ReNEP, Slovenia has set ambitious objectives as regards both the increasing of efficiency of energy use in industry, the service sector, the public sector, transport and the increasing of the use of renewable energy sources for producing both electricity and heat. In 2011 the new National Energy Programme (NEP) is in the preparation and it's assessed within the strategic environmental assessment with the emphasis on climate change, biodiversity, water and air environmental aims.

http://www.uradni-list.si/1/objava.jsp?urlid=200457&stevilka=2669

#### • National Energy Efficiency Action Plan (NEEAP), 2008

The National Energy Efficiency Action Plan for the period 2008-2016 (AN-URE) determines the measures for improved energy efficiency. Different instruments (sector-specific, multisectoral and horizontal measures) in all sectors (households, general consumption, industry and transport) are foreseen in order to achieve the overall energy savings in Slovenia. <u>http://www.gen-energija.si/upload/files/156-AN\_1.pdf</u>

#### • Action plan on renewable energy resources for period 2010-2020 (AN OVE), 2010

AN OVE assesses and determines the necessary quantitative values of use of energy from renewable energy sources (RES) in individual sectors (heating and cooling, electricity, transport) and provides measures to enable the use of the required quantity of OVE energy in the future. The





key orientations include the development of markets of sustainably produced fuels (e.g. wood biomass, biogas), highly efficient technologies, quality services and provision of financial incentives for such development, introduction of renewable energy sources and efficient use of energy (green energy technologies) etc.

http://www.mg.gov.si/fileadmin/mg.gov.si/pageuploads/Energetika/Porocila/AN\_OVE\_2010-2020\_final.pdf

#### **TRANSPORT:**

#### • Resolution on the Transport Policy of the Republic of Slovenia (RePPRS), 2006

Ministry of Transport prepared the Resolution on RS Transport Policy, subtitled as "Intermodality: time for synergy" in 2006. It set the objectives, including also efficient energy use and clean environment.

<u>http://www.mzp.gov.si/fileadmin/mzp.gov.si/pageuploads/KM\_naslovnica/2011-</u> <u>ANG\_ResolucijaPP.pdf</u>

#### **MINERAL RESOURCES:**

National Mineral Resource Management Programme – General Plan

National Mineral Resource Management Programme (2009) addresses efficient mineral resource management and covers the entire mining cycle from exploration, mine development and extraction to closure and remediation. The new Mining Act, foresees the preparation of National Mining Strategy, to amend National Mineral Resource Management Programme, that will also have an extensive focus on efficient mineral resource management.

http://www.mg.gov.si/fileadmin/mg.gov.si/pageuploads/Energetika/Porocila/DP min sur.pdf

#### WASTE:

• Operational programme on elimination of wastes with objective to reduce the quantity of biodegradable disposal wastes (novelacija, 2008)

The Operational Programme on elimination of waste aiming at the reduction of the quantity of biodegradable waste disposal was adopted in 2004 and amended in March 2008. The Operational Programme determines the following strategic objectives in the waste management field: reduced generation and danger potential of waste at the point of origin, increased reuse, recycling and recovery of waste, utilisation of waste for energy purposes, reduced GHG emissions, priority redirection of waste from landfills to recovery processes and consequentially reduced number of active landfills, disposal of the maximally non-reactive remains of waste and establishment of the comprehensive and efficient system of waste management.

Due to the presently unsatisfactory situation in municipal waste management and with the aim to achieve the objectives of reuse and recycling in the Republic of Slovenia by 2020, the new programme and legislative package for communal waste is being prepared.

http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/zakonodaja/okolje/varstvo\_okolja/op erativni\_programi/op\_odpadki\_biorazgradljivi.pdf





### 5. Individual types of resources identified as priority for national or sector-specific resource efficiency policies

At the national level, most strategic documents address the resource efficiency as a part of sustainable development. Priority fields for the resource efficiency are still being determined both at the national level and in individual sectors.

### 6. Strategic objectives, targets and indicators on resource efficiency

#### FORESTRY:

(National Forest Programme (2007))

#### Examples of objectives in economic aspect of forest:

- At the national level, timber removal in forests should reach 75% of the increment.
- <u>Indicators:</u> the area of forests, growing stock; increment and assortment structure of timber removal.
- Increase export of wood products with increased added values in domestic wood industry.
- <u>Indicators:</u> import and export of round wood and export of wood products.
- Increase the use of wood and wood products in construction and residential environment. Wood and wood products should become the leading material by 2015.
- <u>Indicator:</u> quantity of round wood used in manufacturing in Slovenia.
- Higher share of use of wood in Slovenia's primary energy balance.

<u>Indicators:</u> quantity of biofuel made from wood; number of concluded wood energy contracts.

#### Examples of objectives in social aspect of forest:

• Increase the share of state and municipal forests in the proximity of larger cities for better coordination of the use of forests in the conditions of emphasised social functions of forests. The areas of urban and suburban forests should be determined with interested local communities.

<u>Indicators</u>: the area of forests accessible to the public; the share of municipal and state forests; number of educational paths.

#### Examples of objectives in environmental aspect of forest:

Using adequate guidelines within forest management plans and adequate management to preserve favourable conservation status of rare and vulnerable forest habitat types, including habitat types and species in the areas of Natura 2000, and to primarily preserve:

a) diversity of forest structure in different age-phases,





- b) adequate quantity of abiotic forest material (dead trees),
- c) characteristic structure of biocenosis, without exotic species and genetically modified organisms,
- d) the area of 11 forest habitat types of Community importance.

<u>Indicators</u>: the area of protected forests; area of protected areas; area of forests in ecologically important areas, area of habitat types of Community importance; area of peaceful zones; structure of forests by the preservation levels; tree structure; structure of development phases, share of outgrowth; quantity of dead trees; damage caused by wild game; area of habitat types of Community importance in favourable condition; number of species in the areas of Natura 2000 in favourable condition.

#### **ENERGY:**

#### Examples of energy objectives:

- the exploitation of the existing savings potentials and the promotion of the use of new energetically efficient technologies, facilities and procedures will enable the 2.5% reduction in the annual rate of growth of overall energy needs compares to the growth of the gross domestic product (Resolution on the National Energy Programme, 2004)
- to achieve the 9 % saving in the period 2008–2016 of overall energy with the implementation of planned instruments consisting of the measures for efficient use of energy and energy services (National Energy Efficiency Action Plan, 2008)
- to preserve the domestic lignite production and find a compromise between the implementation of the Kyoto Protocol commitments and the achievement of economic trading conditions (Resolution on the National Energy Programme , 2004)
- to ensure 25 % share of renewable energy sources in the overall energy use and 10 % share of renewable energy sources in transport by 2020, which, according to the current forecasts, implies a doubled production of energy from renewable sources in comparison to the base year 2005, and to stop the growth of overall energy use (Action plan on renewable energy resources for period 2010-2020, 2010)

Indicators: Energy-related greenhouse gas emissions, Emissions intensity of public conventional thermal power (electricity and heat) production, Residues from the combustion of coal for energy production, Nuclear waste production, Emissions of air pollutants from energy sources, Final energy consumption by sector, Total energy intensity, Electricity consumption, Efficiency of electricity production, Combined heat and power (CHP), Final energy consumption intensity, Total energy consumption by fuel, Electricity production by fuel, Renewable energy sources, Electricity production from renewable energy sources, Energy prices, Energy taxes, Subsidies in the energy sector, External costs of electricity production, Share of renewables in final energy consumption, Energy import dependency, Energy losses in transformation and distribution. <a href="http://kazalci.arso.gov.si/?data=group&group\_id=21&lang\_id=94">http://kazalci.arso.gov.si/?data=group&group\_id=21&lang\_id=94</a>





#### MINERAL RESOURCES:

The management aimed at the provision of mineral resources and preservation of access to natural resources to the future generation according to the principles of sustainable development has been provided as the basic target by the National Mineral Resource Management Programme. This is accompanied by the following general aims and objectives:

- rational utilization of natural resources (mineral resources),
- management aimed at the provision of mineral resources and preservation of access to natural resources for the future generation according to the principles of sustainable development,
- balanced provision of mineral resources from domestic sources,
- reduction of negative impacts on the environment and local communities,
- maximum knowledge and protection of the potential and usability of mineral resources, etc.

In Slovenia we divide mineral resources into:

- Energy (brown coal, lignite, oil and natural gas, geothermal energy)
- Metals (/)
- Non-metals (bentonite, chert, quartz sand, calcite, tuff, industrial dolomite, ceramic clay, brick clay, natural stone (limestone, tonalite, other natural stones), raw materials for the lime and cement industry (limestone and marl for industrial purposes), crushed limestone, dolomite, magmatic and metamorphic rocks (metadiabase, keratophyre, andesite and andesite tuff, serpentinite), gravel and sand.)
- Other mineral resources (sea salt)

The indicators were drafted as a part of the Environmental Report of the General Plan of the National Mineral Resource Management Programme:

- Environmental Indicators of the Mining Activity in Slovenia
- <u>European Sustainable Development Indicators for Mineral Resources at the National Level</u> <u>as Support Tool for Decision-Making and International Comparison</u> (2006)
- National environmental indicators for the mining sector of Slovenia (3rd AMIREG International Conference (2009): Assessing the Footprint of Resource Utilization and Hazardous Waste Management, Athens, Greece (2009)

The new Mining Act, which entered into force in early 2011, foresees the preparation of a strategy focused on an efficient use of resources.





#### WASTE:

#### National waste targets

		min recovery	min recycling	collection rate		
Packaging	2012	60%	55%			
			(60 % glass, 60 % paper and			
			cardboard, 50 % metal, 22.5			
			% plastic, 15 % wood)			
ELV	2015	95%	85%	100%		
WEE	2006	70%	50%	min 4 kg per		
				inhabitant per		
				year		
Batteries	2011			25%		
	2012			45%		
	2016		50% to 75%			
			(efficiency)			
Tyres	2006	0 landfill of tyres				
Biowaste	2006	reduction to 75% of the 1995 level				
diverted	2009	reduction to 50% of the 1995 level				
from	2016	reduction to 35% of the 1995 level				
landfills						
New targets	2015	Separate collection: at least paper/metal/plastic/glass				
(WFD)	2020	50% household waste				
	2020	70% construction and demolition waste				

#### Indicators:

The Slovenian Environment Indicators contain 17 indicators within the theme "Waste and material flows". The theme include indicators for waste generation (Municipal waste, Hazardous waste, Waste from production and service activities) and indicators for amount of waste recycled and/or the amount of waste deposited (Landfill of waste, Waste management). Furthermore, Slovenia also have indicators for the various waste streams (Waste oils, Waste management, Sewage sludge from urban waste water treatment plants, Waste edible oils and fat, Organic kitchen waste, Waste batteries and accumulators, Packaging waste, Construction waste, End-of-life tyres, End-of-life vehicles).

http://kazalci.arso.gov.si/?data=group&group\_id=18





### 7. The institutional setup for the development and implementation of resource efficiency policies

Currently there is no formal setup for the development and implementation of resource efficiency policies. However, at the moment the Ministry of the Environment and Spatial planning is coordinating the Slovenian position on the Communication 'A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy'.

In order to achieve the necessary synergies and integrate the subject into sectoral policies we believe that the ministry of the Environment and Spatial Planning will have a coordinating role in future developments and that it will coordinate its work with the Ministry of Economics, Ministry of Higher Education, Science and Technology, Ministry of Agriculture, Forestry and Food, Office for Climate Change and Office for Development and European Affairs.

The Office for Development and European Affairs is currently implementing a project in the context of INTERREG IVC programme, entitled Cradle to Cradle Network (www.c2cn.eu). One of the key results of this project, where 10 partner countries are involved is, to create an Action Plan that will serve as a basis for devoting some of the EU funds for the implementing cradle to cradle principles in the practice.

The Institute of the Republic of Slovenia for Nature Conservation (IRSNC), is a leading partner of the NATREG project - Managing Natural Assets and Protected Areas as Sustainable Regional Development Opportunities. The project's main aim is to acknowledge and promote the potentials of natural assets and protected areas as drivers of sustainable regional development, and to increase the perception of preserved nature as a valuable asset. The main objective of the project is to establish a transnational and multi-sectoral cooperation network and to develop the Joint Strategy for Integrated Management of Protected Areas.

http://www.zrsvn.si/sl/informacija.asp?id meta type=64&id informacija=659

### 8. Selected policy instruments or initiatives on resource efficiency presented in more detail

Slovenia has a range of environmental taxes. Generally they mean the tax burden for the one who causes the pollution of the environment. Just landfill tax and waste water tax on pollution are collected as municipality's revenue and are meant to be spent exclusively for investment in local environmental infrastructure.

Government programs to promote efficient energy use and renewable sources of energy are carried out by the Ministry of Economy directly, or through the Environmental Fund. State plans also include financial incentives for investment in efficient energy use (household, public and service sector, industry) and investment in environmentally friendly energy production (renewable





energy, cogeneration systems) and energy advice and education, information and training for energy users and other target groups.

The Eco-Fund announced public calls for granting citizens for various investments in renewable energy and energy efficiency in residential buildings mainly covering:

- A modern boiler for central heating using wood biomass
- Replace the external doors and windows with new, appropriate energy-efficient building furniture.
- Installation of solar heating system for hot water and / or central heating,
- Installation of heat pumps for hot water and / or central heating,
- Installation of heating appliances for central heating using wood biomass
- Installation of central heating system in the reconstruction of residential buildings
- in case of connection to district heating with a renewable energy source
- Replacement of external joinery
- Thermal insulation of facades in the reconstruction of one or two-dwelling buildings
- Thermal insulation or roof. Loft in the reconstruction of one or two-dwelling buildings
- Installation of ventilation systems with exhaust air heat recovery,
- Construction or purchase of new low-energy and passive housing buildings
- The purchase of housing units in apartment buildings constructed or renovated in passive energy class.

#### Forest management plans

The Slovenian forest management planning has begun in the first half of the 18th century; the first forest management plan was Franz Flameck's plan for Tolmin forests in 1771.

Since 1948 Slovenian territory is divided into 14 forest management areas, each with several forest management units and for each forest management plan is produced by Slovenian Forest Service. Final adoption of plans of forest management units is the responsibility of the Ministry of Agriculture, Forestry and Food, and in the case of forest areas, the Government of the Republic of Slovenia.

The forest management plans, which are produced for a period of ten years, describe the state of the forests and their development trends, including an analysis of past management performance and set the objectives, guidelines and measures. Once, the main and almost the sole purpose of forest management was timber production. Today this, though still an important goal, constantly gains new targets related to important functions of forests, such as protective and ecological function, water protection and recreation. For a more objective and rational assessment of these objectives the map of forest functions was constructed in 2001 and is regularly maintained in the reconstruction of plans for forest management units.





In the process of plans production, Forest Service also cooperates with the organizations responsible for nature protection. Forests, which are defined as forests with special purposes, and all forests located in areas NATURA 2000 receive special attention, which means that all the guidance and the planned actions will be carefully examined, taking into account the wider interests of preserving nature. The statutory procedure for the adoption of forest management plans includes public hearings, which enables participation of forest owners and the public. During the hearings argumentative comments on the forest management plans can be presented on the meetings or in written via electronic forms (<u>http://www.zgs.gov.si/slo/delovna-podrocja/gozdnogospodarsko-nacrtovanje/zbiranje-pobud-v-letu-2008/index.html</u>).

#### 9. Topics of interest and information needs for follow up work

Topics of the workshops that could be mostly beneficial could be:

- Indicators
- Good practices/successful policies for creating closed loop/cyclical economic system, key success elements.





#### 10. References

#### **10.1** Facts and figures about the country

[1] Eurostat, 2011 [demo\_pjan]

http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=demo\_pjan&lang=en

[2] CIA World Factbook (2009 est.) https://www.cia.gov/library/publications/the-world-factbook/index.html

[3] Eurostat, 2011 [nama\_gdp\_c] http://appsso.eurostat.ec.europa.eu/nui/show.do

[4] Eurostat 2011 [tsieb010]

http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tsieb010 &plugin=0

[5] World Bank, Migration and Remittances Factbook 2011 <u>http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:21352</u> <u>016~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html</u>

[6] European Commission 2008

http://europa.eu/abc/12lessons/key\_dates/index\_en.htm visited December 15, 2008

[7] Eurostat, OECD and Total Economy Database

DMC data from Eurostat Database, Material Flow Accounts, and OECD, Population data from Eurostat Database, Population, and The Conference Board — Total Economy Database, September 2010. <a href="https://www.conference-board.org/data/economydatabase/">www.conference-board.org/data/economydatabase/</a>

[8] Eurostat Material flow accounts, env\_ac\_mfa, uploaded June 2010

[9] The Conference Board, Total Economy Database, Eurostat GDP data from The Conference Board — Total Economy Database, September 2010, <u>www.conference-board.org/data/economydatabase/</u>; DMC data from Eurostat Database on Environmental Accounts, and OECD.

[10] Eurostat Energy statistics, uploaded Oct 2010 <u>http://epp.eurostat.ec.europa.eu/portal/page/portal/energy/data/database</u>

[11] Total Economy Database, IFF Database. WI Database, Eurostat, OECD, IEA Database GDP data and Labour data from The Conference Board — Total Economy Database, September 2010, <u>www.conferenceboard.org/data/economydatabase/</u>; DMC data for 1970–1999 (EU-15): IFF database; DMC data for 1992–1999 (EU-12): WI database; DMC data for 2000–2007: Eurostat Database on Material Flow Accounts except Turkey: OECD database; TPES data from IEA Database





#### 10.2 Resource Efficiency Policy References

Action plan on renewable energy resources for period 2010-2020 (AN OVE). Government of the Republic of Slovenia, 2010, Slovenian

http://www.mg.gov.si/fileadmin/mg.gov.si/pageuploads/Energetika/Porocila/AN\_OVE\_2010-2020\_final.pdf

Biodiversity Conservation Strategy of Slovenia. Ministry of the Environment and Spatial Planning, 2001, English

http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/publikacije/drugo/biotska.pdf

Eco fund. Slovenian Environmental Public Fund, 2010 http://www.ekosklad.si/html/razpisi/main\_4SUB-OB10.html

Green Paper for National Energy Programme. Ministry of the Economy, 2009, Slovenian <u>http://www.gen-energija.si/upload/files/Zelena\_knjiga\_NEP\_2009.pdf</u>

Mineral resources in Slovenia 2009, Ministry of the Economy, Geological Survey of Slovenia, 2010

National Development Programme (NDP). Government of the Republic of Slovenia, 2008, Slovenian

http://www.svlr.gov.si/fileadmin/svlsrp.gov.si/pageuploads/A-REG-RAZVOJ/drp/DRP2007-2013sprejet.zip

National Energy Efficiency Action Plan (NEEAP). Government of the Republic of Slovenia, 2008, English

http://www.gen-energija.si/upload/files/156-AN\_1.pdf

National Forest Programme. Ministry of Agriculture, Forestry and Food, 2007, English <u>http://www.mkgp.gov.si/fileadmin/mkgp.gov.si/pageuploads/GOZD/NFP\_RS.pdf</u>

National Reform Programme (Draft). Government of the Republic of Slovenia, 2010, Slovenian <u>http://www.svrez.gov.si/fileadmin/svez.gov.si/pageuploads/docs/Razvojni\_dokumenti/NRP\_konc</u> <u>na\_17.11.\_2010\_FINAL.doc</u>

National Strategic Plan on the Development of Fisheries in the Republic of Slovenia 2007-2013. Ministry of Agriculture, Forestry and Food, 2007, Slovenian <u>http://www.mkgp.gov.si/fileadmin/mkgp.gov.si/pageuploads/Ribogojstvo/april2010/Nacionalni\_s</u> <u>trateski\_nacrt\_Ribistvo\_2007\_2013.pdf</u>

National Strategic Reference Framework (NSRF). Government Office for Local Self-Government and Regional Policy, 2007, English <u>http://www.svlr.gov.si/fileadmin/svlsrp.gov.si/pageuploads/KOHEZIJA/kohezija-</u> 200207/National Strategic Reference Framework.pdf

OECD Environmental Performance Review – Slovenia, Background Document; Ministry for the Environment and Spatial Planning, 2011





Operational programme of environmental and transport infrastructure development for the period 2007 – 2013, Government Office for Local Self-Government and Regional Policy, 2007, English

<u>http://www.svlr.gov.si/fileadmin/svlsrp.gov.si/pageuploads/KOHEZIJA/KOHEZIJA -</u> <u>angleska\_stran/OP\_ENVIRN\_ENG.pdf</u>

Resolution on the National Energy Programme (ReNEP). Ministry of the Economy, 2004, Slovenian <u>http://www.uradni-list.si/1/objava.jsp?urlid=200457&stevilka=2669</u>

Resolution on the Transport Policy of the Republic of Slovenia (RePPRS), Ministry of Transport of the Republic of Slovenija 2006, Slovenian

http://www.mzp.gov.si/fileadmin/mzp.gov.si/pageuploads/KM\_naslovnica/2011-ANG\_ResolucijaPP.pdf

Rural Development Programme of the Republic of Slovenia 2007-2013. Ministry of Agriculture, Forestry and Food, 2007, English

http://www.arsktrp.gov.si/fileadmin/arsktrp.gov.si/pageuploads/Aktualno/Aktualno/2010/RDP20 07-2013 en.pdf

Slovenian Forest Service, 2011, <u>http://www.zgs.gov.si/index.html</u>

Slovenia's Development Strategy (SDS). Institute of macroeconomics analysis and development, 2005, Slovenian

http://www.umar.gov.si/fileadmin/user\_upload/projekti/02\_StrategijarazvojaSlovenije.pdf

Spatial Development Strategy of Slovenia. Ministry of the Environment, Spatial Planning and Energy, 2004, English

http://www.uradni-list.si/1/objava.jsp?urlid=200476&stevilka=3397 http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/publikacije/drugo/sprs\_slo.pdf http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/publikacije/drugo/en/sprs\_eng.pdf

Strategy of Regional Development in Slovenia (SRDS). Ministry of the Economy, National Agency for Regional Development, 2001, Slovenian http://www.rra-posavje.si/files/File/strategija%20reg.%20razvoja.pdf

The National Environmental Action Programme (NEAP). Ministry of the Environment, Spatial Planning and Energy, 2005, Slovenian <u>http://www.uradni-list.si/files/RS\_-2006-002-00003-OB~P001-0000.PDF</u>

Water Management Plan (2009-2015) (not adopted jet)







#### Resource efficiency in Europe

Policies and approaches in 31 EEA member and cooperating countries

Further information about resource efficiency policies, including the analytical report and thirty-one detailed country profiles, are available on the EEA website:

http://www.eea.europa.eu/resource-efficiency

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

