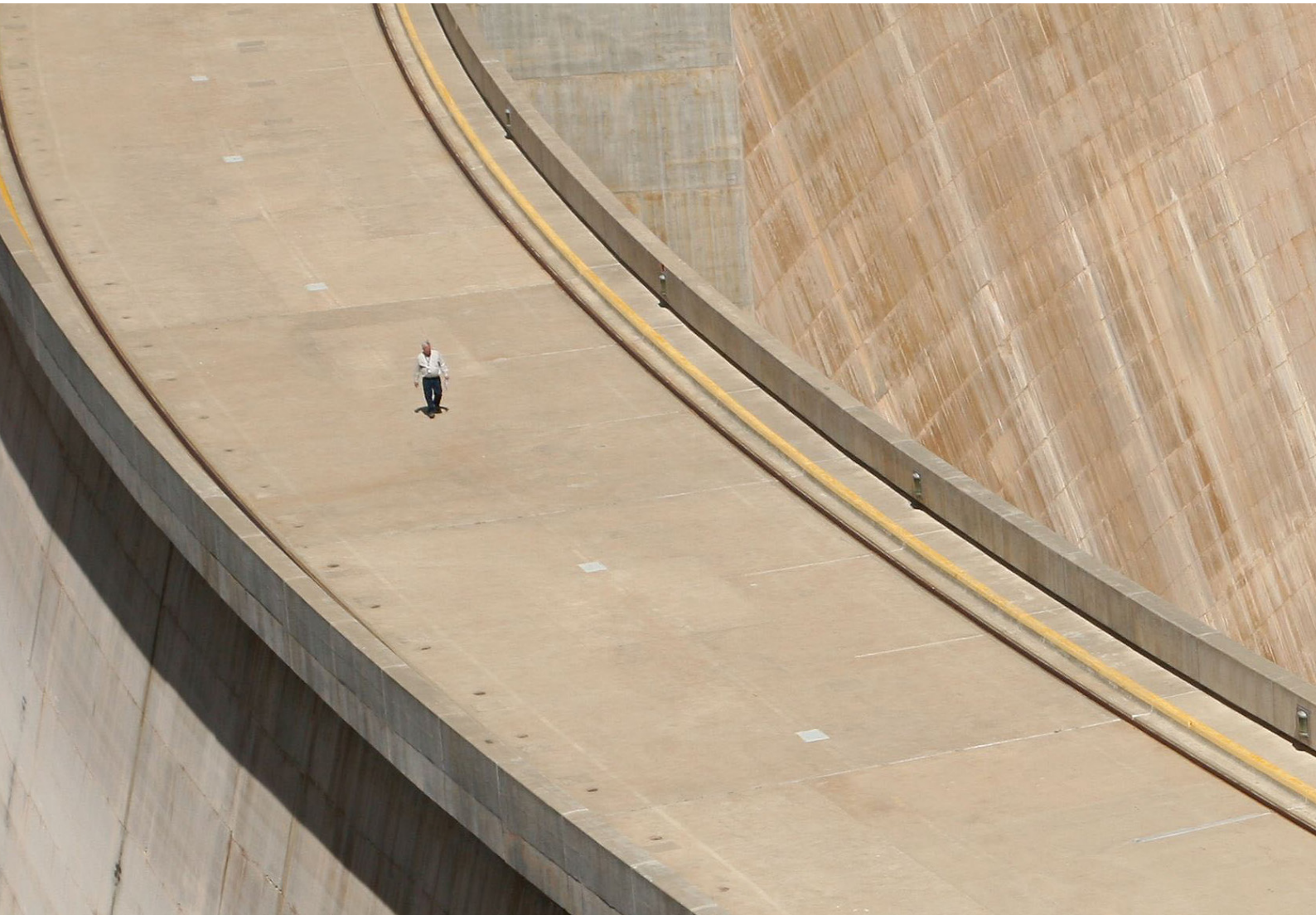


More from less — material resource efficiency in Europe

2015 overview of policies, instruments and targets in 32 countries



Latvia 

May 2016

This country profile was compiled by Erika Lagzdina, a senior expert of the Ministry of Environmental Protection and Regional Development, using information provided by the Ministries of Transport, Agriculture, Economics, Education and Science, Latvian Environment, Geology and Meteorology Centre, and the Central Statistical Bureau. This document should not be seen as an official list of government priorities and is not necessarily an exhaustive list of all national material resource efficiency policies, objectives, targets or activities in place. The information is current as of February 2016.

This country profile was prepared as part of the 2015 EEA review of material resource efficiency policies, that aimed to collect, analyse and disseminate information about the development and implementation of material resource efficiency policies in EEA member and cooperating countries. The work resulted in the following outcomes:



32 short country profiles (this document) – self assessments prepared by countries, describing the current status of material resource efficiency policies including key strategies and action plans, policy objectives, instruments, targets and indicators, and the institutional setup. Countries were also invited to share reflections on the future direction of resource efficiency policies.

EEA report *More From Less – material resource efficiency in Europe* – prepared by the EEA and ETC/WMGE, the report analyses trends, similarities and differences in policy responses, showcases selected policy initiatives from the countries, and offers some considerations for the development of future policies.

The EEA report *More from less – material resource efficiency in Europe* and the 32 country profiles are available at: <http://www.eea.europa.eu/resource-efficiency>



For information about trends and policies on municipal waste management in the participating countries, please visit: <http://www.eea.europa.eu/publications/managing-municipal-solid-waste>

Information about EU Member States' waste prevention programmes can be found at: <http://www.eea.europa.eu/publications/waste-prevention-in-europe-2015>

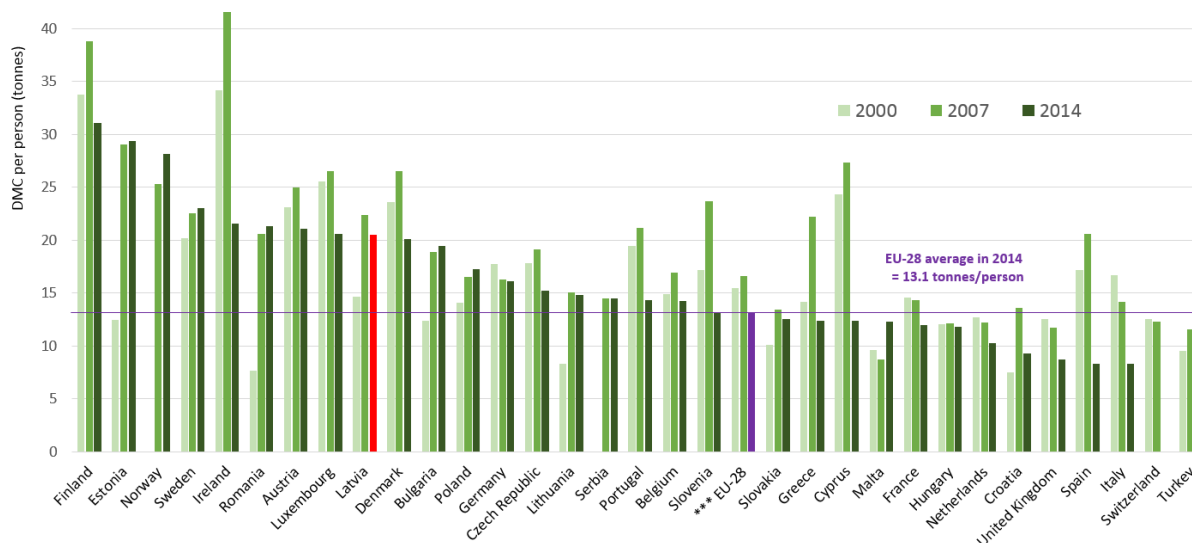
For information on climate- and energy-related policies, including those on energy efficiency, in the participating countries, please visit: <http://www.eea.europa.eu/themes/climate/ghg-country-profiles>

Latvia, facts and figures

Source: Eurostat

 	<p>GDP: EUR 23.6 billion (0.2% of EU-28 total in 2014)</p> <p>Per person GDP: EUR 17,500 (in purchasing power standard) (64 % of EU-28 average per person in 2014)</p> <p>Use of materials: 41 million tonnes DMC (0.6 % of EU-28 total in 2014) 20.5 tonnes DMC/person (156 % of EU-28 average in 2014) Resource productivity 0.51 EUR/kg (26 % of EU-28 average in 2014)</p> <p>Structure of the economy: agriculture: 3.4 % industry: 23.2 % services: 73.4 % (2014 est.)</p> <p>Surface area: 64,600 km² (1.4 % of EU-28 total)</p> <p>Population: 1.98 million (0.4 % of EU-28 total)</p>
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Use of materials (DMC) per person, participating countries and EU-28
(2000, 2007 and 2014)

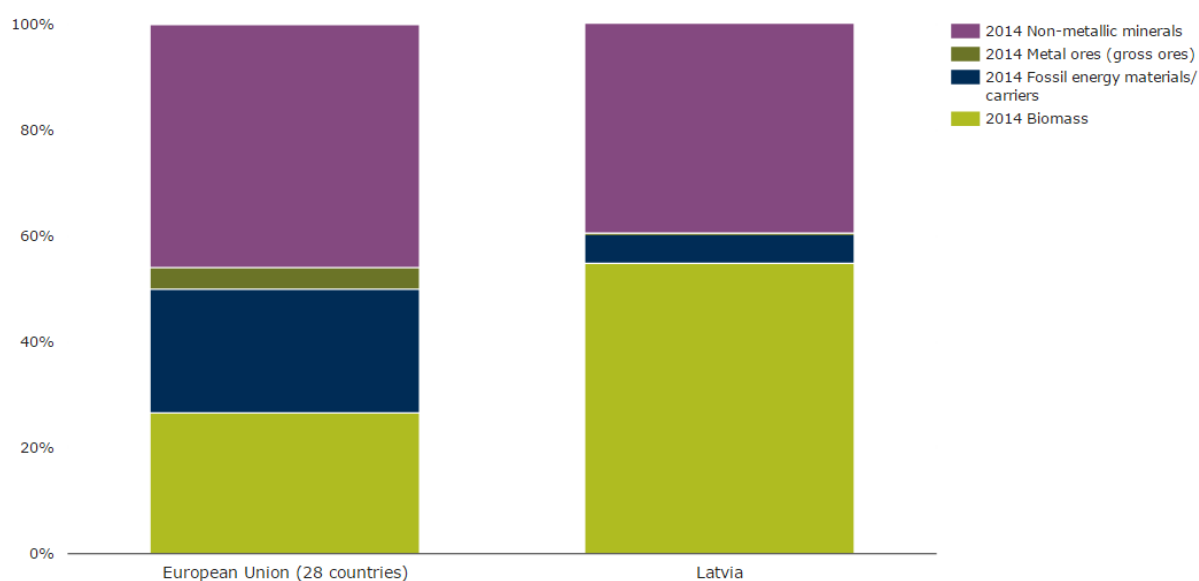


Generally in Latvia, material consumption per person (DMC) is moderately high due to leading production branches that are material intensive. Though the DMC indicator in Latvia shows growth,

it characterises the positive development of the national economy, but it is also influenced by the reduction of population size that is used in the calculation of this indicator.

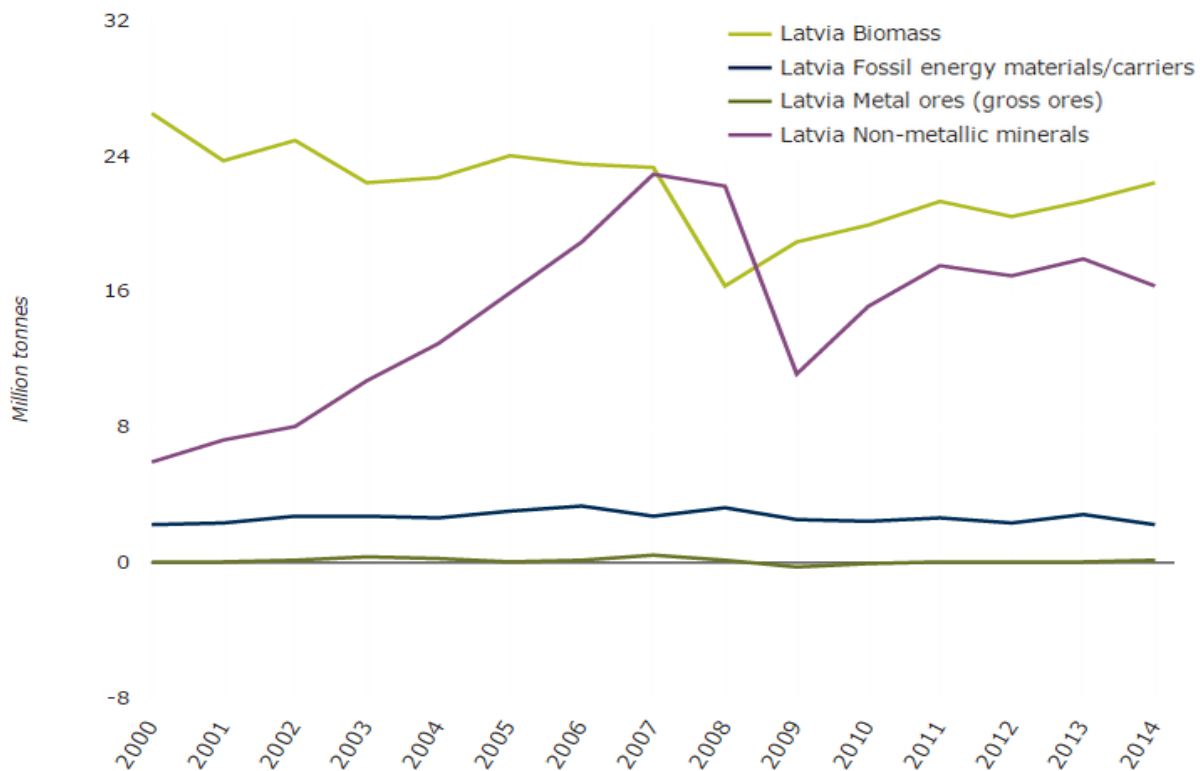
The economic boom, especially in the construction and road construction sectors, up to 2007 is a trend common to some new EU Member States where public investment was high. Since 2010, exports grew and moderate growth was also observed in private and public sector consumption.

Domestic material consumption by category, EU-28 average and Latvia (2014)



Biomass is the most important resource for the development of the national economy. The share of biomass in the domestic consumption is very high. It is used in wood processing, that is the main country's export industry, and for energy production in both centralised and individual heating systems. Minerals are mainly used for road construction that peaks periodically depending on the availability of the EU funding.

Trends in material consumption, Latvia by category (2000–2014)



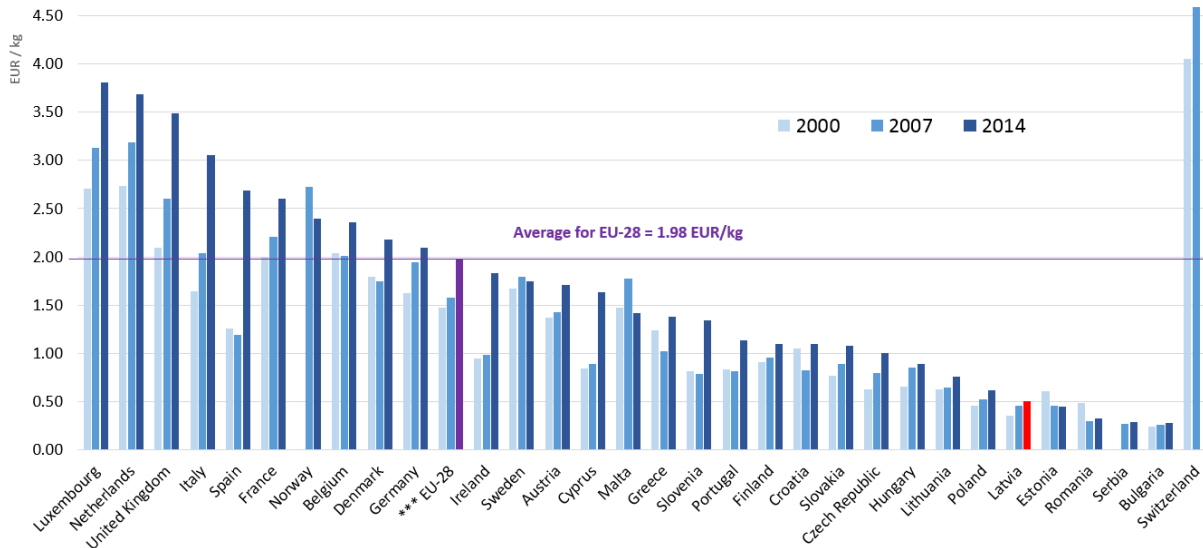
The recovery of construction and road construction industry after crisis in 2008 increased demand for mineral materials (sand and gravel particularly) in next years.

The share of fossil fuels is slowly decreasing due to numerous Latvian policy measures for energy efficiency and the development of the renewable energy sector, as well as increased use of biomass (wood) in energy production. Interest in biomass supply (wood) for heat production is expected to increase due to high demand from the centralised heating sector – this falls within the autonomous competence of local municipalities who are implementing EU funded projects.

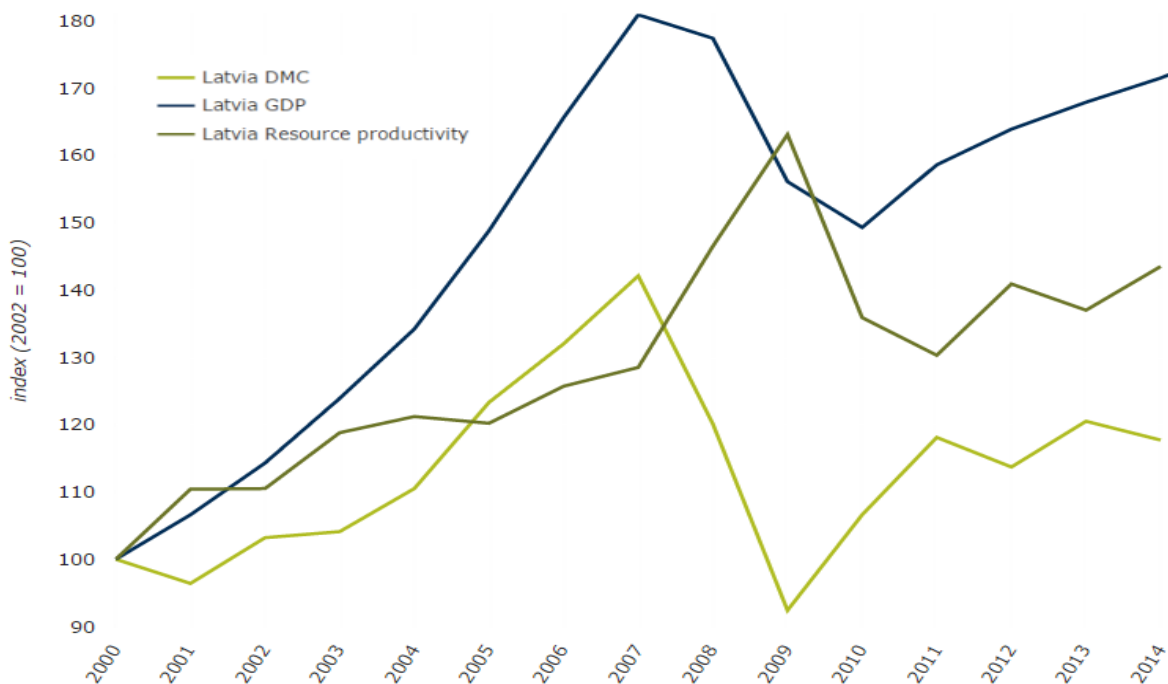
The increase in the use of biomass for energy production can also be explained by EU financial support, though the Rural Development Programme, for biogas production from a variety of resources including landfill gas, sludge and agricultural production.

Additionally, an increase in wood processing industry since 2010 caused higher demand for biomass materials.

**Resource productivity (GDP/DMC), participating countries and EU-28
 (2000, 2007 and 2014)**



GDP, DMC and resource productivity trends, Latvia (2000–2014)

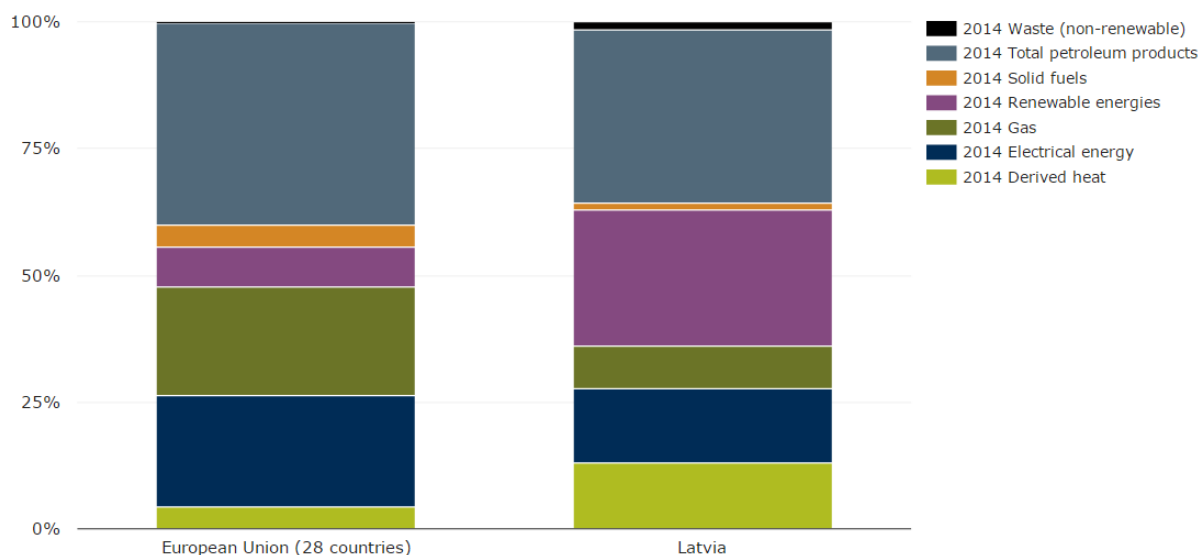


After temporary improvement due to the 2008 crisis, resource productivity in Latvia is diminishing since 2011 again, and generally correlates to gross domestic product (GDP) growth. During 2002–2013, GDP grew faster than DMC – so some decoupling can be observed. This indicator is very closely related to material consumption.

The Latvian economy is very dependent on biomass from wood and agricultural production, and construction materials. Any fluctuations of markets (demand for production) have immediate an impact on material consumption, GDP and, as result, on resource productivity.

From 2000 to 2007 DMC in Latvia increased by 42 % despite a decrease in biomass consumption – thanks to the increasing use of non-metallic minerals – products made in the cement, ceramics, and glass and lime sectors. In this period, consumption of these materials more than tripled as a result of a boom in the construction sector. But biomass is still the largest component of DMC, followed by fossil fuels.

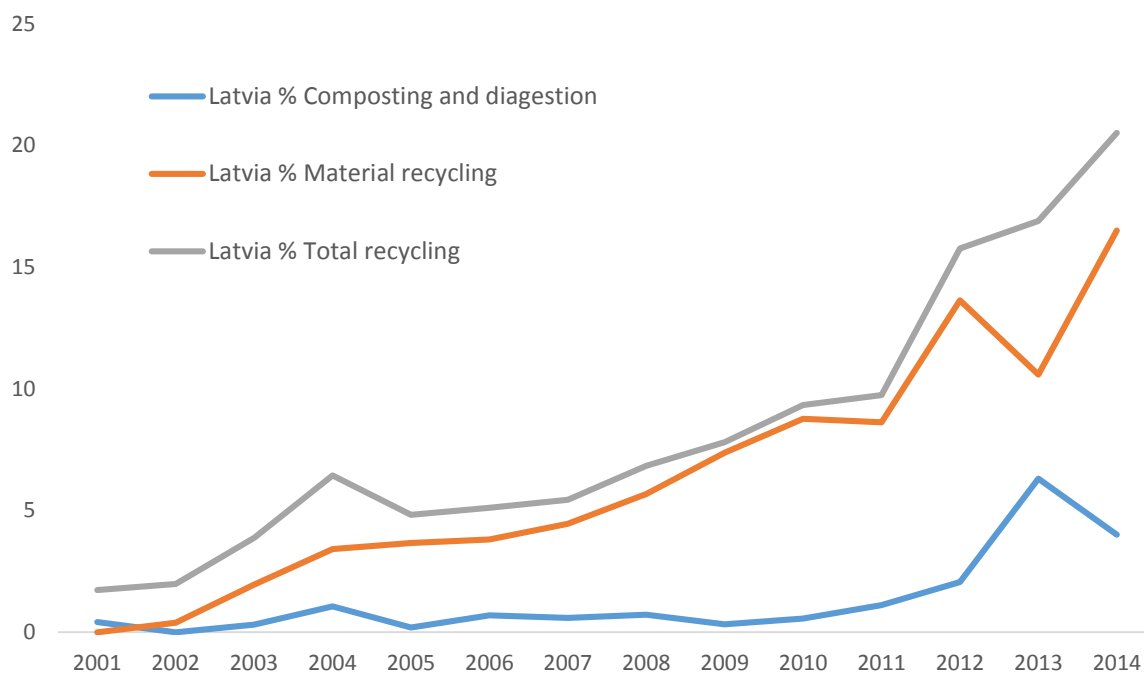
Share of final energy consumption by fuel type, EU-28 and Latvia (2014)



The high share of renewable energy in total energy consumption (38.7 % in 2014) is the result of the use of biomass for central and individual heating systems (share of solid biomass in renewable energy structure in 2014 is about 78 %) and use of hydropower for energy production (respectively 16 %). The high share of petroleum products can be explained by their use in the transport sector, which accounts for around 75 % of consumption (in petajoules ⁽¹⁾).

¹ A petajoule (PJ) is 10¹⁵ joules

Recycling of municipal waste, Latvia (2001–2014)



The total amount of generated solid waste decreased by around 9 % during 2001 -2014. Use of economic instruments including landfill charges and nature resource tax, and extended producers responsibility schemes, as well as financial support from the EU Cohesion Fund for the sorted collection of waste have facilitated a gradual increase in the recycling of waste materials.

Over last decade a share of recycled waste materials has grown from negligible amounts (about 2 % in 2003) to 16.5 % in 2014. The same progress is observed as regards municipal waste composting – share of composted waste gradually increased to 4 % in 2014. This increase is due to modernisation of waste sorting facilities at landfill sites (introducing of sorting lines).

Introduction

Latvia has neither a separate national strategy nor an action plan entirely dedicated to resource efficiency. However, objectives and targets of resource efficiency are integrated in various national-level strategic planning documents and sectoral policies, as illustrated below.

Scope of material resource efficiency

Neither the scope of the term *resources* nor of *resource efficiency* is formally defined in the national policy documents reviewed during the preparation of this report. There is also no consistency in the use of a term *natural resources* throughout policies. The broad meaning of the term *resource efficiency* is frequently used, and sometimes it is difficult to distinguish whether its meaning is related to material, monetary or other resources – human, infrastructure, etc. In sectoral policies, particularly in energy or environmental policies, the meaning of the terms *resources* and *efficiency* is much clearer than in general development documents.

In its annual publication *Environmental indicators in Latvia*, the Latvian Central Statistical Bureau uses the following definitions:

- *natural resources* – resources that are used or have a potential to be used in the creation of people's material wealth in order to ensure its existence and promote prosperity;
- *resource productivity* – a measure of the total amount of materials directly used by an economy in relation to economic activity. It provides insights into whether decoupling between the use of natural resources and economic growth is taking place. Resource productivity is expressed by amount of GDP generated per unit of domestic material consumption (DMC) in euros per kilogram. The methodology of calculation is based on the Eurostat approach;
- *domestic material consumption* (DMC) – measures the total amount of materials directly used by the economy and is defined as the annual quantity of raw materials extracted from the domestic territory, plus all physical imports minus all physical exports.

http://www.csb.gov.lv/sites/default/files/nr_32_vides_raditaji_latvija_2014_15_00_lv_en_0.pdf

In its web-based glossary, the Latvian Academy of Sciences, based on an economic approach, defines *material resources* and *raw materials* as:

- *material resources* – raw materials, materials, components, fuel, heat and electric energy to be used in basic and auxiliary production;
- *raw materials* – materials from extractive industries and agricultural production to be used further in production. Raw materials are also outworn materials and materials that are available for recycling.

<http://termini.lza.lv/term.php?term=materi%C4%81lie%20resursi&list=materi%C4%81lie%20resursi&lang=LV> (In Latvian)

The ***Sustainable Development Strategy of Latvia until 2030*** (2010) uses term *resources* within a *capital* conceptual framework (capital as a national treasure or value), hence other related notions – productivity of resources, effective resource governance – appear as well.

The strategy calls for the efficient and sustainable use of culture, nature, economic and social capital – all of them are represented by certain material resources. The strategy suggests that the development of the national economy should be based on innovation and a transfer to the low-carbon manufacture of goods and services, as well as the domestic use of renewable energy, healthy food and the commercialisation of eco-system services. All these elements are, to some extent, related to *resource efficiency* in a broader sense of the term. Additionally, the strategy underlines that the future of Latvia should be based on values that do not require intense utilisation of physical resources, thus encouraging resources saving and wise use.

The strategy emphasises that the value of natural resources and the availability of the natural environment provides a unique opportunity to develop a green economy and support sustainable consumption, which will create and preserve the image of Latvia as a *green country*. The concept of *green country* implies a holistic attitude towards the sustainable use of natural resources and energy.

It is said that energy is essential to development. The section on renewable and safe energy discusses energy resources and renewable energy resources in the context of an innovative economy.

In Section 5, *Nature as capital for future*, resources are divided into two traditional groups of, renewable and non-renewable resources, as well as living nature and ecosystem services.

In Section 6, *Spatial development* perspective, natural resources are interpreted as forests, agricultural lands, mineral resources and waters, and they are considered mainly from the perspective of rural, as opposed to urban, development.

http://www.pkc.gov.lv/images/LV2030/LIAS_2030_en.pdf

The **National Development Plan of Latvia, 2014–2020** (2012) use of *nature capital* and *natural resources* encompasses forests and agricultural lands, water and subsoil mineral resources. The term *resource efficiency* is used in relation to these resources.

http://www.pkc.gov.lv/images/NAP2020%20dokumenti/NDP2020_English_Final.pdf (in English)

The **Environmental Policy Guidelines 2014-2020** (2014) uses the term *resources* in relation to mineral resources, water and living nature/biodiversity. Resource efficiency in respect to these materials is addressed in the section *Subsoil mineral resources, waste and secondary materials*.

<http://polsis.mk.gov.lv/documents/4711> (in Latvian)

Driving forces of material resource efficiency

The essential driving forces for material resource efficiency policies are:

- **EU requirements and international obligations** are the most powerful driver. The requirements of the EU directives, especially in the fields of waste, energy and climate change, help countries to set quantitative targets and rigid time-frames in national policies and legislative norms;
- **energy independence** and security is a powerful factor, due to Latvia's geopolitical situation and energy supply pattern;
- **competitiveness** (and market forces) has been mentioned as a driving force for the efficient use of resources particularly in the energy and transport sectors (railway and goods transportation);
- **environmental sustainability** in general is an important factor, as it implies the sustainable use of domestic natural resources, the use of renewable energy, and sustainable production and consumption;
- **economic development** and the need for materials and energy resources, especially for agriculture and energy/material intensive industries.

Priority material resources, sectors and consumption categories

Priority materials

The notion of critical materials, as discussed in a global context, is not reflected in Latvia's national policies. It might be because the share of processing industry in GDP is quite small, about 14 %, and thus the demand for materials is not seen as needing to be addressed in policies.

At the same time, *Sustainable Development Strategy of Latvia until 2030* (2010), in the chapter related to management of natural capital, puts forward idea that it is necessary to determine the critical natural capital, which includes natural resources,, assess it and link results with the promotion of the sustainable management of resources.

The **National Industrial Policy Guidelines for 2014-2020** (2011) do not recognise any material resource as critical for domestic production. Some emphasis in the document is given to the availability of resources for forestry, agriculture and food industries. It should be noted, however, that although Latvia is a small country, it has significant smart technology (communication) and chemical sectors that may require increased amounts of specific critical materials in future.

The **State Waste Management Plan for 2013-2020** identifies waste as an essential raw material and resource to be reused or regenerated (recycled, recovered). The plan defines priority categories of waste to be collected and further processed with an aim to reducing their harmful impacts on the environment and/or return it to economy as a material:

- municipal waste, including non-hazardous industrial waste, as a resource to be sorted in order to recover useful materials;
- packaging waste, printed publications and advertising materials;
- specific hazardous waste;
- waste from goods harmful to the environment – used batteries and accumulators, waste oil products, waste electrical and electronic equipment (WEEE) and end-of-life tyres – in many cases used for energy and material recovery;
- end of life vehicles – material recovery;
- biodegradable waste – energy recovery;
- construction and demolition waste – material recovery for construction and road-building industries.

The criteria for identifying waste categories as essential sources are: their recyclability, the availability (and affordability) of technologies, infrastructure capacity for collecting and separating waste, and the economic feasibility of such operations.

In the **energy sector** resources are treated from a perspective of energy independence. Oil and gas have to be considered as important resources that occupy a reasonable share in total primary energy consumption. At the same time, the share of biomass (especially firewood) in the total primary energy consumption is around 33%, taking this into account, biomass should also be considered as an important resource.

Energy consumption in the **transport sector** forms approximately 33 % of the total consumption of primary energy resources and is almost entirely relying on the imported petroleum products. In respect to road traffic, there are policies providing some consideration to the sustainable use of domestic mineral resources (sand, gravel, dolomite etc.) for road maintenance and construction. Thus they might be classified as important domestic resources.

For **forestry sector**, availability of wood resources is mentioned as an essential development factor.

Priority industries and economic sectors

No manufacturing sectors are recognised as priorities for material resource efficiency within national policies. The general approach to efficiency and productivity in economics leaves policy-makers to address resource efficiency from the perspective of competitiveness and resource availability.

Latvia's main export sector is **forestry** (wood industry), which is heavily reliant on domestic resources. There has been an initiative asking to improve forest management practices and wood processing, so that forest resources are sustained and are able to add value to the raw materials.

Energy consumption standards and material standards have been identified for the **building sector**. Energy consumption reduction targets are set for public sector buildings. Eco-design, insulation, smart materials and smart houses are some of approaches promoted in the Latvian building sector to support this policy.

The **National Industrial Policy Guidelines for 2014-2020** (2011) tackles the need to reduce energy costs in processing industries, especially of those whose energy costs are high, particularly in wood, metal, food, and beverage-production sectors.

Material resource efficiency is addressed through various aspects of consumption in some policies.

Priority consumption categories

Energy consumption in buildings and households is the main consumption sector addressed by specific policies, as less energy consumption reduces the need for raw energy resources. It is addressed through energy-saving measures related to use in various daily activities, such as indoor lighting, heating and the use of electric appliances.

Some activities have been implemented in the **transport sector** to encourage people to reduce fuel consumption in private transport or to shift to other modes of transport. This includes, for example, the introduction of electric cars and developing the charging infrastructure, teaching *economic car driving* that consumes less fuel, providing park-and-ride sites and bicycle rental, extending bicycle routes and promotion of public transport by introducing electronic tickets.

Some resource efficiency measures can be identified in **food consumption**, including the promotion of organic farming products, use of green public procurement, standards promoting healthy eating that have already been introduced for school canteens, food-waste management by supermarkets, and rising of awareness among individuals and households in terms of behavioural changes.

Policy framework

National strategies or action plans for material resource efficiency

The **Sustainable Development Strategy of Latvia until 2030** (2010), being the most important document in the national policy planning hierarchy, addresses resource efficiency in three chapters.

The chapter on *Innovative and eco-efficient economy* analyses energy efficiency and intensity. As regards energy efficiency, a set of measures related to infrastructure improvements and savings in the housing sector, including energy efficiency of buildings and consumption patterns of energy, are mentioned. Innovation is mentioned in respect to renewable energy. The chapter also considers

environmentally friendly and efficient transport. In particular emphasizing development of public transport and efficient transport of goods. Energy efficient transport policy is linked to pollution and waste issues. Special attention is paid to the use of biomass in cogeneration plants.

In the chapter on *Nature as capital for future*, the issue of resources is addressed from the renewable and non-renewable resources perspective, living nature resources and ecosystem services. Several instruments and initiatives are suggested to maintain natural capital, for example, green budget reform, market instruments, support of entities and technologies that are eco-innovative, and support of environmental awareness and education. A notion of capitalising natural assets (providing monetary values for resources and services) is introduced.

In the chapter on *Spatial development perspectives*, natural resources, which include forests, agricultural lands, mineral resources and water, are seen as specific rural assets which have to be used for local development. Emphasis is put on the efficient and sustainable use of resources, especially forests.

The **National Development Plan of Latvia for 2014–2020** (2012) emphasises the need for the rational and efficient use of domestic resources as a policy objective. It addresses resource issues from the perspective of competitiveness and productivity, calling for investment that increases resource efficiency and reduces the export of raw materials.

Furthermore, comprehensive energy efficiency is seen as a cornerstone of energy independence. The plan addresses energy efficiency of houses and public buildings, as well as mentioning municipal energy plans as an essential element of the country's energy policy. Transition to domestic renewable energy is stated as an essential shift.

Efficient use of natural capital and responsible and sustainable management of natural resources are addressed, emphasising need for the sustainable use of forest resources and agricultural land.

ENVIRONMENTAL POLICY

The **Environmental Policy Guidelines for 2014–2020** (2014) address resource efficiency in the chapter on *Subsoil mineral resources, waste and secondary materials*. The document considers the effective use of waste as a secondary material; criticises the insufficient recovery rate of materials and high volumes of landfilled waste. It calls for resource efficiency and innovation to solve these problems. Sorted waste collection, diverting secondary material from waste streams, and waste recycling and recovery are identified as priority directions for action.

In the chapter on *Water*, the main focus is on water quality, though few strategic directions are related also to efficient water consumption. For example, it shows that improvements of water supply infrastructure would reduce water losses and implementation of the user-pays principle would facilitate significant savings.

Climate change and air pollution sectoral policies address resource efficiency through supporting new technologies, green innovation and the use of renewable energy in energy production for heating and transport sector.

Protection of biological diversity as a resource is addressed through better planning and management practices, including sustainable (even certified) enviro-agricultural and forest practices.

The **State Waste Management Plan 2013–2020** (2013) sets tasks to facilitate resource efficiency through collection and separation of waste and the rational use of waste as a secondary material (reuse, recycling).

<http://polsis.mk.gov.lv/documents/4276> (in Latvian)

ENERGY POLICY

The **National Energy Development Guidelines for 2016–2020** (2016) are fully compliant with the EU's general policies in this field, particularly the EU Roadmap towards a low-carbon economy by 2050, as well as with the respective climate and energy targets set by relevant EU directives, most of which are complementary to resource efficiency objectives.

The national energy policy is primarily aimed at ensuring the state's energy security and sustainable energy. The latter means, among others things, increased energy efficiency, less material consumption, a decrease in energy intensity and, as result, a decrease in greenhouse gas emissions from energy production and consumption. Additionally it means increasing the share of renewable energy in gross final energy consumption.

TRANSPORT POLICY

The **Transport Development Guidelines 2014–2020** (2013) address resource use and energy efficiency. An increase in energy efficiency will be promoted through the implementation of a series of measures, for example, railway infrastructure improvements and electrification of railway lines; development of the transnational Baltic railway line; development of Riga International Airport's infrastructure, and improvement of road quality. One activity that could help reduce fuel consumption by motor transport and complement environmental goals is ensuring that the vehicle fleet conforms to the EU's technical and environment standards.

<http://polsis.mk.gov.lv/documents/4607> (in Latvian)

The **Electro-mobility development plan for 2014–2020** promotes less fuel consumption improving energy efficiency by facilitating use of electric cars and investing in the infrastructure for alternative fuels.

<http://polsis.mk.gov.lv/documents/4659> (in Latvian)

The **Latvian Railway Environmental Policy for 2012–2020** (2012) is targeted at the development of railways as the most environmentally friendly mode of terrestrial transport. That covers issues of energy efficiency and railway impact reduction on natural, land and landscape resources. The sustainable management of natural resources is one of the tasks set in the policy.

http://www.vda.gov.lv/doc_upl/Vides%20politika.docx (in Latvian)

Since 2013, the **Ship Energy Efficiency Management Plans** have been developed for ships of 400 gross tonnage and above (MARPOL requirement).

AGRICULTURE, FORESTRY, FISHERY AND RURAL DEVELOPMENT

The **Development Guidelines for Forestry and Related Sectors for 2015–2020** (2015) strive for internationally recognised sustainable forestry that is competitive and produces high added value – that implies certain aspects of resource efficiency.

<https://www.zm.gov.lv/mezi/jaunumi/meza-un-saistito-nozaru-attistibas-pamatnostadnes-2015-2020-gadam?id=5126> (In Latvian)

Policies in the **fishery sector** are targeted at developing the sustainable use of fish resources, protection and replenishment of fish stocks, and a reduction of anthropogenic impacts on the fishery.

The **Rural Development Programme 2014–2020** (2015) contributes to the achievement of goals that have a direct impact on resource efficiency in the agriculture, food and forestry sectors. The programme supports the efficient use of resources and resilience against climate changes through low-carbon practices in the agriculture, food and forestry sectors. The main activities relate to the implementation of measures for energy saving, use of renewable energy and processing of waste/residues from those sectors. Support is envisaged for activities which help to restore, conserve and improve ecosystems services related to agriculture and forestry, including the promotion of organic farming methods.

https://www.zm.gov.lv/public/files/CMS_Static_Page_Doc/00/00/00/68/59/LAP2014-2020_versija_2.2..pdf (in Latvian)

INDUSTRIAL POLICY

The **National Industrial Policy Guidelines for 2014–2020** (2011) do not recognise any material resource issues, though they address the need to reduce energy costs of processing industries.

<http://polsis.mk.gov.lv/api/file/file34401.doc> (in Latvian)

SCIENCE, EDUCATION

The **Smart Specialisation Strategy** (2013) aims to promote innovation capacity and the creation of a system that fosters and supports technological progress in the national economy. Its priorities, amongst others, include support to the knowledge-based bio-economy, smart materials and smart energy – all are expected to contribute to improvements in material productivity and efficiency.

<http://tap.mk.gov.lv/mk/tap/?pid=40291636>

The **National Science, Technology Development and Innovation Guidelines 2014–2020** (2013) stress the importance of increasing the number of qualified employees in natural sciences and engineering. This would provide needed knowledge and skills to address resource efficiency issues.

<http://polsis.mk.gov.lv/documents/4608>

The circular economy and closing material loops

The approach to closing material loops within Latvian policy is manifested through:

- application of **economic instruments** (natural resource tax and fees) and producer-responsibility schemes related to extraction and use of natural resources (materials);
- **mandatory targets** set by the State Waste Management Plan for 2013–2020 (2013) to ensure rational use of waste as a resource by returning it to the economy through reuse, recycling or in other useful forms, such as compost;
- **public financial support** for the development of waste collection and separation, as well as recycling capacity (infrastructure and technologies);
- **bio-economy concept** has been introduced in forestry (the Forestry Competence Centre has been established) and will also be promoted in agriculture and food industry;
- **public awareness rising** on sustainable consumption.

General policy objectives for material resource efficiency

The **Sustainable Development Strategy of Latvia until 2030** (2010) puts forward general objectives to be implemented in all sectors such as increased resource productivity and effective governance of the resources.

The **National Development Plan of Latvia for 2014–2020** (2012) sets two strategic objectives related to the resource efficiency:

- material and energy efficiency (under Priority: *Growth of national economy*);
- sustainable management of natural and cultural capital (under Priority: *Growth for regions*).

ENVIRONMENTAL POLICY

The **Environmental Policy Guidelines for 2014–2020** (2014) set several objectives related to resource efficiency:

- foster resource efficiency through (green) innovation that would allow diverting secondary material from waste streams, promote material reuse, waste recycling and recovery;
- ensure sustainable and rational use of water resources by, amongst others, reducing water losses in the centralised water supply systems;
- ensure preservation and recovery of natural resources: ecosystems and diversity of species;
- ensure sustainable use of soil, sub-soil and its resources;
- enhance the rational use of resources and new technologies to decrease emissions of air polluting substances from industry, transport and households;
- strengthen the role of market/economic instruments in resources management (especially in areas of mineral resources and waste management);

- enhance the effective and rational use of energy resources, supporting co-generation and use of renewable energy sources;
- enhance the energy efficiency of buildings – in heating and public lighting;
- develop environmentally-friendly transport infrastructure, especially public transport and promote use of renewable energy in the transport sector;
- reduce and stabilize total greenhouse gas emissions.

The **State Waste Management Plan for 2013–2020** (2013) sets the following objectives:

- prevention of waste generation by implementing waste prevention measures, applying best available technologies, increasing resources efficiency and promoting sustainable behaviour patterns, as well as rising public awareness on the issue;
- rational use of waste as a resource through support of recycling or the return of material in any other useful form, for example, as compost;
- reduction of the amount of waste sent to landfill.

ENERGY POLICY

The **National Energy Development Guidelines for 2016–2020** (2016) sets the following objectives:

- increased energy efficiency and intensity;
- increased share of renewable energy in gross final energy consumption;
- reduced greenhouse gas emissions.

TRANSPORT POLICY

The **Transport Development Guidelines for 2014–2020** (2013) set an overall goal for the transport sector that can be linked to the resource efficiency:

- a competitive, sustainable, co-modal transport system that ensures high quality mobility;
- increased energy efficiency, addressed as an indirect goal through other objectives.

The **Electro-mobility Development Plan for 2014–2020** aims at three essential goals, two of which are related to resource efficiency, namely:

- reduction of pollution and greenhouse gases;
- increase of energy efficiency.

By introducing the concepts of **eco-design**, **energy labelling** of products and **life-cycle analysis**, Latvia has stepped ahead in the promotion of innovation for resource and energy efficiency solutions. According to the EU regulations, specific requirements for product labelling and energy efficiency minimum parameters for household appliances, as well as some other resource consumption parameters, have been defined in the national regulatory acts.

AGRICULTURE, FORESTRY, FISHERY AND RURAL DEVELOPMENT

The **Development Guidelines for Forestry and Related Sectors for 2015–2020** has set goals that support resources productivity:

- sustainable and effective forest and forestlands management, including preservation of forest biodiversity;
- increased share of further processed forest production in exported wood production;
- development of new forest products with added value.

The **Rural Development Programme 2014–2020** (2015) contributes to the achievement of goals that have a direct impact on resource efficiency, namely:

- promotion of resource efficiency and support for resilience to climate change through a low-carbon economy in the agriculture, food and forestry sectors, among other, by promoting energy saving and energy efficiency measures, and use of renewable energy;
- restoration, conservation and improvement of ecosystems related to forestry and agriculture and related to sustainable production, specifically supporting organic farming and environmentally-sound gardening practices.

Institutional set-up and stakeholder involvement

Institutional set-up for material resource efficiency policies

Responsibility for resources efficiency is distributed among different ministries and subordinated bodies. Moreover, overall national long- and mid-term goals defined in the hierarchically higher documents will be integrated into sectoral policy planning.

The highest national-level authority for coordinating policy planning and state development is the **Cross Sectoral Coordination Centre** that is directly subordinated to the prime minister. It is responsible for drafting, supervising and monitoring of implementation of the long-term Sustainable Development Strategy and the mid-term National Development Plan.

The **Ministry of Environmental Protection and Regional Development** (MEPRD) is responsible for resource efficiency related to environmental sectors: waste management, natural resources and climate – all these fields encompass elements of resources efficiency. Additionally, MEPRD is responsible for green public procurement that implies essential elements of resource efficiency (life cycle analysis, etc.).

Subordinated to the MEPRD, the **Latvian Environmental, Geology and Meteorology Centre** is the main institution responsible for a unified environmental information system (data base) and national environmental reporting.

The **Ministry of Economics** (MoE) is responsible for national economic and energy policies. It develops policies for the building and energy sectors, renewable energy, energy efficiency and support for entrepreneurship and innovation.

The **Ministry of Transport** is responsible for sustainable and efficient transport policies for railways, road traffic (incl. road transport and traffic safety) and the maritime and aviation sectors.

The **Ministry of Agriculture** (MoA) is responsible for forestry, agriculture and fishery policies.

The **State Forest Service** is subordinated to the MoA, and is responsible for pursuing a unified forest policy in all Latvia's forests and implementing support programmes, aimed, in the long term, at ensuring sustainable forest management. The State Forest Service is also responsible for policies related to the game animals.

There are many overlapping issues related to resource efficiency. For example, issues of energy are closely linked to the climate policy, so collaboration between MEPRD and MoE in fields related to greenhouse gas emissions reduction is essential. Similar links between MEPRD and Ministry of Transport exist in the promotion of environmentally friendly transport policies and the development of electro-transport.

One of the issues for which nationwide coordinated activities have been implemented is energy efficiency. Policies and financial synergy came as a result of cooperation of the MEPRD, MoE and Ministry of Finances, the latter being the main authority for the supervision of EU funding.

The **Ministry's of Education and Science's** role is in terms of facilitating the incorporation of material /resources topics in study curricula and educational standards, as well as in providing support to research in priority fields, such as energy and material sciences.

Municipalities are responsible for numerous sectors of daily activity related to resource efficiency. The autonomous functions of local governments are, among others: to organise the provision of utilities (water and sewerage; supply of heat; management of municipal waste; collection, and purification of waste water); to look after public services and facilities, and the sanitary cleanliness of their administrative territory – buildings, reconstruction and maintenance of streets, roads and public squares; lighting of streets and other areas designated for public use; development and maintenance of green zones; control of collection and removal of waste; and the determination of procedures for the utilisation of public-use forests and waters. Additionally, municipalities are responsible for the application of green procurement that aims to save resources and minimise the impact of works, services and supplies on the environment.

Process to ensure stakeholder participation

A dialogue between governmental bodies (ministries) and stakeholders is built on the principles of information, consultation and participation. Requirements for public involvement are clearly articulated in the national legislation. A public-participation internet link is mandatory on each ministry's website, to publish information regarding participation opportunities, draft policies, legal acts, consultation results, etc.

Main stakeholder groups are represented in policy planning and the legislative drafting process through participation in **Consultative Boards**. These are mainly made up of representatives of professional associations or non-governmental organisations (NGOs).

Each ministry has created its own framework for consultative boards.

The Ministry of Environmental Protection and Regional Development, for example, has established several boards directly related to the material resource issue including the packaging management board and the water resources and technologies management board. Furthermore, according to the EU Water Framework Directive requirements, Consultative boards are established for all four river basin districts.

The cross-sectoral integration of interests in policy planning and legislation drafting is ensured by the Environmental Consultative Board – a body in which 20 representatives from different NGOs and professional association are elected via a transparent process. Apart from participation in this board, its members are delegated to represent the public in other commissions and bodies.

Similar examples exist in other ministries, for example, the Ministry of Economics has established a consultative board for biofuel development.

Another group of stakeholders in the field of material and resource efficiency is recycling and waste management companies, who use **lobbying activities** as their participatory mechanism. Information on the lobbyist and their specific interests are made public through ministries' websites.

Suggestions for international support mechanisms to exchange experience

As the issue of resource efficiency is an emerging one, few politicians have any experience or interest in it. It is, therefore, essential that resource efficiency is brought on to the political agenda of various governmental meetings and international events.

One of impediments is departmentalisation in policy planning, implementation and monitoring that seems to exist in many countries. If this is to be overcome, ministry officials (experts) need to develop the capacity to improve policy planning and ensure cross-sectoral integration. Regular (quarterly) webinars could be most effective in promoting cross-sectoral cooperation, though additional annual events at the EEA for experts from the EIONET network could also help.

Sharing of best practices is mostly necessary for the business sector – for this financial support for attending seminars and organizing field studies is recommended.

A need of methodological capacity has been identified and this might be improved by providing opportunities for academicians and students engaged in material efficiency issues. Study grants, support to thematic scientific events and special publications (magazines on resources, public management, etc.) could all be useful.

Sharing world practices. The cooperation between EU (EEA) and the Organisation of Economic Co-operation and Development (OECD) should be strengthened to bring the best examples from the world practices to EU Member States.

It is further suggested that research on resource efficiency should be included in the various assessments carried out by the OECD (environmental performance reviews, economic surveys, etc.) and other international organisations, with data support from Eurostat and analytical support from EEA. The results of such research could also be presented to EU Member States/the EIONET network.

There is also a need for regular resource efficiency publications by EEA (biannual or at least at the end of each EU programming period).

Continuation and expansion of the EEA website on resource efficiency.

Policy instruments

Policy instruments commonly used for material resource efficiency

In general, the most effective instruments that, in most cases, are used for promoting resource effectiveness are:

- economic instruments (fees, natural resource taxes, excise duties, tax exemptions);
- extended producer-responsibility schemes;
- licencing/permitting;
- investment – financing innovation and improvements in infrastructure and the use of modern technologies leading to higher material resource efficiency;
- public awareness rising and environmental education activities.

In the waste management and other sectors, complementary economic instruments are used to improve resource efficiency. Examples of economic instruments include: fees for waste management and waste disposal and a natural resources tax – the last allows the implementation of the polluter-pays principle and stimulates producer responsibility.

The natural resources tax (NRT) Law states that *“the purpose of the natural resources tax is to promote economically efficient use of natural resources, restrict pollution of the environment, reduce manufacturing and sale of environment polluting substances, promote implementation of new, environment-friendly technology, support sustainable development in the economy, as well as to ensure environmental protection measures financially”*.

The natural resources tax has undergone significant change since 1991 (revisions take place on average once in two–three years). The latest changes took place in 2014 when rates were increased by, on average 20 %–25 % for mineral resources (peat, quartz sand and sandstone), water pollution (total phosphorus), air pollution (particulate matter and carbon dioxide), waste disposal, packaging, goods harmful for the environment, and, for first-time, natural resource tax was introduced for permanent vehicle registration in Latvia. Additionally, two new natural resource tax objects were introduced in 2014: on pyrotechnic devices and the use of water for electricity production (in small hydroelectric power stations, which total installed capacity is less than 2 MW). Tax rates on

landfilling municipal, construction and industrial waste were increased considerably: for municipal waste from EUR 1.78 per tonne in 2009 to EUR 12 per tonne in 2014. Further gradual increase is envisaged, starting from 2016.

The main approach in setting a NRT is based on the hazardousness principle, although the material-recovery approach now receives equal importance, for example by increasing landfill rates for construction and demolition waste.

More information:

http://www.vvc.gov.lv/export/sites/default/docs/LRTA/Likumi/Natural_Resources_Tax_Law.doc

In relation to energy sector, changes took place in **excise duties** in 2014. Excise duty on liquefied petroleum gas (LPG) was increased in 2014 from EUR 128.06 per tonne to EUR 161. As of 1 July 2015 the excise duty on gas oil used in agricultural production and cultivation of agricultural land was reduced to EUR 50 per 1 000 litres.

Savings in the water sector are encouraged by **water metering and pricing**. Water prices, among others, include a NRT, as well as purification and supply costs. The NRT for the extraction of surface water and groundwater is applied if the extraction of water exceeds 10 cubic metres a day or if more than 50 people are served. Extraction of water in amounts below 10 cubic metres a day is exempted from permitting and taxation. The NRT for extraction or use of any natural resources above a permitted volume or illegally extracted is calculated by applying the tax rate tenfold.

Producer responsibility schemes (PRS) are considered to be very effective. Exemptions from NRT provide incentives for the business sector to collect and further process packaging waste, disposable tableware and goods harmful to the environment (lubricating oils, oil filters, tyres, batteries and accumulators, WEEE and end-of-life passenger vehicles). Producers are eligible for tax exemption if they have signed a contract with Ministry of Environmental Protection and Regional Development and comply with recovery and recycling targets set in the relevant legislation. If companies fail to comply with the recovery and recycling targets, the tenfold NRT rate for the non-recovered or recycled amount is applied.

In order to extract or use natural resources or emit pollution into the environment, a business operator must obtain a permit, licence or C category polluting activity certificate, as laid down in the laws and regulations regarding environmental protection and the use of the subterranean environment. The NRT is calculated in accordance with rates for each unit of extracted or used natural resource and within the specified volume limits in a permit. The NRT for soil is calculated and paid if the soil is sold.

An important policy instrument for supporting resources efficiency is **public investment** in waste collection and sorting infrastructure and recycling capacities/technologies. Latvia has equipped more than 3 000 separate waste collection points and 65 sorting fields across the country. An additional 1 000 collection points and 19 fields are needed to ensure sufficient access to this service for everyone and all municipalities. In the previous EU funds planning period (2007–2013) more than EUR 15 million were invested in improving separate waste collection, additional to investments made for waste-sorting technological facilities. In the current planning period (2014–2020) it is envisaged that about EUR 5.5 million will be allocated to further improvement of separate waste collection in municipalities where service is currently insufficient. And EUR 35.8 million will be allocated for support to business operations related to recycling, recovery and the preparation of material for these purposes.

Information campaigns and public awareness rising activities have proved to be successful instruments for promoting energy efficiency in household appliances, energy efficiency and insulation of buildings, use of renewable resources for households, minimisation of waste, separation of waste and the reuse of materials. Integrating waste-related topics into the general school curriculum and implementing waste management companies' educational strategies proved to be a useful approach for involving large audiences in discussions and activities on wise and sustainable material use.

Examples of good practice

1. Campaign "Let's live warmer"

Latvia had chosen to reach energy efficiency targets using complementary measures. One of central activities implemented since 2008 is related to energy efficiency improvement in the building sector.

The situation with Latvian housing stock was similar to other Eastern and Central European countries. Around 63 % of all households are in multi-family houses (block houses), and in the capital city, Riga, this figure reaches 85 %. In 2009 there were more than 39 000 multifamily buildings in Latvia, of which more than 60 % were built between 1960 and 1995, when building standards and energy costs were low. As a result the insulation quality of buildings was insufficient and the housing stock in general needed renovation.

In spring 2009, an aid programme, *Improvement of Heat Insulation of Multi-Apartment Residential Buildings*, funded by the European Regional Development Fund (ERAF), was started in Latvia with the objective to improve energy efficiency in multi-apartment residential buildings. Given the great potential for energy efficiency gains in the housing sector and the rather high level of ERAF co-financing (up to 60%), it was expected that the response rate from the apartment owners would be high. However, implementation of the programme demonstrated that availability of funding and potential for energy efficiency benefits alone are not enough for success, and an innovative approach is needed.

The Ministry of Economics initiated a nationwide campaign, *Let's live warmer*. A need of such campaign was justified by a general lack of knowledge about the benefits of energy-efficiency measures and a lack of cooperation among stake-holders – apartment owners, construction companies, municipalities and financing bodies. The key objectives of the campaign were to raise awareness of energy-efficiency among the general public and decision makers, and activate apartment-owners to renovate their homes. To promote campaign, a memorandum of understanding for cooperation was signed between ministry and numerous stake-holder organisations representing various sectors.

During the four and a half years of the campaign, a large number of conferences, seminars, workshops and discussions were held at national, regional and local levels, and a range of publications have been issued. To ensure a wider participation, seminars were organised not only in the capital and regional centres (9 cities), but also in local centres (21 towns). All seminars included share of experience from apartment owners who already had renovated their buildings. An emphasis was placed both on the benefits from energy-efficiency activities and the quality of implementation, as well as on the application procedure for ERDF funding. Local municipalities were

heavily involved in the promotion of the seminars to ensure wider participation. The impact of these activities can be observed over a longer period of time, which is proved by a sudden increase in the number of project applications for ERDF funding from numerous towns, months after the seminars took place.

Riga Technical University cooperated in organising more advanced level seminars for building professionals, energy auditors and building managers. These seminars were broadcasted online. One of the campaign's activities was participation in trade fairs and exhibitions targeted at both apartment owners and industry. The fairs provided a meeting place for all parties involved in 2011, and in spring 2012 they provided the first information about ERDF funding.

An online map of renovated buildings was created in 2011, providing information on all buildings that have received ERDF funding, showing the cost of energy efficiency measures, the achieved energy savings and implemented insulation measures, as well as basic information about the building – construction year, number of apartments, and type of the building. This provided an excellent opportunity for apartment owners to find information about buildings that are similar to theirs and compare the costs and energy savings. This was the first public campaign in Latvia that used social media to such a great extent, establishing two-way communication channels on social networking sites (Twitter, Facebook, YouTube and Vimeo) and engaging in direct communication with citizens.

The campaign was recognized as one of the most successful initiatives by the EU competition *Sustainable energy for Europe* in 2013, and was awarded an Energy Globe in 2015.

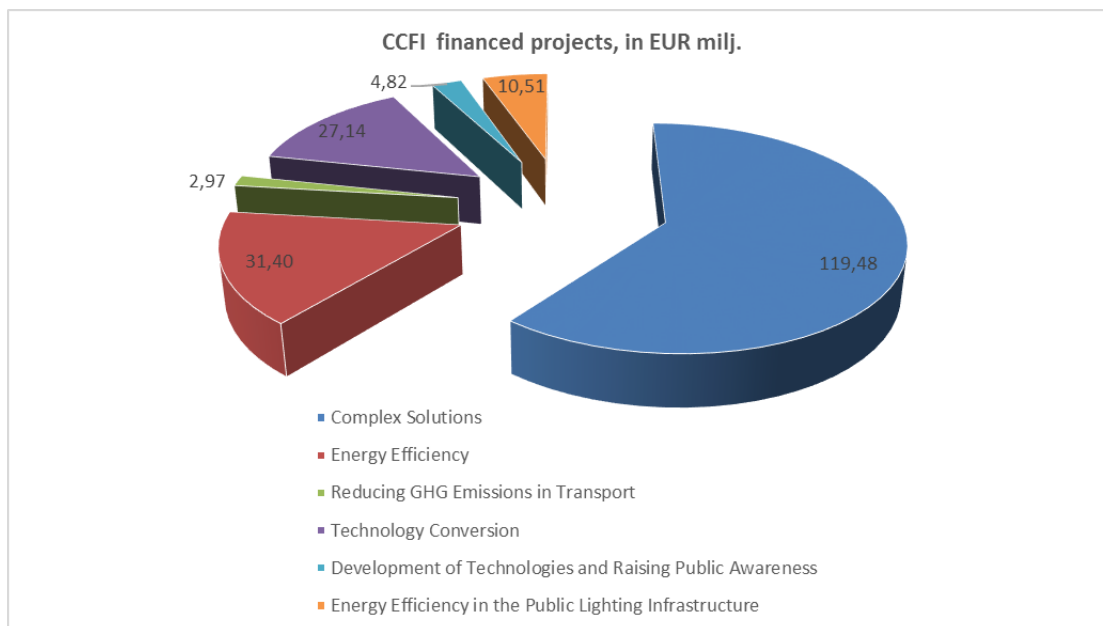
<http://www.energyglobe.info/>

2. Climate Change Financial Instrument

The Climate Change Financial Instrument (CCFI) is a Latvian state programme that is globally known as a green investment scheme. The programme is run by the Ministry of Environmental Protection and Regional Development.

The aim of the CCFI is to promote the prevention of the global climate change by reducing greenhouse gas emissions. Most of activities supported by the CCFI are complementary to targets for renewable energy, energy efficiency and resources efficiency in general. The CCFI provides co-financing for projects aimed at: increasing energy efficiency; developing technologies to reducing greenhouse gas emissions; the conversion technology from fossil fuels to renewable energy resources; rising public awareness regarding the importance of and possibilities for greenhouse gas emission reduction; increasing of energy efficiency in the lighting infrastructure; and reducing of greenhouse gas emissions from the transport sector.

The total value of 2 614 implemented projects is EUR 325 million, to which the CCFI contributed EUR 196 million. The allocation of funding by activity is shown in the figure below.



One of a total of 16 CCFI tenders was devoted to the increase of energy efficiency in municipal buildings; projects covered almost half of all Latvian municipalities; and energy efficiency measures were implemented in 222 buildings of which 97 were schools, 63 kindergartens, 62 administrative buildings, culture centers, health institutions, libraries, police offices, etc. It was expected that the projects would lead to emission reductions of 10 799 tonnes of carbon dioxide per year, and the actual emission reduction in 2014 was 16 868 tonnes of carbon dioxide.

Another tender was devoted to use of renewable energy resources in household sector. Implementation of 1761 projects resulted in installation of new technologies: heat pumps (35% of projects); solar collectors (33%); biomass boilers and heating systems (23%); and technologies producing electricity (9%). CCFI co-financing rate of those projects was 50%.

Targets and indicators

Targets for material resource efficiency

The ***Sustainable Development Strategy of Latvia until 2030*** (2010) defines the following indicators and targets, which are related to the broader concept of resources efficiency, to be achieved by 2030:

- energy intensity in economy - gross domestic energy consumption against GDP: 150 kilograms of petroleum equivalent per EUR 1000 of GDP;
- share of renewable resources: 50 % of energy produced from renewable sources in the total gross final energy consumption;
- 80 % of collected waste to be recycled;
- resource productivity – EUR 710 per tonne of DMC;
- greenhouse gas emissions in 2030: 47 % of emissions against the base year (1990);
- total state emissions to air – specific targets for each polluting substance;
- 18 % of Latvia’s territory to achieve specially protected nature area status
- agricultural lands maintained biologically (% of total agricultural lands managed) – 15 % of managed agricultural lands under organic farming;
- managed agricultural lands to make up 95 % of total agricultural lands;
- forest coverage – to reach 55 % of total territory;
- ecological footprint – below 2.5 global hectares per inhabitant (holistic reduction of all kinds of resources calculated as an integrated indicator);
- asphalt (black) coverage for roads (%) – 50 % coverage for local roads and 100 % for regional roads; better road surfaces reduce the need for gasoline, maintenance materials/costs, maintenance of cars; thus contributing to resource efficiency.

There are also intermediary targets (for 2015, 2017 and 2020) for most indicators and they are reflected in mid-term sectoral policies (described elsewhere in this report).

The **National Development Plan of Latvia for 2014-2020** (2012) defines the following mandatory targets and indicators related to resource efficiency:

- increase in resource productivity to EUR 540 per tonne of resources in 2017, and EUR 600 per tonne of resources in 2020 (measured as GDP/DMC));
- increase in the proportion of energy produced from renewable energy resources in total gross energy consumption to at least 40 % in 2020;
- reducing energy consumption in generating GDP to 280 kilograms of petroleum equivalent per EUR 1 000 of GDP in 2020 and less than EUR 150 in 2030;
- reducing intensity of greenhouse gas emissions in the economy (measured in tonnes of carbon dioxide equivalent per EUR 1 423 (²) of the GDP) to EUR 1 130 in 2020 and below EUR 1 070 in 2030.

² Equivalent to LVL 1 000 (the LVL was the national currency before the introduction of the EUR)

These targets create a basis for sectoral policies and implementation plans, particularly in the fields of energy and climate change. Additionally, the plan envisages support for research projects in priority fields that may contribute to the use of innovative materials and technologies, the sustainable use of local resources, and energy.

The **Environmental Policy Guidelines for 2014–2020** set mandatory targets and indicators to be reached by 2020 that stem from and comply with EU legislation, as well as international obligations of Latvia. They are:

- ensured carbon dioxide sink in the forestry sector – 16.3 million tonnes of carbon dioxide equivalent (United Nations Framework Convention on Climate Change obligation)
- areas of territories with agro-environmental measures reach 80 000 hectares;
- proportion of agricultural land using organic farming methods to reach 12 %;
- water losses in centralised water supply systems reduced to 5.5 % of the total amount of water supplied to the system;
- 100 % of groundwater bodies to remain in a good status, meaning that both chemical and quantitative statuses shall be good, and water abstraction volumes not cause depletion of resources.

Resource efficiency related mandatory **targets for the waste management sector** are defined separately in policies or regulatory acts:

- by 2020, the preparation for re-use and recycling of waste materials, such as paper, metal, plastic and glass from households (at least), and possibly others if these waste streams are similar to waste from households, will be increased to a minimum of 50 % overall by weight;
- by 2020, the preparation for re-use, recycling and other material recovery, including backfilling operations using waste as a substitute for other materials, will be increased to a minimum of 70 % by weight;
- reduce the amount of biodegradable municipal waste going to landfill after 16 July 2013 to 50 % of the total amount (by weight) of biodegradable waste produced in 1995, and further reduced to 35 % by 16 July 2020;
- by 31 December 2015, reach the 60 % (by weight) recycling and recovery target for packaging waste and reach the following minimum targets (by weight) for individual materials: 65 % for glass, 83 % for paper and cardboard, 50% for metal, 41 % for plastic and 29 % for wood;
- by 31 December 2015, reach the 55 % (by weight) recycling target for packaging waste and reach the following minimum targets (by weight) for individual materials: 60 % for glass, 60 % for paper and cardboard, 50% for metal, 22.5 % for plastic and 15 % for wood;
- by 01 January 2015 the reuse and recovery of all end-of life vehicles will reach at least 95 % by an average weight per vehicle and year;
- by 01 January 2015 the re-use and recycling of all end-of life vehicles shall be increased to at least 85 % by an average weight per vehicle and year;
- ensure that by 13 August 2016 the collected amount of WEEE from private households will reach 4 kilograms per inhabitant per year;
- by 14 August 2016 increase collection rate of WEEE to 40–45 % by an average weight per appliance that was placed on the Latvian market in the last three years;
- by 14 August 2021 increase the collection rate of WEEE to 65 % by an average weight per appliance that was placed on the Latvian market in the last three years or by 85 % of all WEEE produced in Latvia;

- Ensure recovery and recycling rates in compliance with Annexes I, III of Directive 2012/19/EK;
- By 26 September 2016 collect 45 % of waste portable batteries and accumulators by average weight of amount sold in Latvia in last 3 years.

The **National Energy Development Guidelines for 2016–2020** (2016) define the following indicators and mandatory targets related to the resource efficiency for 2020:

- share of renewable energy (% of energy produced from renewable resources in total gross energy consumption) – 40 %;
- share of renewable energy (% of gross energy consumption from transport) – 10 %;
- reduction of greenhouse gas emissions per fuel or energy unit supplied by 2020 by 6% compared to 2010;
- energy efficiency targets comply with the EU Energy Efficiency Directive (2012/27/EK);
- reduction of average energy consumption for heating by 50% compared to 2009 (when it was 202 kWh/m² (aspirational target));
- reduction of energy intensity to 280 kilograms of petroleum equivalent per EUR 1 000 of GDP in 2020;
- reduction of greenhouse gas emissions – limiting an increase of emissions to 17 % (compared to 2005) in the non-emissions trading system sector (non-ETS) and limiting total country's greenhouse gas emissions to 12.16 million tonnes of carbon dioxide equivalent in 2020.

Indicators to monitor the use of materials and resource efficiency

Monitoring of material use and resource efficiency in Latvia is based on Eurostat-derived material flow accounting (MFA) indicators presented, for example, in the resource efficiency scoreboard.

The **Central Statistics Bureau** (CSB) collects data for material flow accounts according to Regulation Nr.691/2011. Data are available for 1995-2014.

Data on domestic extraction are collected by several institutions and summarized by the CSB in national statistical reports.

Data are collected by: the CSB (on agricultural production and fish catch), the State Forest Service (on forest felled stock and game animals killed), and the Latvian Environment, Geology and Meteorology Centre (on mineral resources). Import and export data by material categories are compiled from CSB external trade data.

Resource efficiency indicators are calculated from material flow data using the Eurostat methodology: resource productivity (GDP/DMC) in EUR per kilogram of material, DMC per person in tonnes.

Information is available publicly from the following sources:

- the **CSB website**;
data on domestic extraction and consumption, Import and export by material category, DMC by material category (biomass, non-metallic minerals, metal ores, fossil energy materials); resource productivity (GDP/DMC) – the Eurostat approach is used;
<http://www.csb.gov.lv/en/dati/statistics-database-30501.html>
and for material flows:
http://data.csb.gov.lv/pxweb/en/vide/vid_e_ikgad_vid_e/?tablelist=true&rxid=a79839fe-11ba-4ecd-8cc3-4035692c5fc8 – the Eurostat approach is used;
- the CSB's annual publication, *Environmental indicators in Latvia*, presents data on resource productivity (GDP/DMC), domestic material consumption (DMC) and direct incoming flows of material per person – the Eurostat approach is used.
http://www.csb.gov.lv/sites/default/files/nr_32_vides_raditaji_latvija_2014_15_00_lv_en_0.pdf (in English)
- in **EUROSTAT database**
- **Monitoring report on indicators**
http://www.pkc.gov.lv/images/MP_zinojums/MPzinP_07092015_Indikatoru.pdf (in Latvian)

This report provides an assessment of indicators that are defined in the Sustainable Development Strategy of Latvia until 2030 and the National Development Plan for Latvia for 2014–2020.

Indicators related to resources productivity are:

- energy intensity in economics – gross domestic energy consumption against GDP (kilograms of petroleum equivalent per EUR 1 000 of GDP);
- share of renewable energy in gross domestic final energy consumption (%);
- share of recycled waste (% of waste collected per year);
- productivity of use of natural resources (GDP/DMC measured in EUR/tonne of resources);
- greenhouse gas emissions per year (against amount of greenhouse gas emissions in the base year, 1990)
- share of specially protected nature areas (% of the state territory);
- share of areas managed using organic farming methods (% of utilised agricultural land);
- forest cover (area of forests, % of the state territory);
- ecological footprint (global hectares per inhabitant) – used as a strategic indicator

These indicators are regularly monitored and reported to the government and made available to the public. The latest *Monitoring report on indicators* was produced in 2015.

Optional questions

Which way should resource efficiency go in the future?

Latvia is a small country with limited production industry, although, a shift from waste management towards resource management has to be considered. In addition, high resource efficiency potential lies in the change of household and public consumption practice.

It is planned to access resource efficiency and to evaluate potential increase within extraction industry (using earth minerals, water) and forestry.

One of the priorities for the nearest future within the global development context is sustainable use of food resources and actions, focused on prevention of food waste.