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NATIONAL ENERGY EFFICIENCY ACTION PLAN 2008–2016

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Summary

As a Member State of the European Union, Slovenia is aware of the great importance attached to achievement of the EU's strategic objectives in relation to energy and to reducing greenhouse gas emissions. Increasing energy end-use efficiency in all sectors constitutes an important potential factor in reducing greenhouse gas emissions; in the EU, it will cover 40% of the entire reduction in greenhouse gas emissions required to meet obligations under the Kyoto Protocol). In addition, increasing energy efficiency also contributes to an increase in the reliability of energy supply, economic competitiveness, regional development, employment, etc. In this connection, the European Council meeting held in March 2007, at which, among other things, a number of ambitious targets for 2020 were adopted concerning reductions in greenhouse gas emissions, an increase in use of renewable energy sources and improvements in energy efficiency, constitutes an important milestone.

Back in the 1990s, Slovenia prepared frameworks for the inclusion of measures relating to efficient energy use and renewable energy sources (RES) in strategic energy documents; at the same time, it commenced the preparation of a suitable climate policy. The National Energy Programme was adopted in 2004. It set out targets for efficient energy use, and also provided the basis for the 'Sustainable Energy' priority, which is part of the Operational Programme of Environmental and Transport Infrastructure Development 2007–2013, 85% of which will be financed from the Cohesion Fund.

The National Energy Efficiency Action Plan 2008–2016 (NEEAP) was drawn up pursuant to Article 14 of Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services, and repealing Council Directive 93/76/EEC (hereinafter: Directive 2006/32/EC). This is the first of three action plans. The remaining two have to be drawn up in 2011 and 2014.

Directive 2006/32/EC requires that Member States achieve a 9% saving in final energy consumption in the ninth year of application of the Directive (i.e. from 2008 to 2016); earlier activities initiated from 1995, and in special cases from 1991, may also be taken into account. The average annual use in the most recent five-year statistical period, excluding the use of fuels in installations involved in the greenhouse gas emission allowance trading system, is taken as the starting point for determining the target saving in end-use. The 2001–2005 period was taken as the starting point for final energy consumption, giving a figure of 47,349 GWh a year.

On the basis of the NEEAP, Slovenia is to achieve cumulative savings of at least 9% in relation to the starting point for final energy consumption in the 2008–2016 period, or at least 4,261 GWh. Savings are to be achieved by means of various sectoral-specific, horizontal and multisectoral measures in all sectors (households, general consumption, industry and transport). In actual fact, greater cumulative savings in final energy consumption will be achieved since, under the NEEAP, a range of measures will also be carried out, primarily of a horizontal nature, whose effects will be capable of being

clearly evaluated on the basis of a uniform methodology to be drawn up at the EU level.

The NEEAP does not take into account energy savings which are the result of measures to improve energy efficiency carried out in previous years, but not before 1995, and which have long-term effects (so-called earlier activities), since the Action Plan envisages that it will be possible to achieve the targets by implementing the instruments it proposes. Energy savings resulting from the implementation of earlier activities in the 1995–2007 period will be taken into account only in the event that the targets set out in the NEEAP are not reached.

The NEEAP rests on the implementation of 29 sectoral, multi-sectoral and horizontal instruments that will ensure implementation of the measures proposed in Directive 2006/32/EC, Annex III. A large number of barriers will be removed by these instruments; these barriers are of an institutional, legislative, administrative, economic, financial, personnel nature, and also relate to awareness and information provision, etc.

The NEEAP was drawn up in accordance with the requirements of Directive 2006/32/EC on the preparation of Member States' first energy efficiency action plan, and with the instructions given by the European Commission in the *'Template: National Energy Efficiency Action Plan 2007' document.*

The set of **energy efficiency improvement instruments in the residential sector** is presented in Chapter 4.1. Energy use in the residential sector has, in recent years, been marked primarily by a rapid increase in electricity use, where the efficient energy use potentials lie in energy use for heating as well as in electricity use. In this sector there is a range of cost-effective efficient energy use measures; however, their implementation is hindered by a great many barriers, primarily financial, to the provision of funds for investments and for informing users of the possibilities and benefits of efficient energy use. The proposed set of instruments is therefore targeted so that opportunities for efficient energy use in this sector are exploited as fully as possible. The package of financial incentives covers four programmes: energy-efficient renovation of buildings and sustainable building construction, energy-efficient heating systems, efficient electricity use, and the efficient energy use for low-income households scheme. Promoting efficient energy use in the residential sector is also supported by horizontal measures. These are described in Chapter 5.

The set of **energy efficiency improvement instruments in the tertiary sector** (public sector, services sector, small business, agriculture) is presented in Chapter 4.2. In this sector too there has been a marked and problematic rise in electricity use, alongside a lack of interest in implementing efficient energy use projects. This set of instruments includes financial incentives for the energy-efficient renovation of buildings and the sustainable construction of buildings, energy-efficient heating systems, and efficient electricity use. Instruments have also been prepared in the NEEAP relating to the public sector, where one important support instrument is the implementation of 'green public procurement'. Pursuant to Article 5 of Directive 2006/32/EC, the NEEAP sees the public sector as fulfilling an exemplary role in the implementation of measures to

increase energy efficiency. In the tertiary sector as well, the promotion of efficient energy use is supported by multisectoral and horizontal measures. These are described in Chapter 5.

The set of **energy efficiency improvement instruments in industry** (Chapter 4.3) is oriented towards the co-financing of efficient electricity use measures for various technologies (energy-efficient electrical motors and frequency converters for the regulation of engine revolutions, energy-efficient pumps and ventilators, energy-efficient systems for the preparation of compressed air, energy-efficient lighting).

The set of **energy efficiency improvement instruments in the transport sector** is presented in Chapter 4.4. In recent years the transport sector has been marked primarily by rapid growth in road freight transport (chiefly transit), a large increase in the number of private cars, and the predominance of short-distance journeys and the consequent major decline in public transport. The proposed instruments are therefore targeted towards the resolution of these key problems. They can be condensed into four substantive areas, as follows: the promotion and competitiveness of public transport; promotion of sustainable freight transport; an increase in the energy efficiency of private cars; and the construction of cycle paths and the promotion of cycling. The construction and modernisation of the existing infrastructure (chiefly the rail and road networks) is a key condition for achievement of the desired effects in the area of public transport and sustainable freight transport. The proposed measures are indispensable additional activities for the establishment of the required competitiveness and intermodality of freight transport, while educating users and making them aware can have an important effect on changing established transport patterns and habits.

The **set of multisectoral and horizontal energy efficiency improvement measures** in general consumption and industry (Chapters 5.1 and 5.2) includes those measures that can have an effect on all or at least two sectors. Through their activities, multisectoral and horizontal measures are oriented towards general consumption (residential sector, public sector, services and small business) and industry, but do not cover the transport sector (with the exception of the payment of excise duty on fuels). This set of instruments is condensed into four substantive groups, as follows: legislative instruments (entry into force or amendment of legislation), financial instruments (duties and prices), other instruments (promotional and informative) and voluntary agreements (exemption from the payment of duties). These measures, which are oriented solely towards an individual sector, are presented in the sector-specific chapters on measures.

Article 5 of Directive 2006/32/EC requires of Member States that the public sector fulfil an exemplary role in the implementation of measures to increase energy efficiency. The NEEAP envisages the implementation of the following measures in the public sector, in addition to energy rehabilitation and the sustainable construction of public buildings, in accordance with Annex VI of the Directive: the use of financial instruments for energy savings, such as energy performance contracting, the purchase of energy-efficient equipment and vehicles, the purchase of equipment that has energy-efficient consumption in all modes, including standby mode, and the purchase or rent of energy-

efficient buildings. An overview of the instruments aimed specifically at the public sector is given in Chapter 6.

Under Article 7 of Directive 2006/32/EC, Member States must ensure that **information on energy efficiency mechanisms and financial and legal frameworks** adopted with the aim of reaching the national indicative energy saving target is transparent and widely disseminated to the relevant market actors. These measures are included in the set of multisectoral and horizontal energy efficiency improvement measures – specifically in the 'Awareness-Raising, Information, Promotional and Training Programmes, Demonstration Projects' instrument and the 'Provision of Information to Consumers by Energy Supply Companies on Energy Use, Transparent Accounting and Other Information' instrument.

The list of all sectoral, multisectoral and horizontal instruments is presented in Table 1. In addition to the target energy saving across the whole period (2008–2016), the table also gives the interim target energy saving for 2008–2010 of 2.5% (or 1,184 GWh), the expected CO_2 emission savings, and an estimate of the public funds required for NEEAP implementation.

In addition to efficient energy use measures, the NEEAP also promotes the use of renewable energy sources and the cogeneration of heat and electricity. The production of heating from renewable energy sources, as promoted in this programme, will amount to 417 GWh a year. At the primary energy level, this means an increase in the share of renewable energy sources of 0.52 percentage points after implementation of the entire plan (assuming zero growth in primary energy consumption in the country). Energy savings made through the cogeneration of heat and electricity in the tertiary and residential sectors will, after implementation of the entire plan, amount to 102 GWh a year.

With the NEEAP, the target saving in final energy consumption will, in the 2008–2016 period, amount to at least 4,261 GWh (9% of baseline consumption); in the 2008–2010, savings will amount to 1,184 GWh (2.5% of baseline consumption). Of this, 97% of the energy saving will be made by means of measures for the efficient use of fossil fuels, electricity and district heating, while the remaining 3% will be made by means of measures for the efficient use of renewable energy sources and savings resulting from the introduction of systems for the cogeneration of electricity and heating. With the implementation of the NEEAP, CO_2 emissions will be reduced by 1,147 kt.

The expected energy savings in the public sector after implementation of the NEEAP are 496 GWh. As a consequence, energy costs in this sector will be lower by at least EUR 22 million a year (at current energy prices).

EUR 380 million in public funds will be required for implementation of the NEEAP. This sum includes incentives for investment of between 15 and 40%. This means that the average specific costs of public funds should amount to EUR 5.9/MWh of saved final energy consumption and EUR 21.3/tCO_2 of saved greenhouse gas emissions.

The estimated overall investment costs, excluding investments in transport, amount to EUR 999 million. To this end it will be necessary to provide a further EUR 717 million

(the remainder of investments, amounting to between 60 and 85%): EUR 534 million in private funds and EUR 183 million in state and local community budget funds earmarked for the rehabilitation of public buildings and similar purposes. The entire cost of the NEEAP is therefore around EUR 1,097 million. The ratio between the entire investment costs and incentives under the NEEAP is 3.5.

Table 1: Expected annual savings in final energy consumption, required public funds and reduction in CO_2 emissions.

No.	Instruments	Energy savings 2008-2010 [GWh]	Energy savings 2008–2016 [GWh]	Public funds 2008–2016 [EUR millions]	CO_2 emissions saving 2008–2016 [kt CO_2]
RESIDENTIAL SECTOR (Chapter 4.1)					
1	*Financial incentives for the energy-efficient renovation and sustainable construction of buildings*	84	210	33	54
2	*Financial incentives for energy-efficient heating systems*	17	53	37	67
3	*Financial incentives for efficient electricity use*	153	460	29	104
4	*Efficient use for low-income households scheme*	6	29	21	10
5	*Energy labelling of household and other appliances*	66	263		63
6	*Compulsory division and calculation of heating costs in multi-dwelling and other buildings according to actual consumption*		150		33
7	*Energy advice network for residents*(*)				
	TOTAL (1-7)	**326**	**1.165**	**120**	**331**
TERTIARY SECTOR (Chapter 4.2)					
8	*Financial incentives for the energy-efficient renovation and sustainable construction of buildings*	40	96	44	25
9	*Financial incentives for energy-efficient heating systems*	41	183	44	75
10	*Financial incentives for efficient electricity use*	138	525	21	121
11	*Green public procurement*(*)				
	TOTAL (8-11)	**219**	**804**	**109**	**221**
INDUSTRIAL SECTOR (Chapter 4.3)					

No.	Instruments	Energy savings 2008-2010 [GWh]	Energy savings 2008–2016 [GWh]	Public funds 2008–2016 [EUR millions]	CO_2 emissions saving 2008–2016 [kt CO_2]
12	*Financial incentives for efficient electricity use*	336	840	15	202
	TOTAL (12)	**336**	**840**	**15**	**202**

(*) – Savings in final energy consumption and CO_2 emissions are indirect

Table 1: Expected annual savings in final energy consumption, required public funds and reduction in CO_2 emissions (continued)

No.	Instruments	Energy savings 2008-2010 [GWh]	Energy savings 2008–2016 [GWh]	Public funds 2008–2016 [EUR millions]	CO_2 emissions saving 2008–2016 [kt CO_2]
TRANSPORT SECTOR (Chapter 4.4)					
13	*Promotion and competitiveness of public transport*	32	191	15	52
14	*Promoting sustainable freight transport*	33	294	10	79
15	*Increasing the energy efficiency of private cars*	33	198	6	53
16	*Constructing cycle paths and support facilities, and promoting cycling*	24	38	8	10
	TOTAL (13-16)	**122**	**721**	**39**	**194**
MULTISECTORAL MEASURES IN GENERAL CONSUMPTION AND THE INDUSTRIAL SECTOR (Chapter 5.1)					
17	*Regulations on the energy performance of buildings*	71	319		86

No.	Instruments	Energy savings 2008-2010	Energy savings 2008–2016	Public funds 2008–2016	CO_2 emissions saving 2008–2016
		[GWh]	[GWh]	[EUR millions]	[kt CO_2]
18	*Requirements for the minimum energy efficiency of products*(*)				
19	*Co-financing of implementation of energy audits* (*)				
20	*System of guaranteed electricity purchase prices*	11	102	23	20
21	*Contractual reduction in energy costs* (*)				
22	*Energy consumption management programmes for final customers (DSM)*	92	279	15	84
	TOTAL (17-22)	**174**	**700**	**38**	**190**

(*) – Savings in final energy consumption and CO_2 emissions are indirect

Table 1: Expected annual savings in final energy consumption, required public funds and reduction in CO_2 emissions (continued)

No.	Instruments	Energy savings 2008-2010 [GWh]	Energy savings 2008–2016 [GWh]	Public funds 2008–2016 [EUR millions]	CO_2 emissions saving 2008–2016 [kt CO_2]
HORIZONTAL MEASURES IN GENERAL CONSUMPTION AND THE INDUSTRIAL SECTOR (Chapter 5.2)					
23	*Awareness, information, promotional and training programmes, demonstration projects (*)*			30	
24	*Education programmes*				
25	*Provision of information to consumers on energy use, transparent accounting and other information (*)*				
26	*Environmental tax for air pollution caused by CO_2 emissions (*)*				
27	*Excise duties on fuels and electricity (*)*				
28	*Exemption from the payment of environmental tax on air pollution caused by CO_2 emissions*	7	32	1	9
29	*Financial incentives to support R&D and pilot projects*				
	TOTAL (23–29)	**7**	**32**	**31**	**9**
30	***TOTAL (1–29)***	**1184**	**4.261**	**352**	**1.147**
	Costs of managing and implementing the NEEAP (8% of no. 30)			**28**	
	Total NEEAP costs			**380**	
	Target savings in final energy consumption 2008-2010 (2.5 %)	**1184**			
	Target savings in final energy consumption 2008-2016 (9%)		**4.261**		

(*) – Savings in final energy consumption and CO_2 emissions are indirect and will be evaluated in accordance with a methodology to be drawn up by the EU.

Table 2: Effects of energy efficiency improvement instruments in the public sector

Instruments	**Energy savings 2008-2010 [GWh]**	**Energy savings 2008–2016 [GWh]**
Public sector (Chapter 6):		
8) Financial incentives for the energy-efficient renovation and sustainable construction of buildings	25	70
9) Financial incentives for energy-efficient heating systems	64	183
10) Financial incentives for efficient electricity use	96	243
11) Green public procurement (*)		
TOTAL Public sector	**185**	**496**

(*) – Savings in final energy consumption are indirect and will be evaluated in accordance with a methodology to be drawn up by the EU.

1 Introduction

Obligations under Directive 2006/32/EC on energy end-use efficiency and energy services

As a Member State of the European Union, Slovenia is aware of the great importance attached to achievement of the EU's strategic objectives in relation to energy and to reducing greenhouse gas emissions. Increasing energy end-use efficiency in all sectors constitutes an important potential for reducing greenhouse gas emissions; in the EU, this will cover 40% of the entire reduction in greenhouse gas emissions required to meet obligations under the Kyoto Protocol. In addition, increasing energy efficiency also contributes to an increase in the reliability of energy supply, economic competitiveness, regional development, employment, etc. In this connection, the European Council meeting held in March 2007, at which, among other things, a number of ambitious targets for 2020 were adopted concerning reductions in greenhouse gas emissions, an increase in use of renewable energy sources and greater energy efficiency, constitutes an important milestone.

A number of EU directives have been adopted addressing the issue of energy end-use efficiency. In addition to Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading, Directive 2002/91/EC on the energy performance of buildings, Directive 2005/32/EC establishing a framework for the setting of ecodesign requirements for energy-using products, directives on the energy-labelling of products and directives on the minimum energy efficiency of products and devices, Directive 2006/32/EC on energy end-use efficiency and energy services was adopted in December 2005 and relates to a considerable portion (around 85%) of final energy consumption. With this Directive, the entire field of final energy consumption is now regulated from the aspect of energy efficiency. Member States are obliged to transpose it into their domestic legislation by 17 May 2008.

Of all the directives relating to energy use, 2006/32/EC is undoubtedly the most important since it relates to energy use in all sectors: residential, tertiary, industrial and transport. Installations in undertakings involved in CO_2 emission allowance trading, the aviation industry, international maritime transport and armed forces (to the extent that application of Directive 2006/32/EC runs in contravention of the main purpose of the activity of the armed forces) are exempt. All forms of energy freely available on the market, including electricity, natural and liquefied petroleum gas, heating and cooling fuels (including district heating and cooling), coal, engine fuels and biomass are subject to the Directive.

The basic purpose of the Directive is the cost-effective increase in energy end-use efficiency, as follows:

- determining indicative targets, mechanisms, incentives and establishing suitable institutional, financial and legal conditions for the removal of market barriers that stand in the way of energy end-use efficiency;

- creating conditions for development and promotion of the energy services market and other measures to increase energy efficiency among energy users.

EU Member States must set a framework target that leads, via energy services and other measures to improve energy efficiency, to a cumulative energy saving of 9% over a nine-year period (2008–2016). Measures initiated from 1995, and exceptionally from 1991, may also be taken into account. The basis for determining the energy saving level is the average annual final energy consumption, which is the subject of the Directive, in the five years previous to the entry into force of the Directive. Energy savings start to be measured on 1 January 2008.

The Directive places special importance on the energy efficiency of the public sector, which is meant to fulfil an exemplary role in this regard. Member States must ensure that the public sector meets at least two of the following requirements:

- uses financial instruments for energy savings, such as energy performance contracting;
- purchases energy-efficient equipment and vehicles;
- purchases equipment that has energy-efficient consumption in all modes, including standby mode;
- performs energy audits and implements the resulting recommendations;
- purchases or rents energy-efficient buildings.

In addition to Directive 2006/32/EC, Member States undertake, among other things, to:

- ensure that energy distributors, system operators in the distribution network and retail energy enterprises provide a competitive range of energy services and energy audits, and that they contribute to energy efficiency funds;
- provide sufficient incentives and equal conditions for other providers of energy services;
- set up a system for training, certifying and/or accrediting providers of energy services, energy audits and measures to increase energy efficiency;
- eliminate legal barriers restricting the use of innovative methods of financing, such as contractual reduction in energy costs, and provide sample contracts for these instruments;
- eliminate, in the tariffs for transmission and distribution of energy, those incentives that increase unnecessarily the quantity of energy distributed;
- establish high-quality energy audit programmes aimed at determining possible measures to increase energy efficiency;
- ensure that all final customers of electricity, natural gas, district heating and hot sanitary water are equipped with individual meters that show the exact quantity and pattern of actual energy consumption;

- ensure that, through bills or other documents in energy accounting, information is provided to end consumers on the current actual prices and actual consumption of energy, on the characteristics of their energy consumption and on energy-efficient measures.

For the implementation of programmes and other measures to increase energy efficiency, Member States may establish energy efficiency funds that provide grants, loans, financial guarantees or other types of financing.

Member States shall appoint one or more independent authorities or agencies to supervise achievement of the targets, verify the energy savings made and provide reports thereon. The same authority may also take responsibility for energy-efficient public procurement.

Under Directive 2006/32/EC, Member States must, over a nine-year period (2008–2016), submit to the Commission three national energy efficiency action plans (NEEAPs) – the first in 2007, the second in 2011 and the third in 2014. All plans must contain measures to improve energy efficiency planned in such a way that the targets are reached and that they accord with the provisions relating to the exemplary role to be fulfilled by the public sector and to the provision of information and advice to end consumers. The second and third NEEAPs must include a thorough analysis and assessment of the previous NEEAP, set out the results relevant to achievement of savings in final energy consumption in the preceding period, and determine plans for additional measures to address each of the existing or expected deviations from the target.

Strategic framework for the drawing-up of the NEEAP

In 2004, with a view to ensuring reliability of supply, the competitiveness of the energy industry, greater energy efficiency and environmental sustainability, the National Assembly of the Republic of Slovenia adopted the **Resolution on the National Energy Programme** (ReNEP).[1] This is the basic strategic document, and one which, in accordance with the principles of the Energy Act (EA),[2] plans and coordinates the operation of those entities involved in energy management. Slovenia's ambitious targets for reducing greenhouse gas emissions by 8% by the 2008–2012 period, in line with the Kyoto Protocol, were taken into account when formulating the ReNEP. In the 2000–2015 period, the ReNEP provides for a reduction in energy intensity of 30% (or

[1] **Resolution on the National Energy Programme (OGRS, 57/04).**

[2] **Energy Act (OGRS, 27/07, EZ–UPB2). This act defines the principles, elements and formulation of energy policy. The goal of energy policy is to ensure the conditions for a secure and reliable supply of energy services to consumers according to market principles and the principles of sustainable development, taking into consideration the efficient use of energy, the economic exploitation of renewable energy sources and protection of the environment.**

2.3% a year) with an increase in GDP of 60%. Among the important aims of the ReNEP are an increase in end-use efficiency throughout the entire energy chain, from primary to useful energy, and an increase in the share of renewable sources in the primary energy balance.

The ReNEP sets out the following targets in relation to efficient energy use and renewable energy sources:

- an increase in energy end-use efficiency by 2010 in comparison with 2004:
  - in industry, general consumption and transport, by 10%;
  - in the public sector in particular, by 15%;
- a doubling in the share of electricity from cogeneration from 800 GWh in 2000 to 1600 GWh in 2010;
- an increase in the share of renewable energy sources (RES):
  - an increase in the share of RES in the supply of heat from 22% in 2002 to 25% in 2010;
  - an increase in the share of electricity from RES from 32% in 2002 to 33.6% in 2010;
  - a share of biofuels in transport of 5.75% in 2010.

In addition to energy and environmental policy objectives, the ReNEP is supposed to ensure realisation of the following:

- an increase in the competitiveness of the economy in those areas in which Slovenia has expertise and tradition;
- technological development in the area of construction and other materials, fixtures and fittings, energy technologies and systems, information technologies, etc.;
- the creation of new high-quality jobs;
- the acceleration of regional development, particularly as a result of greater use of renewable energy sources;
- a lowering of energy costs, leading to an increase in economic competitiveness (primarily in energy-intensive branches), and a lowering of the public finance burden;
- the active involvement of a large number of people in the implementation of activities to reduce energy use, leading to a lowering of their energy costs;
- improvements in people's living and working conditions, leading to a reduction in healthcare costs.

The ReNEP contains an estimate of the financial resources required for implementation of promotional programmes for efficient energy use and the production of heating from RES. This estimate is EUR 409 million in the 2004–2010 period, or an average of EUR

58.4 million a year. Financial resources for promoting electricity from renewable sources and cogeneration systems must be added to this figure; this will rise from EUR 17.5 million in 2002 to EUR 43.4 million in 2010.

Despite the fact that implementation of programmes to promote efficient energy use and renewable energy sources has otherwise been successful, it has been possible to achieve only 5–10% of the annual targets contained in the ReNEP; this is because of the limited budget funds that have been made available in recent years. The results of programme implementation were similar in 2007, with budget funds of EUR 3.6 million being made available for the purpose.

The Resolution on National Development Projects 2007–2023 (ReNRP)[3] is based on the Development Strategy of Slovenia (hereinafter: DSS). This Resolution contains key development investment projects in whose realisation the state will participate. These are projects whose implementation will be focused, at the national and regional levels, on development initiatives and funds that will lead to a development breakthrough on the part of the country as a whole. The aim of the Resolution is, by clearly setting down those national development projects that are to constitute a priority in the 2007–2023 period, to ensure that the objectives of the DSS are achieved more quickly. The document envisages the following in the area of energy: a sustainable energy and hydrogen economy project, modernisation of the electricity network, the construction of new energy capacities (Block 6 of the Šoštanj Thermoelectric Power Plant, a second block at the Krško Nuclear Power Station, the Kozjak pumping hydroelectric power plant, the construction of a natural gas storage facility and completion of the chain of hydroelectric power plants on the Spodnja Sava).

The **Sustainable Energy and Hydrogen Economy** project provides a long-term framework of support for sustainable energy development and the introduction of new technologies for efficient energy use and renewable energy sources. In addition to renewable sources and efficient energy use, the project also includes infrastructure for the hydrogen economy, new-generation vehicles and the promotion of technology development and transfer. At EUR 3,910 million, this project is ranked second among the 35 projects contained in the ReNRP in terms of size of the required investments from the public and, in particular, private sectors. The project encompasses support for research and development, the transfer of new technologies and promotion of an increase in the scope and quality of demand for modern technologies from investors from industry, the public sector and households, and for the provision of renewable energy sources.

A project group has been established for project implementation. It is made up of representatives of the relevant ministries and external members. Project sub-groups

[3] **Resolution on National Development Projects 2007–2023 (ReNRP), Government Office for Growth, Government of the Republic of Slovenia (adopted 12 October 2006).**

have been set up to address specific areas (efficient energy use, and renewable energy sources generally and in relation to transport and the hydrogen economy).

Individual operational programmes, among them the NEEAP, have been or are being drawn up for a number of segments as part of the Sustainable Energy and Hydrogen Economy project.

Environmental strategic documents and international obligations

In the preparation of long-term energy balances, the following documents relating to the environment and of importance for the development of the energy sector have been taken into account:

- National Environmental Action Programme,[4]
- Operational Programme to Reduce Greenhouse Gas Emissions by 2012[5]
- National Emission Ceilings Operational Programme.[6]

Operational Programme of Environmental and Transport Infrastructure Development 2007–2013

Slovenia is beginning to draw on resources from European Cohesion Funds for the 2007–2013 period. The aim of the EU's cohesion policy is the development of countries and regions that are below the EU average in economic and social terms in order to reduce differences and achieve positive effects across the whole of the EU. In relation to this, and within the framework of the National Development Programme 2007–2013, the **Operational Programme of Environmental and Transport Infrastructure Development 2007–2013 (OP ETID)** was drawn up. It was approved by the Commission in August 2007 and will be implemented with considerable financial assistance from the Cohesion Fund. The programme contains a number of priorities, including sustainable energy.

The 'Sustainable Energy' development priority constitutes implementation of the ReNEP. The aim of the priority is to remove the many barriers which, because of inefficient operation of the market, are preventing more rapid investment in efficient energy use and renewable energy sources. The priority also addresses issues relating to increasing energy efficiency in industry, the tertiary sector and transport, and to increasing the volume of environment-friendly energy production from renewable

[4] Resolution on the National Environmental Action Plan 2005–2012 (OGRS, 2/06).

[5] Operational programme for reducing greenhouse gas emissions by 2012, MOP, December 2006 (Government resolution, 20 December 2006).

[6] Operational Programme to Achieve National Emission Ceilings in Slovenia (AP NEC) – Revised version of the national emission ceiling operational programme of 2005, Ministry of the Environment and Spatial Planning, 2007 (Government Decision of 4 January 2007)

energy sources and from systems for the cogeneration of heat and electricity. Implementation of the 'Sustainable Energy' development priority will make an important contribution to fulfilment of Slovenia's obligations relating to the reduction in greenhouse gas emissions in line with the Kyoto Protocol and achievement of the targets outlined in the EU directives and the ReNEP.

The 'Sustainable Energy' development priority focuses on three main investment areas: energy rehabilitation and the sustainable construction of buildings in the public sector; an increase in efficiency of use of electricity in all sectors; and modern distributed (local) systems for energy supply, with an emphasis on the use of renewable energy sources and the cogeneration of heat and electricity. Demonstration and model projects are planned to support these areas, along with awareness-raising and the intensive provision of information, training and energy advice.

The 'Sustainable Energy' priority, which could be defined primarily as an economic programme, will enable the purchase of fuels from abroad to be replaced by investments in and the use of domestic energy resources. The priority will have a wide-ranging impact on the national economy: an increase in competitiveness and technological development in areas in which Slovenia has expertise and tradition, the creation of high-quality new jobs, regional development, reduced dependence on energy imports, a reduction in energy intensity, a reduction in CO_2 emissions, lower energy costs, improved living conditions of the population, and so on.

Eighty-five per cent of the priority will be co-financed by the Cohesion Fund (EUR 159.9 million). The remaining 15% (EUR 28.2 million) will be provided by the state budget and other public funds. Around half these funds will be dedicated to efficient energy use and renewable sources in the public sector. It has been assessed that the entire value of this priority, taking into account investors' funding contributions, will be around EUR 570 million.

With implementation of the 'Sustainable Energy' priority, the cumulative energy savings in the 2008–2014 period will amount to around 620 GWh a year, and there will be additional production of electricity from renewable energy sources of 510 GWh a year, leading to a reduction in CO_2 emissions of around 660,000 tonnes a year (28%).

The funds for the 'Sustainable Energy' priority will constitute an important financial resource for achievement of the NEEAP targets.

European framework

In 2006 it became clear that the European Union would also decide to draw up a common energy policy.[7] The spring 2007 resolutions of the European Council also clarify the content of the associated climate and energy policy. **The aims of the**

[7] **Green Paper, European Strategy for Sustainable, Competitive and Secure Energy {SEC(2006) 317}, COM(2006)105 final**

common European energy and climate policy[8] are defined in detail and are as follows:

- increasing reliability of supply
- ensuring the competitiveness of European business and securing the availability and accessibility of energy
- promoting environmental sustainability and the fight against climate change.

The aims of European energy policy are ambitious, with climate policy being completely integrated within it. In its energy policy for Europe package, the EU has opted, in addition to targets for reducing greenhouse gas emissions, for specific targets and measures up to 2020 in a number of areas that will have a decisive impact on Slovenia's long-term energy balance, chief among them being:

- a 20% share of renewable energy sources in the primary energy balance to become a binding EU target; the targets of Member States to differ according to the different baselines and potentials;
- a minimum 10% share of renewable energy sources in the transport fuel balance;
- a 20% saving in primary energy in relation to projections drawn up regarding levels of consumption that would exist if no action were taken;
- a reduction in greenhouse gas emissions of 20% in comparison with 1990 levels;
- the development of energy technologies with the aim of increasing the competitiveness of sustainable energy use options.

Current situation

Slovenia placed energy efficiency high on its list of concerns in strategic documents relating to energy and environmental protection in the early 1990s. With the preparation of energy policy, which, in addition to ensuring supply, also gives equal status to reductions in energy requirements, targets for increasing energy efficiency, upon which efficient energy use programmes in Slovenia are based, were set. Efficient energy use programmes came to prominence when programmes to reduce greenhouse gas emissions began to be drawn up in the 1990s and when efficient energy use activities, which have played and will continue to play a significant role in reducing emissions,

[8] Report of the Commission to the European Council and the European Parliament – An Energy Policy for Europe, COM(2007)1 final. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, Limiting Global Climate Change to 2 degrees Celsius – The way ahead for 2020 and beyond, COM(2007)2 final. European Council in Brussels, 8/9 March 2007 – Presidency Conclusions, 9/3/2007, No. 7224/07.

became part of the operational programme to reduce greenhouse gas emissions. The key energy programme was the National Energy Programme, which included important targets in the fields of efficient energy use and RES. The same targets were also included in preparations for the Operational Programme to Reduce Greenhouse Gas Emissions.

Since 1995 Slovenia has carried out a large number of programmes aimed at removing the barriers preventing an increase in energy efficiency and greater use of renewable energy sources. The main areas of activity are: informing, raising the awareness of and training energy users, investors and other target groups, providing energy advice, and promoting investment in efficient energy use and RES.

However, all indicators of energy consumption and supply point to movements that are worse than the expectations of energy and environmental policy. Slovenia has relatively high energy intensity which is only slowly being reduced; between 2000 and 2005, the average rate of reduction was 1.2%, which is considerably less than that envisaged in the ReNEP and the EU Energy Efficiency Action Plan.[9] Likewise, greenhouse gas emissions are not falling as envisaged in the Operational Programme to Reduce Greenhouse Gas Emissions by 2012, which means that the energy and environmental policy mechanisms have not achieved the expected effects. National programmes to promote efficient energy use do attract substantial amounts of private money for the implementation of measures, but unfortunately these programmes have not changed their scope of operation for a number of years now. The volume of state incentives is considerably less than that planned in the ReNEP. Budget funds for this purpose have remained practically unchanged, despite the fact that Slovenia, by failing to act in the area of efficient energy use and renewable sources, is achieving less than 10% of the set targets.

One important contribution to the achievement of savings in final energy consumption is expected with the intensive use of resources from the European Cohesion Funds in the 2007–2013 period as part of that section of the **Operational Programme of Environmental and Transport Infrastructure Development 2007–2013 (OP ETID)** relating to the 'Sustainable Energy' priority.

However, the activities contained in the 'Sustainable Energy' priority for 2007–2013 is not enabling achievement of energy savings of 9% in the 2008–2016 period in accordance with Directive 2006/32/EC; this is because the scope of the measures and the volume of funds available are too limited. Only slightly less than one third of the required savings are being made. It is therefore imperative that Slovenia prepares an

[9] In October 2006 the EU adopted the Energy Efficiency Action Plan whose aim is to reduce primary energy consumption by 20% by 2020, which requires, in addition to an annual improvement to energy intensity of 1.8% as a result of structural changes (autonomous structural changes, new technologies, existing legislation), a further improvement of energy intensity of 1.5% a year.

energy efficiency plan that will provide for additional instruments and additional financial resources so that the 9% saving can be achieved.

First National Energy Efficiency Action Plan 2008–2016

In accordance with Directive 2006/32/EC, Member States must, in 2007, produce their first energy efficiency action plan (EEAP) setting out the measures to improve energy efficiency planned in order to make energy savings of 9% in the entire 2008–2016 period and especially in the first three-year period (2008–2010), and provide a plan of alignment with provisions relating to the exemplary role to be fulfilled by the public sector and to the provision of information and advice to end consumers. Average annual consumption in the last five-year statistical period prior to implementation of the Directive, excluding consumption of fuels in installations that are part of the emission allowance trading system, is used as the baseline final energy consumption for the setting of the energy saving target. The National Energy Efficiency Action Plan was drawn up in accordance with the requirements of Directive 2006/32/EC concerning preparation of Member States' first energy efficiency action plan and with the instructions given by the Commission.

The Action Plan determines:

- the calculation of baseline final energy consumption
- the savings target for final energy consumption for the entire 2008–2016 period, and the interim target for 2008–2010
- sectoral energy efficiency improvement instruments
- multi-sectoral and horizontal instruments
- public sector instruments
- financing of the Action Plan
- implementation of the Action Plan.

2 Final energy consumption savings targets

The target of the National Energy Efficiency Action Plan for 2008–2016 is, in accordance with Article 4 of Directive 2006/32/EC, the achievement of a 9% saving in final energy consumption through the implementation of planned instruments which cover efficient energy use and energy service measures. The targets are harmonised with the starting points of the Resolution on the National Energy Programme and with Directive 2006/32/EC, and support the achievement of the set targets in relation to the environment and the reliability of energy supply.

2.1 Setting of the baseline final energy consumption

Directive 2006/32/EC requires that Member States achieve a 9% saving in final energy consumption in the 2008–2016 period. In accordance with the Directive, the reference final energy consumption is taken to be the average annual final energy consumption in the last five-year period prior to commencement of the implementation of the Directive for which official data is available. Consumption in installations entitled to trade greenhouse gas emission allowances (i.e. included in the emission allowance trading system) is not taken into account when calculating the reference final energy consumption.

Energy end-use by sector, energy product and year in the 2001–2005 period is shown in Table 3. Average energy end-use in the 2001–2005 period amounted to 55,356 GWh. Of this figure, 8,008 GWh is deducted because it was consumed by those entitled to be part of the CO_2 emission allowance trading system. All such persons operate within the manufacturing sector. Of the remaining use, the largest portion comes from transport, whose rapid growth makes it the most problematic energy end-use sector.

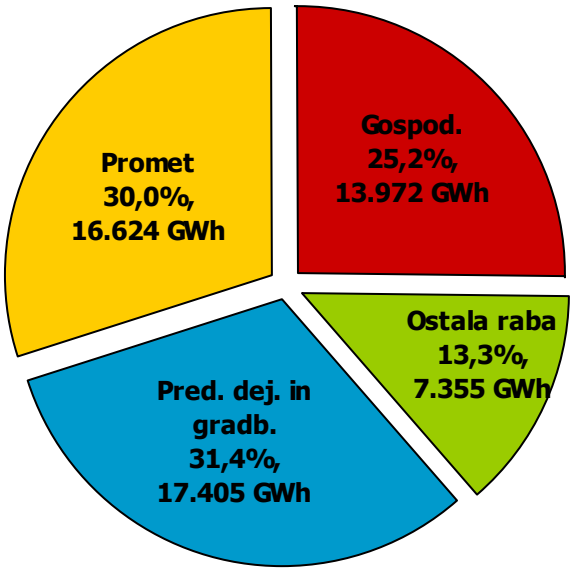


Figure 1: Structure of average final energy consumption 2001–2005 (including use by those entitled to trade CO_2 emission allowances). Source: SORS

Transport sector
Industry
Other consumption
Manufacturing and construction

Table 3: Survey of final energy consumption 2001–2005

	2001							2002						
	Solid fuels	Petroleum products	Natural gas	Renewable sources	Heat	Electricity	Total	Solid fuels	Petroleum products	Natural gas	Renewable sources	Heat	Electricity	Total
	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]

Final energy consumption	**744**	**27.040**	**7.757**	**4.943**	**2.303**	**10.932**	**53.719**	**1.198**	**26.458**	**7.618**	**4.617**	**2.152**	**11.700**	**53.742**
Energy consumption – ETD[10]	**593**	**1.771**	**4.377**	**557**	**0**	**0**	**7.298**	**1.105**	**1.178**	**4.110**	**610**	**0**	**0**	**7.002**
Energy consumption – ESD[11]	**151**	**25.269**	**3.381**	**4.385**	**2.303**	**10.932**	**46.421**	**93**	**25.280**	**3.508**	**4.008**	**2.152**	**11.700**	**46.740**
Residential sector	151	4.233	802	4.164	1.210	2.675	13.235	93	5.036	884	3.768	1.128	2.710	13.619
Other consumption[12]	0	4.710	1.035	35	1.093	2.349	9.223	0	3.780	1.175	35	1.023	3.024	9.037
Manufacturing and construction[13]	0	764	1.543	187	0	5.652	8.147	0	508	1.449	205	0	5792	7.954
Transport sector	0	15.561	0	0	0	256	15.817	0	15.956	0	0	0	174	16.131

NB: This table gives final energy consumption excluding non-energy consumption and consumption in the energy sector itself.

Source: SORS, EARS

[10] Final energy consumption in installations involved in the Emission Trading Directive (ETD) is not taken into account in the baseline final energy consumption figure.

[11] Energy end-use taken into account in Directive 2006/32/EC (Energy Service Directive, ESD).

[12] Services sector, public sector, agriculture, forestry

[13] Within framework of ESD

Table 3: Survey of final energy consumption 2001–2005 (continued)

	2003							2004						
	Solid fuels	Petroleum products	Natural gas	Renewable sources	Heat	Electricity	Total	Solid fuels	Petroleum products	Natural gas	Renewable sources	Heat	Electricity	Total
	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]
Final energy consumption	**1.012**	**26.865**	**8.176**	**5.013**	**2.210**	**12.072**	**55.347**	**907**	**27.168**	**8.502**	**5.106**	**2.268**	**12.549**	**56.499**
Energy consumption – ETD	**965**	**1.690**	**4.764**	**914**	**0**	**0**	**8.333**	**907**	**1.657**	**4.884**	**984**	**0**	**0**	**8.432**
Energy consumption – ESD	**47**	**25.176**	**3.412**	**4.098**	**2.210**	**12.072**	**47.014**	**0**	**25.511**	**3.618**	**4.122**	**2.268**	**12.549**	**48.066**
Residential sector	47	5.536	1.116	3.768	1.163	3.012	14.642	0	5.245	1.175	3.768	1.244	3.012	14.444
Other consumption	0	2.745	616	23	372	2.338	6.094	0	2.849	721	23	407	2.640	6.641
Manufacturing and construction	0	729	1.679	307	675	6.548	9.938	0	715	1.722	330	616	6.711	10.094
Transport sector	0	16.166	0	0	0	174	16.340	0	16.701	0	0	0	186	16.887

Table 3: Survey of final energy consumption 2001–2005 (continued)

	2005							Average 2001–2005
	Solid fuels	Petroleum products	Natural gas	Renewable sources	Heat	Electricity	Total	Total
	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]
Final energy consumption	**930**	**27.703**	**8.595**	**5.222**	**2.279**	**12.746**	**57.475**	**55.356**
Energy consumption – ETD	**930**	**1.803**	**5.168**	**1.071**	**0**	**0**	**8.973**	**8.008**
Energy consumption – ESD	**0**	**25.899**	**3.427**	**4.151**	**2.279**	**12.746**	**48.503**	**47.349**
Residential sector	0	4.664	1.268	3.768	1.268	2.954	13.921	13.972
Other consumption	0	2.710	337	23	291	2.419	5.780	7.355
Manufacturing and construction	0	779	1.822	359	721	7.176	10.857	9.398
Transport sector	0	17.747	0	0	0	198	17.945	16.624

2.2 Final energy consumption savings targets

The final energy saving target is estimated with reference to final energy consumption in the 2001–2005 statistical period (see Table 3). In this period, average annual final energy consumption amounted to 47,349 GWh. The target of a 9% saving in final energy consumption is equivalent to 4,261 GWh and will be achieved in the 2008–2016 period through the implementation of the planned instruments as part of the NEEAP. The average annual saving in final energy consumption over the nine-year period is 473 GWh. One of the indicators of success of NEEAP is the interim target saving in final energy consumption in the 2008–2010 period, which is 2.5%, or 1,184 GWh.

Table 4: National final energy consumption savings target

Five-year average of final energy consumption (2001–2005)	47.349	(GWh/year)	Saving
Target final energy consumption saving 2008–2016	**4.261**	**GWh**	**9,0 %**
Target final energy consumption saving 2008-2010	1184	GWh	2,5 %

The structure of average final energy consumption under Directive 2006/32/EC by sector in the 2001–2005 period is shown in Fig. 5.

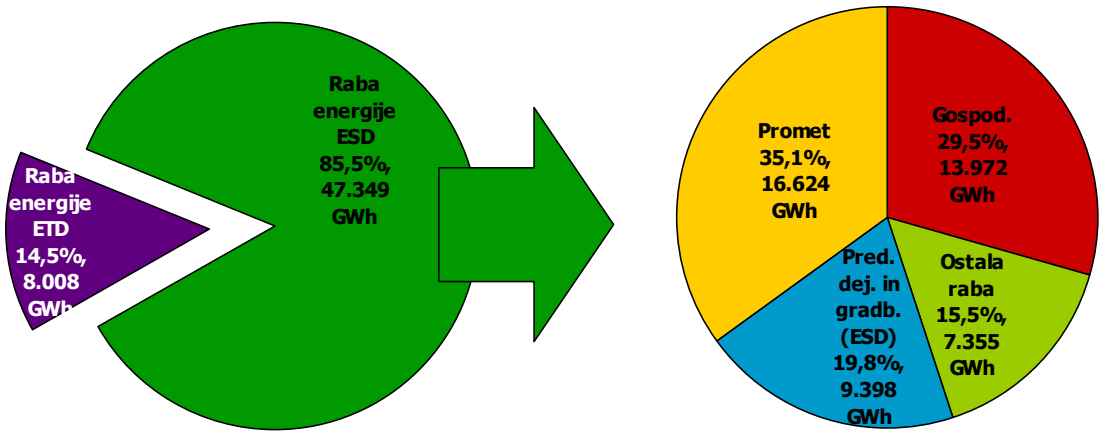


Figure 2: The sectoral structure of average final energy consumption under Directive 2006/32/EC (2001–2005). Source: SORS, EARS

Energy consumption – ETD

Energy consumption – ESD
Transport sector
Industry
Other consumption

Manufacturing and construction (ESD)

2.3 Features of the set targets

2.3.1 Sectors concerned and greenhouse gas emission allowance trading

All those entitled to be involved in the greenhouse gas emission allowance trading system are stated in the national plan for the allocation of emission coupons in the 2008–2012 period. The amount of energy consumed was calculated using data on the consumption of fuels reported by entitled persons in 2005 to the Environmental Agency of the Republic of Slovenia, and by using the combustion values given in Annex 1. The same share of energy from these entitled persons was taken into account for 2001–2004.

2.3.2 Boundary between final energy consumption and energy supply

The data given on final energy consumption is based on data from the Statistical Office of the Republic of Slovenia SORS) and is presented in accordance with the Eurostat methodology[14].

Final energy consumption does not include non-energy consumption and the energy sector's own consumption. In accordance with the Eurostat methodology, only part of the fuels of autoproducers of electricity is included. This is fuel for the generation of heat used *in situ*. Fuel consumption for the production of electricity and sold heat is classed as transformation. Final electricity consumption also includes electricity consumption by autoproducers.

2.4 Estimates of savings

All savings, with the exception of the cogeneration of heat and electricity, are estimated at the final consumption level. Here the definitions used in methodologies for reporting to Eurostat are strictly applied. Electricity savings are multiplied by a factor of 2.5, in accordance with the provisions of Directive 2006/32/EC. For measures relating to the use of renewable energy sources, we have only taken into account the reduction in final energy consumption.

Savings resulting from the cogeneration of heat and electricity are calculated at the primary energy level by taking into account the reference efficiencies for separate production. The NEEAP includes only promotion of cogeneration in the residential and tertiary sectors, not among autoproducers in industry.

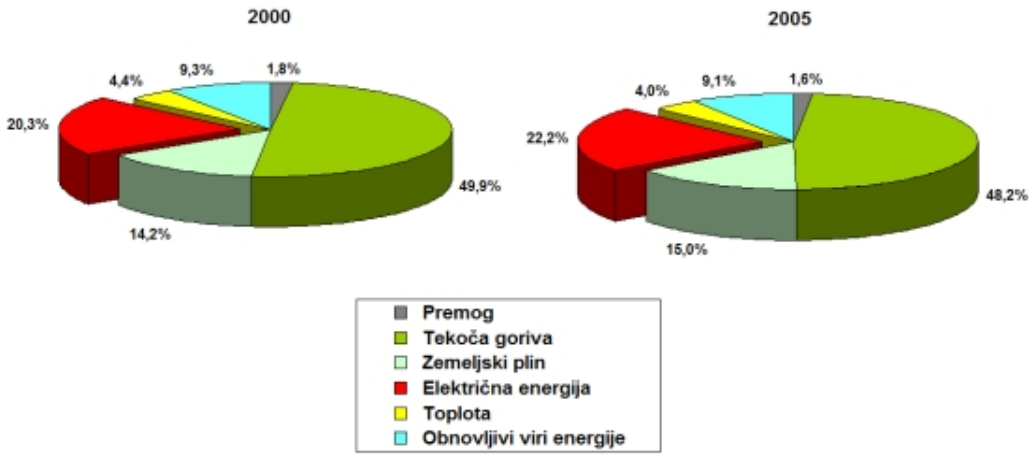
[14] **Energy Statistics Manual, IEA, OECD, Eurostat, 2004. http://www.iea.org/textbase/nppdf/free/2004/statistics_manual.pdf**

3 Analysis of the current situation

3.1 Energy consumption

Final energy consumption is rising constantly in Slovenia. Growth in final energy consumption in 2005[15] amounted to 1.7%[16], which is slightly less than the average annual growth rate recorded in the 2000–2005 period (2.1%). The increased consumption of liquid fuels (1.9% rise in 2005) and electricity (1.6% in 2005) contributed most to this growth. In 2005 the increased consumption of liquid fuels was higher than the growth recorded in the 2000–2005 period, while the rise in electricity consumption was lower (3.9%).

Liquid fuels accounted for almost half of final energy consumption in 2005 (48% of total final energy), followed by electricity (22%), natural gas (15%), renewable sources (9%) and district heating (4%) (see Fig. 5). Coal accounted for only 1.6% of final energy consumption.



Source: SORS

Figure 3: Structure of final energy consumption in 2000 and 2005

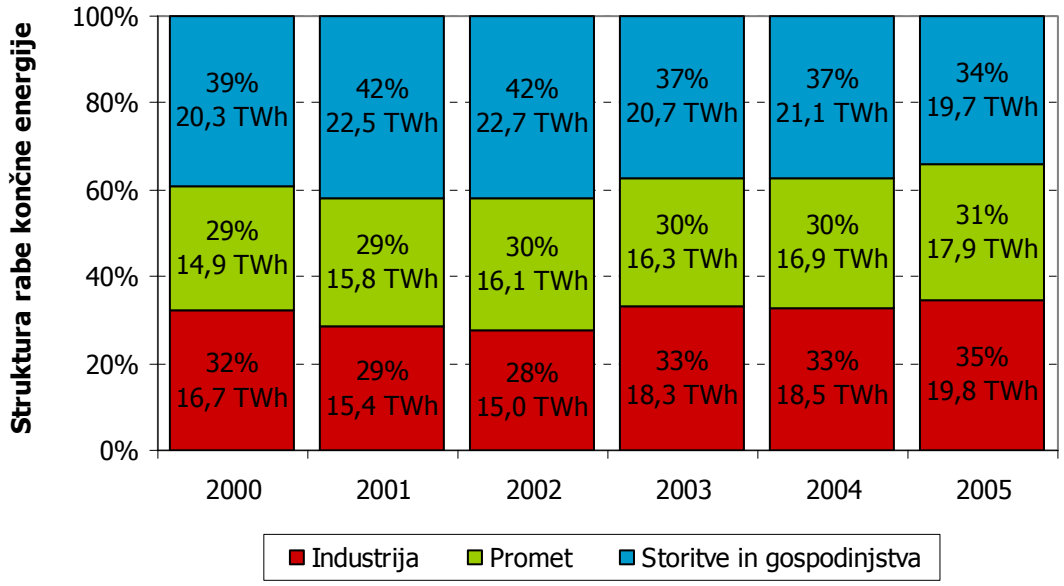
Coal
Liquid fuel

[15] The Statistical Office of the Republic of Slovenia amended the data on energy consumption in 2005, specifically on the use of liquid fuels in industry. The 2002 data on the consumption of wood biomass in the residential sector was also amended in 2007. There are therefore differences between the numbers given in the Annual Energy Survey for 2005 and those in the Energy Efficiency Action Plan.

[16] Growth in final energy consumption amounted to 1.7% in 2005. The joint growth rate for final energy consumption (for final energy and non-energy consumption) was 1.9%.

Natural gas
Electricity
Heat
Renewable energy sources

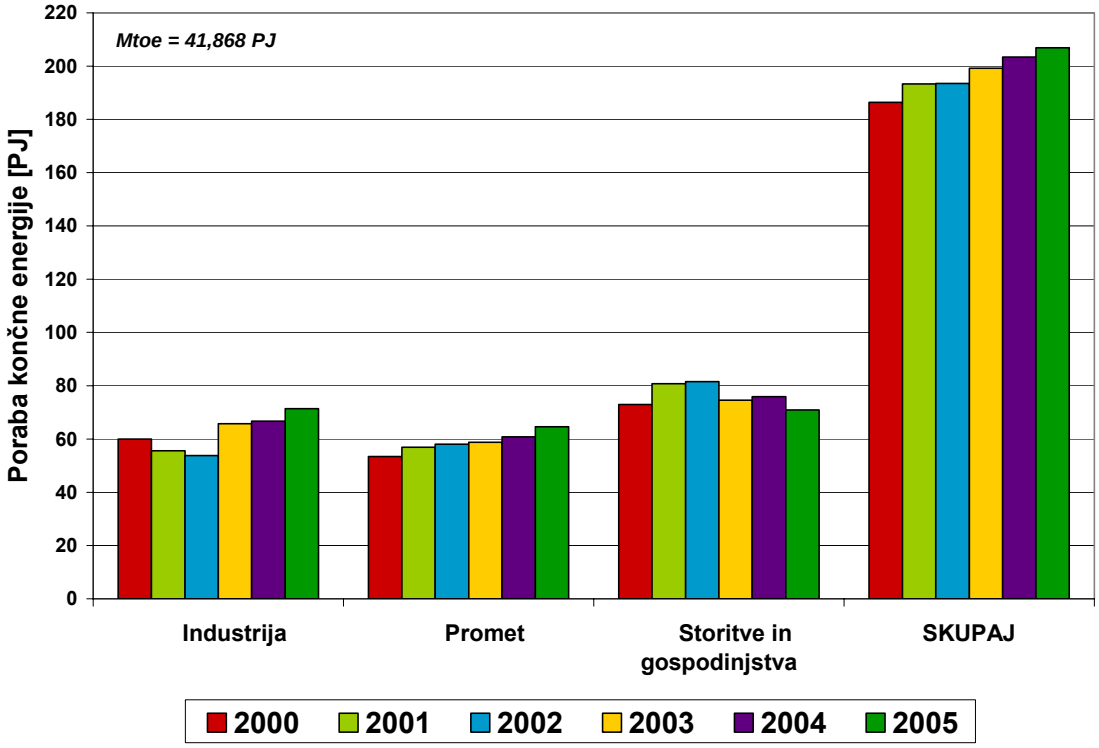
In final energy consumption in 2005, manufacturing and construction accounted for 35%, transport for 31%, and other sectors, together with the residential sector, for 34% (see Fig. 4). The share taken by industry and transport is rising at the expense of other sectors.



Source: SORS

Figure 4: Structure of final energy consumption by sector, 2000–2005

Structure of final energy consumption
Industrial sector
Transport sector
Services and residential sectors



Source: SORS

Figure 5: Sectoral and joint final energy consumption

Final energy consumption (PJ)
Industrial sector
Transport sector
Services and residential sectors
Total

The annual growth rate of final energy consumption in the 2000–2005 period was higher than expected under the ReNEP (a growth rate of 1.9% was expected, but the rate achieved was 2.4%).[17] The higher growth rate is the result of higher growth in final energy consumption in industry (electricity and fuels) and higher growth in the consumption of liquid fuels in the transport sector.

Movements in final energy consumption by sector show that final energy consumption rose in 2005 in manufacturing and construction and in transport, and fell in general consumption. The growth rate of 6.3% in final energy consumption in the transport sector in 2005 deviated strongly from the average growth rate of 3.9% recorded over the six-year period from 2000 to 2005.

[17] **Final energy and non-energy consumption.**

The same applies to manufacturing, where there was a 7% growth in consumption in 2005 while the average annual growth recorded in the 2000–2005 period was 3.5%.[18] The rise in final energy consumption in manufacturing in 2005 was the result of increased consumption of liquid fuels (by 9%), electricity (7%) and natural gas (6%). The fall in final energy consumption in the residential sector was the result of the fall in consumption of liquid fuels in 2005 (11%), which itself was partly the result of a switchover to natural gas (increase of 8% in 2005). Final energy consumption in the tertiary and residential sectors was even lower than the level recorded in 2000. The fluctuations, which demonstrate an increase in the energy efficiency of the installations used, the replacement of fuels and the adequacy of the level of heat insulation in buildings, are stable.

Energy intensity is showing a positive trend, although improvements to energy efficiency are proceeding too slowly to enable Slovenia to control the excessive growth in energy consumption, and the costs, emissions and dependence on energy imports that this entails, or to improve energy efficiency and thus economic competitiveness. Slovenia is still lagging some way behind the EU-25 average, and the fact that improvements in energy intensity are proceeding too slowly means that it will be several decades before it reaches EU-15 levels. A new timetable is planned in the EU as a result of implementation of the EU Energy Efficiency Action Plan, i.e. an annual 1.8% improvement in energy intensity in the EU (at the primary level). This means that a new timetable will also be required in Slovenia in order that comparative levels of competitiveness to those seen in the EU as a whole can be achieved.

In recent years, greenhouse gas emissions have been increasing markedly only in the transport sector; in the services sector, emissions have been falling. There was a rise in emissions in industry in 2004 and 2005 after several years in which levels remained more or less unchanged. In 2005 total greenhouse gas emissions were above the baseline year of 1986; this was due to the consumption of fuels for energy purposes. They rose considerably in comparison with 2004, which does not accord with the targets of the Kyoto Protocol and the Operational Programme to Reduce Greenhouse Gas Emissions (OP RGGE). In the 2000–2005 period, emissions rose by an annual average of 1.8%, mostly in the energy sector (2.9%), transport (3.7%) and industry (1.9%). In the services sector they fell by 3.2%. If Slovenia is to meet its obligations, it will have to implement the adopted greenhouse gas emission programmes in a consistent manner.

[18] **There is lively fluctuation in final energy consumption in industry, with consumption falling until 2002, increasing strongly in 2003 (22%), growing only minimally in 2004 and increasing again in 2005.**

3.2 Existing efficient energy use and RES instruments and measures

Since 1995 Slovenia has carried out a large number of promotional programmes aimed at removing the barriers preventing an increase in energy efficiency and greater use of renewable energy sources. In addition, numerous regulations have been adopted primarily in relation to the energy performance of buildings and to household appliances and other products.

The main areas covered by the promotional programmes are:

- informing, raising the awareness of and training energy consumers, investors and other target groups;
- providing energy advice to the public;
- promoting the implementation of advisory services;
- promoting investment in efficient energy use and RES.

The main financial instruments are:

- allocating grants from the national budget or provided subsidised-interest loans for investments;
- ensuring favourable purchase prices (feed-in tariff) for electricity produced from renewable energy sources or high-efficiency cogeneration of electricity and heat from fossil fuels;
- providing exemptions from CO_2 pollution taxes in the implementation of certain measures.

The contractual reduction in energy costs (so-called ‘third party financing’), which was introduced in 2003 and is suitable primarily for the public sector. A number of projects have already been carried out using this instrument.

A survey of the instruments and measures in the 1995–2007 period that may be implemented in the 2008–2016 period, pursuant to Directive 2006/32/EC, as earlier activities, is given in Annex 3. We estimate that the investment measures carried out over the last 13 years will ensure an energy saving of around 239 GWh in 2010 and of around 210 GWh in 2016, which constitutes the fulfilment of six months’ worth of obligations under Directive 2006/32/EC.

3.3 Barriers to increasing energy efficiency

State interventions in the areas of efficient energy use and RES are required because of the inefficient workings of the market, which cannot by itself guarantee that the necessary changes will occur with sufficient speed. The purpose of such intervention is the removal of a large number of barriers; these barriers are of an institutional, legislative, administrative, economic, financial, personnel nature, and also relate to awareness and information provision, etc. The main barriers are given below.

Systemic and institutional barriers

- The areas of efficient energy use and RES do not have suitable priority attached to them in accordance with European and national development and environmental policy.
- The same body is responsible for long-term planning, the drafting of action plans and regulations, and the implementation of promotional programmes (i.e. it has planning, supervisory and implementational functions), which contributes to inefficiency in terms of organisation and time taken.
- There is no strong national institution for the implementation of programmes to promote efficient energy use and RES. There is no institution for the implementation of efficient energy use and RES programmes for the public sector that could serve as an exemplar to other sectors. The area is understaffed.
- There is weak coordination between the various ministries (of the environment, the economy, transport, agriculture and forestry, finance, education, science and technology, and regional development) in the planning and promotion of efficient energy use and RES. There are insufficient links between government policies in the fields of efficient energy use and RES, particularly in transport.
- There are too few links between national and local institutions.
- There is a lack of control over the quality of devices and appliances on the market, which leads to the presence of inefficient products on the market.
- Research and development for energy and other technologies and services in the areas of efficient energy use and RES is too limited in scope and volume. There is a tendency for technological potentials to remain unrealised. Slovenian companies could, in the future, restrict themselves merely to the production of component parts for appliances, without their own brands and marketing.

Legal and administrative barriers

- There is a limited range of economic instruments for promoting efficient energy use and RES.
- There have been delays in adopting regulations concerning the energy performance of buildings.
- There is a lack of regulations concerning the minimum energy efficiency of energy-consuming products.
- Energy performance contracting and energy supply have still not been fully addressed in regulations.
- The compulsory division and calculation of heating costs in multi-dwelling buildings according to actual energy used is not prescribed in law.

- The unanimous agreement of all floor owners in a multi-dwelling building is required before common areas can be rehabilitated.
- Aspects of efficient energy use and RES are not included in the selection criteria for public contracts.
- The process of acquiring construction and other documentation is complex and protracted (e.g. heat pumps, systems using wood biomass with a power of over 50 kW, lack of clarity of legislation in the issuing of construction permits).
- Complex and protracted procedure from the submission of a grant application to its approval, especially for households.

Economic barriers

- There is an inappropriate relationship of price between certain types of energy because of the failure to factor in all the costs, including the external costs of damage caused by energy to the environment, human health, etc.
- There is an inadequate tariff system which fails to encourage users to save energy (the fixed part of energy costs is too high).
- The level of discount used when assessing the profitability of investments within companies is too high. Therefore the profitability of a large number of energy-saving measures does not satisfy the high economic criteria of company owners. Investments in production technology take precedence over investments in efficient energy use measures.
- The share of energy costs in the overall costs of companies, institutions and households is frequently disproportionately high. This means that investments in efficient energy use and RES are not seen as priorities.
- Investments in certain measures, e.g. the energy rehabilitation of buildings and RES, have a long investment-return period and are therefore not attractive.
- The payers of invoices for investment and energy consumed are separate, which reduces interest in investing in efficient energy use and RES (e.g. primary schools, renting of buildings or flats).
- The costs associated with drawing up small-scale projects are high.
- There is greater risk attached to the introduction of new technologies, which have not yet found their way to Slovenia.

Barriers relating to financial resources

- Central government funding for financial incentives is to low and lags a considerable way behind the volume planned in the ReNEP. There has, up to now, been no stable, long-term financial mechanism for supporting efficient energy use and RES projects. Support has been dependent on the adoption of annual budgets.

- There is a low level of availability of own funds. The poor financial standing, primarily of private individuals, prevents them from obtaining loans for otherwise economically viable projects, as does the poor financial standing of owners and potential buyers (e.g. when building a house and investing in energy installations).
- Financial incentives are oriented solely towards the purchase of established technologies; there are no incentives for technological and economic development in this area (e.g. the production of pellet boilers, etc.), which could, in the future, reduce potential positive economic benefits.
- The transaction costs associated with the allocation of financial incentives, especially in the residential sector, are too high.
- The market for alternative financing models is poorly developed (energy performance contracting or energy supply) and financial institutions have a lack of knowledge and experience of these models.
- A tax on air pollution caused by CO_2 emissions should become an instrument for promoting efficient energy use and RES, with revenues being used specifically for financing technologies that reduce CO_2 emissions.

Human-resource barriers: availability, knowledge, qualifications

- There is a lack of efficient energy use and RES experts on the labour market.
- Providers of energy and other services are poorly qualified (architects, planners, building contractors, including installers of heating equipment such as solar collectors, PV, heat pumps, and other construction specialists.
- There is a lack of qualified staff among energy users, particularly in small and medium-sized companies and in the public sector, able to manage and implement efficient energy use, RES and energy management projects.
- Administrative workers are not sufficiently qualified to review documentation for acquiring a construction permit (new buildings, building reconstructions).
- There are too few professionals qualified to promote and support activities relating to efficient energy use and RES measures.
- Efficient energy use and RES are insufficiently integrated into education and study programmes.

Barriers relating to awareness and information

- The level of information provided on energy costs, possible efficient energy use measures and modern technologies is too low.
- The population are insufficiently aware that excessive and inefficient energy use also damages the environment (CO_2, hole in the ozone layer, SO_2).

- There are too few activities being carried out to increase energy efficiency in the public sector, which should be fulfilling an exemplary role.
- There is a lack of trust in innovative energy technologies and too few high-quality pilot and model projects, especially in public buildings and for new technologies.
- There is a lack of knowledge and interest among company managers concerning energy supply and consumption.

It is clear from a survey of activities carried out so far that a large number of barriers have been removed through the use of various instruments. The modest past achievements are the result of the fact that insufficient priority has been given to efficient energy use and RES, which does mean that the most important barriers have remained in place: inappropriate institutional barriers, lack of staff, and central government funding that is far too low to allow promotional programmes to be carried out properly.

For the removal of the above-mentioned barriers, the NEEAP provides for 29 instruments, as well as for measures to effect change in the institutional field.

4 Energy efficiency improvement instruments

In order to achieve the savings envisaged in Directive 2006/32/EC, a number of instruments are provided for in the NEEAP (sectoral-specific, multisectoral and horizontal measures) in all sectors (residential, services, industrial and transport). Through these, Slovenia will achieve savings in final energy consumption, in the 2008–2016 period, of at least 9% in comparison with the baseline final energy consumption, or at least 4,261 GWh. The purpose of these instruments is to remove the numerous barriers to increasing energy efficiency outlined in Chapter 3.

The main strategic documents of energy, environmental and development policy form the basis for the preparation of multisectoral and horizontal energy efficiency improvement instruments, as follows:

- Resolution on the National Energy Programme;
- Operational Programme to Reduce Greenhouse Gas Emissions by 2012
- Operational Programme of Environmental and Transport Infrastructure Development 2007–2013;
- Energy Efficiency Action Plan Realisation of Potentials, KOM(2006)545 final.

Most of the planned instruments are already in use in Slovenia and comply with the requirements of Directive 2006/32/EC, Annex III.

Sector-specific instruments have been prepared for the following sectors:

- residential (Chapter 4.1)
- tertiary (Chapter 4.2)
- industrial (Chapter 4.3)
- transport (Chapter 4.4).

These are primarily financial incentives in which determination of energy savings are the most straightforward. The envisaged instruments also include instruments and measures for the public sector mentioned in Annex VI of Directive 2006/32/EC.

In addition to the services sector, small business and agriculture, the tertiary sector also includes the public sector. In the NEEAP the term ‘public sector’ is used in accordance with the definition supplied in Article 3 of the Public Procurement Act and Article 3 of the Public Procurement in the Water Management, Energy, Transport and Postal Services Act (both OGRS, 128/06).

In addition to these instruments, the NEEAP also defines multisectoral instruments, which are defined more widely and affect more sectors (Chapter 5.1), as well as horizontal instruments, which affect a variety of areas or sectors (Chapter 5.2). A variety of instruments for the preparation of legislation (acts, regulations), financial policies (taxes, purchase of green electricity) and the promotion of energy-efficient

measures (promotion, information) are mentioned as part of the group of multisectoral and horizontal instruments.

The presentation of each of the envisaged instruments comprises the type of instrument and the target group at which the instrument is aimed, and describes in detail the efficient energy use measure or the activity envisaged within the instrument. The expected effects, the savings in final energy consumption, the reduction in greenhouse gas emissions, the public funds required, the status and timetable of implementation, the ministry responsible for the instrument and the instrument implementer are also given for each instrument. If the instrument promotes greater use of RES, the envisaged production of energy from RES is also given.

The saving in final energy consumption is determined on the basis of the annual saving in final energy consumption made by the user. In accordance with Annex II of Directive 2006/32/EC, electricity savings are multiplied by a factor of 2.5, which shows the ratio between primary energy required and the final electricity consumption; they thereby gain greater weight in comparison with other savings in final energy consumption.

The envisaged instruments for achieving savings in final energy consumption are as follows:

Residential sector

1. financial incentives for the energy-efficient renovation and sustainable construction of residential buildings
2. financial incentives for energy-efficient heating systems
3. financial incentives for efficient electricity use
4. efficient energy use for low-income households scheme
5. energy labelling of household and other appliances
6. compulsory division and calculation of heating costs in multi-dwelling and other buildings according to actual consumption
7. energy advice network for residents

Tertiary sector

8. financial incentives for the energy-efficient renovation and sustainable construction of buildings
9. financial incentives for energy-efficient heating systems
10. financial incentives for efficient electricity use
11. green public procurement

Industrial sector

12. financial incentives for efficient electricity use

Transport sector

13. promotion and competitiveness of public transport
14. promotion of sustainable freight transport
15. increase in the energy efficiency of private vehicles
16. construction cycle paths and support facilities, and the promotion of cycling

Multisectoral instruments in general consumption and the industrial sector

17. regulations on the energy performance of buildings
18. requirements for the minimum energy efficiency of products
19. co-financing of implementation of energy audits
20. system of guaranteed electricity purchase prices
21. contractual reduction in energy costs
22. energy use management programmes for final customers ('Demand Side Management', DSM)

Horizontal instruments in general consumption and the industrial sector

23. awareness-raising, information, promotional and training programmes, demonstration projects
24. education programmes
25. provision of information to consumers on energy use, transparent accounting and other information
26. environmental tax on air pollution caused by CO_2 emissions
27. excise duties on fuels and electricity
28. exemption from the payment of the environmental tax on air pollution caused by CO_2 emissions
29. financial incentives to support R&D projects

In the preparation of annual NEEAP implementation programmes, the above-mentioned instruments will be supplemented where necessary, or new instruments will be added, with the aim of removing systemic, administrative and other barriers.

Energy efficiency regulations

The adoption of a large number of regulations relating primarily to the energy performance of buildings, products and energy-consuming appliances, and to green

public procurement, is planned as part of individual instruments. A survey of existing regulations and of regulations to be adopted in the 2008–2010 period is given in Annex 2. A survey of strategic documents and directives is given in Annex 5.

Economic instruments

In promoting measures to increase energy efficiency and the use of renewable energy sources in buildings, the following economic instruments have primarily been used up to this point:

- state grants for investment and advisory services
- loans with a subsidised interest rate
- income tax reliefs for the purchase of energy-saving appliances
- repayment of environmental tax on air pollution caused by CO_2 emissions
- favourable purchase prices for electricity produced from renewable sources or from the high-efficiency cogeneration of heat and electricity
- energy labelling of household appliances and other energy-consuming products

These instruments encourage potential investors to prepare or implement investments with direct investment assistance or with indirect assistance in the operation of these appliances.

Two instruments in the area of energy taxation are used:

- excise duties on fuels and electricity
- environmental tax on air pollution caused by CO_2 emissions

Their basic purpose is financial, while they can have a promotional effect on the implementation of RES measures. Energy taxation can be a good way of internalising external costs, while the state is able, through energy taxation, to influence the final price level of energy, thereby directing and indirectly influencing energy use. The energy taxation level encourages a reduction in energy consumption among final customers, while through the selective taxation of only certain fuels the state intervenes in the price ratio between fuels, influencing the replacement of environmentally unfriendly fuels with those that cause less damage to the environment.

The NEEAP envisages the use of all the above-mentioned economic instruments, with the exception of income tax reliefs for the purchase of energy-saving appliances.

As part of the planned environmental reforms of public finances, an assessment of economic instruments for promoting RES will have to be carried out if the NEEAP is to be implemented successfully. This assessment will relate in the main to:

- higher taxation of fossil fuels for motor vehicles and heating (rise in tax on air pollution caused by CO_2 emissions, higher excise duties on fossil fuels);
- level of tax on motor vehicles brought into line with reimbursements for the use of roads with regard to the level of environmental burden imposed;
- introduction of tax reliefs (e.g. relief on company revenue tax, relief for investments in efficient energy use and RES in buildings alongside the introduction of property tax);
- implementation of reimbursements of payments of the tax on air pollution caused by CO_2 emissions for implementation of efficient energy use measures.

The assessment of financial instruments from the point of view of efficiency is particularly necessary (administrative procedures, transaction costs, etc.) in the allocation of financial incentives for efficient energy use for particular target groups.

Costs and benefits of instruments for promoting the implementation of investment measures

Individual instruments differ with regard to technology and target group and to the related costs of implementation of the measures and the benefits in terms of savings in final or primary energy, the production of energy from RES and the reduction in CO_2 emissions. Considerable experience has been acquired from earlier activities in relation to the range of available investment promotion instruments.

When selecting the type and intensity of individual measures in the NEEAP, the strategic targets that guide the above-mentioned programmes, the feasibility of the measures and the demand of investors for incentives in individual final energy consumption segments are all taken into account. In addition, one important aspect is also support for the development of various segments of technology and energy services for efficient energy use. Incentives in the NEEAP are therefore oriented towards several technologies and not exclusively towards the subsidising of the currently cheapest measures or technologies. This means that, in accordance with Directive 2006/32/EC, measures are included for the generation of heat for buildings from renewable energy sources, which are otherwise more expensive, and they will feature in the energy rehabilitation of buildings or in new construction. In addition to reducing final energy consumption, these measures also increase the amount of energy produced from renewable sources; it therefore makes sense to encourage them.

The criterion of a ratio between the costs and benefits of individual measures will be taken into account by means of a timetable and dynamic of implementation of individual instruments. Additional safeguards to ensure cost-effectiveness of use of funds will also be built into the conditions applying to individual invitation to tenders. The envisaged intensity of assistance will then be adapted to changes in conditions on the services, energy and technology markets.

Earlier activities

Pursuant to Directive 2006/32/EC, in addition to energy savings achieved by means of measures to be implemented in the 2008–2016 period, measures to improve energy efficiency (so-called 'earlier activities') started before the commencement of implementation of the Directive (i.e. from 1995 or, exceptionally, from 1991) may also be taken into account.

Energy savings made as a result of earlier activities in the 1995–2007 period (described in Chapter 3) are not taken into account in the NEEAP since the Action Plan anticipates that the targets can be achieved by implementation of the proposed instruments; that said, the savings made on the basis of earlier activities do provide additional support, in terms of time and quantity, to the achievement of these targets. Energy savings resulting from the implementation of earlier activities in the 1995–2007 period will be taken into account only in the event that the targets set out in the NEEAP are not reached.

4.1 Energy efficiency improvement instruments in the residential sector

In 2005 final energy consumption in the Slovenian residential sector amounted to 13,921 GWh, or 24% of all final energy consumption. Electricity consumption contributed almost 3,000 GWh to this figure. In 2002 most of the electricity used (45%) went for household appliances and other devices used in households (lighting, home electronics, etc.), followed by hot water preparation (25%), heating (22.5%) and cooking (7.5%). In 2005 the consumption of fuels and district heating was up 2.9% on the level recorded in 2000, although there was a fall in consumption in the last two years. The greatest increase in consumption was recorded in electricity, where consumption in 2005 was up by 13.4% on 2000. There was a fall in electricity consumption as well in 2005, after stabilisation in 2004.[19]

The potentials for efficient energy use in the residential sector lie in the use of energy for heating and the use of electricity. In this sector there is a range of cost-effective measures for efficient energy use; however, there is also a series of barriers preventing their implementation. These are, in particular, financial barriers to the securing of funds for the implementation of investments and users' lack of awareness and knowledge of the possibilities and benefits of efficient energy use. The proposed set of instruments is therefore target-oriented so that opportunities for efficient energy use in this sector are exploited as fully as possible. The package of financial incentives covers four programmes:

- the energy-efficient renovation and sustainable construction of buildings
- energy-efficient heating systems

[19] In 2006 electricity consumption rose once again, this time by 3.5%.

- efficient electricity use
- efficient energy use for low-income households scheme.

Promoting efficient energy use in the residential sector is also supported by multisectoral and horizontal measures. These are described in Chapter 5.

4.1.1 Survey of instruments for the residential sector

Table 5 Energy efficiency improvement instruments in the residential sector

No.	Instrument for improving energy efficiency	Efficient use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
1	Financial incentives for the energy-efficient renovation and sustainable construction of residential buildings	• Energy rehabilitation of buildings (heat insulation of facades, heat insulation of loft spaces, window replacement) • Construction of low-energy buildings • Construction of passive buildings	2008 - 2016	210 GWh	EUR 33 million
2	Financial incentives for energy-efficient heating systems	• Replacement of unsuitable boiler capacities with high-efficiency installations, promotion of purchase of wood biomass boilers • Optimisation of heating systems • Solar systems for heating, heat pumps	2008 - 2016	53 GWh	EUR 37 million
3	Financial incentives for efficient electricity use	• Promotion of purchase of the most energy-efficient household appliances • Promotion of energy-efficient lighting • Introduction of intelligent meters in households	2008 - 2016	460 GWh	EUR 29 million

Table 5: Energy efficiency improvement instruments in the residential sector (continued)

No.	Instrument for improving energy efficiency	Efficient use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
4	Efficient energy use for low-income households scheme	• Achievement of minimum energy efficiency standards in the renovation of buildings (insulation of loft spaces, window sealing) • Energy-saving lighting and other measures	2008 - 2016	29 GWh	EUR 21 million
5	Energy labelling of household and other appliances*	• Energy labelling of household appliances in accordance with the valid EU regulations and regulations in preparation	2008 – 2016	263 GWh	
6	Compulsory division and calculation of heating costs in multi-dwelling and other buildings according to actual consumption*	• Obligation to measure and calculate according to actual consumption of heat	2008 - 2011	150 GWh	
7	Energy advice network for residents*	• Provision of advice and information to residents	2008 - 2016		
TOTAL (1-7)				**1,165 GWh**	**EUR 120 million**

* Funds included in funds for instrument no. 23

4.1.2 Description of instruments for the residential sector

Instrument	1. ***Financial incentives for the energy-efficient renovation and sustainable construction of residential buildings***
Type of instrument	• *Direct investment subsidies financed from budget funds, and loans with a subsidised interest rate*
Target group	• *Owners of residence buildings, managers of buildings and investors in new construction and building renovation*
Efficient energy use measure	*This instrument is aimed at energy rehabilitation and the construction of low-energy and passive residential buildings.* *In connection with the energy rehabilitation of buildings, this instrument will promote the heat insulation of facades, loft spaces and other construction elements, the replacement of fixtures and fittings, and other measures. Investors will be encouraged to carry out these measures to a level of energy efficiency that exceeds the requirements of the regulation governing the energy efficiency of buildings.*
Effects	*The energy rehabilitation of buildings envisages that, in addition to 250,000 m^2 of residential space renovated in a single year in Slovenia (2% of the entire housing stock built before 1980), additional investments in improving the thermal characteristics of buildings. By 2016 an additional 2.8 million m^2 of residential space in single- and multi-dwelling buildings will be rehabilitated. This will speed up the process of reducing energy consumption in this building stock, which is also the largest consumer of energy per unit of area. Promotion of the construction of low-energy and passive buildings is also envisaged.*
Expected energy savings	*With implementation of the programme, savings in final energy consumption for heating achieved by the measure will amount to 210 GWh per year by 2016. Greenhouse gas emissions will be reduced by 54 kt of CO_2 per year.*
Public funding	*The estimated level of public funding required for implementation of the instrument is EUR 33 million.*
Status and timetable of implementation	*The overhauled instrument will be implemented to a significantly greater scope than has been the case so far.* *Envisaged duration of instrument: 1. 1. 2008 to 31 December 2016.*
Institution(s) responsible	**Ministry of the Environment and Spatial Planning**
Provider(s)	• *Slovenian Ecological Fund* • *Regions*

Instrument	2. ***Financial incentives for energy-efficient heating systems***
Type of instrument	• *Direct investment subsidies financed from budget funds, and purpose-specific loans with a subsidised interest rate*
Target group	• *Owners of residential buildings, managers of buildings and investors in building renovation*
Efficient energy use measure	*The instrument is aimed at accelerating the implementation of measures to reduce energy consumption for heating in residential buildings, as follows:* • *replacement of unsuitable boiler capacities with high-efficiency installations use of condensation and modular boilers, improvements to efficiency from the current 80% to 104%, and improvements to the efficiency of modular boilers to 94%* • *installation of special high-efficiency biomass boilers using firewood, pellets and woodchips. an envisaged improvement in efficiency from the current 80% to 90%* • *optimisation of heating systems with investments in the following technologies: thermostat valves, regulation and hydraulic balancing of heating systems: e.g. automatic regulation valves for balancing aerial lines in multi-dwelling buildings, replacement of heating sub-stations in district heating systems,* • *ventilation system with high-efficiency recovery of heat of waste air* • *solar systems for the heating of buildings and sanitary hot water* • *heat pumps for central heating that use the heat of the air, ground and surface water, or heat accumulated in the earth and stone masses.*
Effects	**The following results are planned by 2016:** • *replacement of 24,500 boilers in single-dwelling buildings* • *replacement of 630 boilers in multi-dwelling buildings* • *optimisation of 21,000 heating systems* • *installation of heating systems that use RES – solar collectors and heat pumps*.
Expected energy savings	**With implementation of the programme, savings in final energy consumption for heating achieved with this measure will amount to 53 GWh per year by 2016, which will reduce greenhouse gas emissions by 67 kt CO_2 per year and the production of final energy from renewable sources by 294 GWh per year.**
Public funding	**The estimated level of public funding required for implementation of the instrument is EUR 37 million.**

Status and timetable of implementation	*The overhauled instrument will be implemented to a significantly greater scope than has been the case so far.* *Envisaged duration of instrument: 1. 1. 2008 to 31 December 2016.*
Institution(s) responsible	**Ministry of the Environment and Spatial Planning**
Provider(s)	• *Slovenian Ecological Fund* • *Regions*

Instrument	3. ***Financial incentives for efficient electricity use***
Type of instrument	• *Direct investment subsidies financed from budget funds, and purpose-specific loans with a subsidised interest rate*
Target group	• *households/residents*
Efficient energy use measures	**The instrument is aimed at reducing the consumption of electricity by household appliances, which represents around 56% of electricity consumed in the residential sector (1,700 GWh), and of electricity for lighting, which accounts for around 11% of electricity consumed in the residential sector, including support activities for reducing electricity consumption by means of metering and advice provision.** **The efficient electricity use programme in this sector is made up of the following efficient energy use measures/target technologies:** • *household appliances: encouraging the purchase of household appliances with the greatest energy efficiency level (fridges, freezers, washing machines and dishwashers)* • *lighting: co-financing and promotion of the purchase of energy-saving light bulbs (energy saving of up to 70%)* • *metering and advice provision – introduction of intelligent meters in households (online monitoring, remote reading), rapid metering and advice for users (short energy audit, advice regarding the biggest energy consumers – replacement, method of use, etc.).*
Effects	*The following are envisaged throughout the entire period:* • *co-financing of the purchase of 200,000 energy-saving household appliances* • *co-financing and promotion for the purchase of 560,000 energy-saving light bulbs* • *90,000 energy audits*
Expected energy savings	*Complete implementation of the residential sector programmes enables achievement of the required electricity savings of 460 GWh per year and an indirect reduction of emissions of 104 kt CO_2 per year.* **Electricity savings are calculated with a factor of 2.5.**
Public funding	**The estimated level of public funding required for implementation of the instrument is EUR 29 million.**
Status and timetable of implementation	*Up to now only loans for the purchase of energy-efficient household appliances have been available.* *Envisaged duration of instrument: 1. 1. 2008 to 31 December 2016.*
Institution(s) responsible	**Ministry of the Environment and Spatial Planning**
Provider(s)	• *Slovenian Ecological Fund* • *Regions*

Instrument	4. ***Efficient energy use for low-income households scheme***
Type of instrument	• *Direct investment subsidies financed from budget funds*
Target group	• *Socially vulnerable families with children, and socially vulnerable elderly persons*
Efficient energy use measures	*Previous programmes for the subsidising of efficient energy use measures in the residential sector were focused primarily on individual technologies and did not take account of the social status of households. According to the most recent figures, 14% of households are below the poverty line, which means that they do not have sufficient funds for ensuring adequate living conditions or implementing energy-saving measures. Experiences from the most developed European countries are similar.* *Support will be offered for the implementation of cheaper priority measures for reducing energy costs and increasing living standards. These measures include: insulation of loft spaces, sealing of windows, heat insulation at critical locations, use of energy-saving light bulbs, etc.* *Some 18,000 households will be involved in the scheme by 2016 (around 20% of all low-income households).* *Before the scheme is rolled out fully, it will be tested in pilot form in collaboration with the Ministry of Labour, Family and Social Affairs.*
Effects	*The scheme will enable socially vulnerable households to become involved in the process of renovating to improve living conditions and achieve minimum efficient energy use standards in buildings. In addition to reducing energy consumption and energy costs, and to reducing carbon dioxide emissions, the scheme will also contribute to lowering healthcare costs and creating new jobs.*
Expected energy savings	*The savings achieved by the proposed measures will, after the implementation of all investments, amount to 29 GWh per year by 2016, with emissions falling by 9.5 kt of CO_2 per year.*
Public funding	*The estimated level of public funding required for implementation of the instrument is EUR 21 million.*
Status and timetable of implementation	*This is a new instrument whose implementation has not yet commenced.* *Envisaged duration of instrument: 1. 1. 2009 to 31 December 2016.*
Institution(s) responsible	**Ministry of the Environment and Spatial Planning**
Provider(s)	• *Slovenian Ecological Fund*

Instrument	5. ***Energy labelling of household and other appliances***
Type of instrument	• *Compulsory provision of information on the energy efficiency of products*
Target group	• *Households, appliance manufacturers, appliance retailers*
Efficient use measures	*Electricity consumption in the residential sector in Slovenia amounts to around 3 TWh per year (2004). Household appliances account for 56% of this, lighting for 11%, and heating and hot water preparation for 33%. The energy efficiency of new household appliances is constantly improving; at the same time, however, the number of such appliances in households is on the rise.* *Pursuant to EU directives, the regulations require that these household appliances be labelled.* • *refrigerators, freezers and fridge-freezers* • *electric ovens* • *washing machines, household clothes' dryers, washer-dryers* • *dishwashers* • *light bulbs and fluorescent lamps* • *household air-conditioning appliances.* *In addition to supervision of the implementation of regulations, awareness-raising, information and other support activities will take place to encourage people to purchase energy-efficient household appliances.*

Efficient use measures	*Electricity consumption in the residential sector in Slovenia amounts to around 3 TWh per year (2004). Household appliances account for 56% of this, lighting for 11%, and heating and hot water preparation for 33%. The energy efficiency of new household appliances is constantly improving; at the same time, however, the number of such appliances in households is on the rise.* *Pursuant to EU directives, the regulations require that these household appliances be labelled.* • *refrigerators, freezers and fridge-freezers* • *electric ovens* • *washing machines, household clothes' dryers, washer-dryers* • *dishwashers* • *light bulbs and fluorescent lamps* • *household air-conditioning appliances.* *In addition to supervision of the implementation of regulations, awareness-raising, information and other support activities will take place to encourage people to purchase energy-efficient household appliances.*
Effects	*The specific consumption of purchased appliances will fall by 30 to 40% with the replacement of household appliances and guidance towards the purchase of labelled products.*

Expected energy savings	*We estimate that energy savings of around 263 GWh per year will be made by 2016 through the energy labelling of household appliances instrument, which constitutes an indirect potential saving of 63 kt of CO_2 per year.*
Public funding	*The public funding required for the implementation of this instrument is included in the funding for instrument no. 23.*
Status and timetable of implementation	*Implementation of the instrument is already underway.* *Envisaged duration of instrument: 1. 1. 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Ministry of the Environment and Spatial Planning* • *Ministry of Economy*

Instrument	6. ***Compulsory division and calculation of heating costs in multi-dwelling and other buildings according to actual consumption***
Type of instrument	• *regulation*
Target group	• *Owners of multi-dwelling and other buildings with several individual parts* • *Managers, those responsible for making calculations, suppliers of dividers, companies supplying heat from the network*
Efficient energy use measure	• *Obligation to meter and calculate heating costs according to actual consumption* • *Provision of information to households in multi-dwelling buildings on the advantages of division and calculation of costs according to actual consumption*
Effects	*Dividing and calculating heating costs according to actual consumption, particularly in multi-dwelling buildings, encouraging building users to save energy since this will be reflected in their monthly heating and hot water bills. It is estimated that heating costs will fall by between 15 and 30% with the introduction of the division and calculation of costs according to actual consumption*
Expected energy and cost savings	*We estimate that, through the instrument of calculation of heating costs in multi-dwelling buildings according to actual consumption, savings in final energy consumption for heating of at least 150 GWh per year will be made by 2016, which constitutes an annual reduction in emissions of 33 kt of CO_2.*
Public funding	*The public funding required for the implementation of this instrument is included in the funding for instrument no. 23.*
Status and timetable of implementation	*The division and calculation of heating costs in residential and other buildings is governed by rules from 2003. Calculation by actual consumption is therefore not yet compulsory. It is implemented in buildings in which the owners agree on introduction of the system by a majority vote. It is estimated that this system of calculation is being used in over 11,000 flats.* *The instrument refers directly to the requirements of Article 13 of Directive 2006/32/EC.* *The introduction of compulsory division and calculation of heating costs is planned by 1 October 2011.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Ministry of the Environment and Spatial Planning*

Instrument	7. ***Energy advice network for residents***
Type of instrument	• *Provision of information to residents through the ENSVET energy advice network*
Target group	• *Residents, households*
Efficient use measure	• *Continuation of and increase in the scope of advice provision and activities for greater awareness on the part of residents regarding reasonable energy use and the use of renewable energy sources.* • *Assistance to residents in preparing applications for financial incentives for the implementation of investments.*
Effects	*The network of energy advice offices, based on the principle of partnership between the state and local communities, provides residents with free advice, information and assistance in preparing applications for tenders for financial incentives for the implementation of investments. This will ensure that residents consume energy in a more rational manner and increase interest in investing in efficient energy use and renewable energy source measures.* *More than 100,000 advice sessions with residents are planned across the entire period.*
Expected energy savings	*The savings are indirect. An analysis of the effects of the operation of the advice network has shown a 29% reduction in the consumption of energy for heating among residents that have carried out the energy rehabilitation of buildings after the provision of advice.*
Public funding	*The estimated level of public funding for implementation of the instrument is included in the funding for implementation of instrument no. 23.*
Status and timetable of implementation	*The provision of energy advice to residents programme, which began in 1993, is carried out by approximately 65 authorised advisors in 34 advice offices.* *Envisaged duration of instrument: 1. 1. 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Slovenian Ecological Fund*

4.1.3 Savings in final energy consumption in the residential sector

Table 6: Savings in final energy consumption in the residential sector (2008–2010 and 2008–2016)

Instruments	**Energy saving [GWh]**	
	2008–2010	**2008–2016**
1. Financial incentives for the energy-efficient renovation and sustainable construction of buildings	84	210
2. Financial incentives for energy-efficient heating systems	17	53
3. Financial incentives for efficient electricity use	153	460
4. Efficient energy use for low-income households scheme	6	29
5. Energy labelling of household and other appliances	66	263
6. Compulsory division and calculation of heating costs in multi-dwelling and other buildings according to actual consumption		150
7. Energy advice network for residents(*)		
TOTAL Residential sector	**326**	**1.165**

(*) – Final energy savings are indirect.

4.2 Instruments for improving energy efficiency in the tertiary sector

In Slovenia in 2005, final energy consumption in the tertiary sector (public sector, services sector, small business, agriculture) amounted to around 5,780 GWh, which constitutes 10% of overall final energy consumption. Consumption of fuels and heat accounted for 58% and electricity consumption for 42%. In comparison with 2000, consumption was down by 17.6% in 2005; this was partly due to reduced consumption of fuels and heat, although electricity consumption was higher. Figures on final energy consumption in the tertiary sector should be treated with care since, in energy balances, figures for this sector are calculated as the difference between total national consumption and consumption in the residential, industrial and transport sectors. Notwithstanding this, we can say that the tertiary sector is seeing a highly problematic growth in electricity consumption, compounded by a very low level of interest in implementing efficient energy use projects.

Final energy consumption in the public sector is around 1,850 GWh per year. The promotion of efficient energy use in the public sector can also have a major effect on account of the promotion of the range of energy services and the strengthening of demand, with the conduct of the public sector having a large ‘demonstrational’ effect on other users.

The set of instruments for improving energy efficiency in the tertiary sector includes financial incentives for:

- the energy-efficient renovation and sustainable construction of buildings
- energy-efficient heating and ventilation systems
- efficient electricity use.

In addition to these instruments, the introduction of green public procurement will be an important support instrument for the public sector.

The promotion of efficient energy use in the tertiary sector is also supported by multisectoral and horizontal measures. These are described in Chapter 5.

A survey of public sector instruments, together with the legal bases and savings in final energy consumption, is given in Chapter 6.

4.2.1 Survey of tertiary sector instruments

Table 7: Instruments for improving energy efficiency in the tertiary sector

No.	Instrument for improving energy efficiency	Efficient energy use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
8	Financial incentives for the energy-efficient renovation and sustainable construction of buildings	• Energy rehabilitation of buildings (heat insulation of facades, heat insulation of loft spaces, window replacement) • Construction of low-energy buildings • Construction of passive buildings	2008 - 2016	96 GWh	EUR 44 million
9	Financial incentives for energy-efficient heating systems	• Replacement of unsuitable boiler capacities with high-efficiency installations, promotion of purchase of wood biomass boilers • Optimisation of heating systems • Solar systems for heating, heat pumps	2008 - 2016	183 GWh	EUR 44 million

Table 7: Instruments for improving energy efficiency in the tertiary sector (continued)

No.	Instrument for improving energy efficiency	Efficient use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
10	Financial incentives for efficient electricity use	• Promotion of energy-efficient ventilation and air-conditioning systems • Promotion of energy-efficient lighting • Introduction of intelligent meters	2008 - 2016	525 GWh	EUR 21 million
11	Green public procurement[20]	• Requirements for the purchase, rent, replacement or renovation of equipment and vehicles • Construction, purchase or rent of energy-efficient buildings • Monitoring of energy consumption in public buildings	2008 - 2016	Partly included in transitional instruments	
TOTAL (8-11)				**804 GWh**	**EUR 109 million**

[20] The instrument of contractual reduction of energy costs is presented in Chapter 4.1 (Multisectoral Instruments).

4.2.2 Description of tertiary sector instruments

Instrument	8. ***Financial incentives for the energy-efficient renovation and sustainable construction of buildings***
Type of instrument	• *Direct investment subsidies financed from budget funds, and purpose-specific loans with a subsidised interest rate*
Target group	• *Owners of buildings, managers of facilities, investors*
Efficient energy use measure	*The instrument is aimed at energy rehabilitation and the construction of low-energy and passive buildings, with emphasis being given to buildings in the public sector.* **In connection with the energy rehabilitation of buildings, this instrument will promote the heat insulation of facades, loft spaces and other construction elements, the replacement of fixtures and fittings and other measures. Investors will be encouraged to carry out these measures to a level of energy efficiency that exceeds the requirements of the regulation governing the energy efficiency of buildings.**
Effects	*The energy rehabilitation of buildings is planned to cover an additional 162,000 m^2 of building space. This will speed up the process of reducing energy consumption in this building stock, which is also the largest consumer of energy per unit of area. Promotion of the construction of low-energy buildings is planned in the 2008–2016 period (350,000 m^2), in addition to 70,000 m^2 of passive buildings.*
Expected energy savings	*With implementation of the programme, savings in final energy consumption for heating achieved by the measure will amount to 96 GWh per year. Greenhouse gas emissions will be reduced by 25 kt CO_2 per year.*
Public funding	*The estimated level of public funding required for implementation of the instrument is EUR 44 million.*
Status and timetable of implementation	*The overhauled instrument will be implemented to a significantly greater scope than has been the case so far.* *Envisaged duration of instrument: 1. 1. 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Slovenian Ecological Fund* • *Regions*

Instrument	9. ***Financial incentives for energy-efficient heating systems***
Type of instrument	• *Direct investment subsidies financed from budget funds, and purpose-specific loans with a subsidised interest rate*
Target group	• *Owners of buildings, managers of facilities, investors*
Efficient energy use measure	*The instrument is aimed at accelerating the implementation of measures to reduce energy consumption for heating in buildings, as follows:* • *replacement of unsuitable boiler capacities with high-efficiency installations, use of condensation and modular boilers, improvements to efficiency from the current 80% to 104%, and improvements to the efficiency of modular boilers to 94%* • *installation of special high-efficiency biomass boilers using firewood, pellets and woodchips. envisaged improvement in efficiency from the current 80% to 90%* • *optimisation of heating systems with investments in the following technologies: thermostat valves, regulation and hydraulic balancing of heating systems: e.g. automatic regulation valves for balancing aerial lines in multi-dwelling buildings, replacement of heating sub-stations in district heating systems* • *ventilation system with high-efficiency recovery of heat of waste air* • *solar systems for the heating of buildings and sanitary hot water* • *heat pumps for central heating that use the heat of the air, ground and surface water, or heat accumulated in the earth and stone masses.*
Effects	*The following results are planned by 2016:* • *replacement of 630 boilers* • *optimisation of 2,100 heating systems* • *installation of heating systems that use RES – solar collectors with a total surface area of 70,000 m^2 per year, and 3,500 heat pumps*
Expected energy savings	*With implementation of this programme, savings in final energy consumption for heating achieved by this measure will amount to 183 GWh per year and the prod of electricity from renewable sources to 123 GWh per year. Greenhouse gas emissions will be reduced by 75 kt CO_2 per year.*
Public funding	*The estimated level of public funding required for implementation of the instrument is EUR 44 million.*

Status and timetable of implementation	*The overhauled instrument will be implemented to a significantly greater scope than has been the case so far.* *Envisaged duration: 1. 1. 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Slovenian Ecological Fund* • *Regions*

Instrument	10. ***Financial incentives for efficient electricity use***
Type of instrument	• *Direct investment subsidies financed from budget funds, and purpose-specific loans with a subsidised interest rate*
Target group	• *Owners of buildings, managers of facilities, investors*
Efficient energy use measures	*The instrument is aimed at promoting efficient electricity use through implementation of the following measures:* • *promotion of energy-efficient ventilation and air-conditioning systems* • *co-financing and promotion of the purchase of energy-saving fluorescent lamps in buildings (with energy savings of up to 45%)* • *co-financing and promotion of energy-saving street lighting* **metering and advice provision – introduction of intelligent meters (online monitoring, remote reading), rapid metering and advice for users (short energy audit, advice regarding biggest consumers of energy – replacement, method of use, etc.).**
Effects	*The following are envisaged throughout the entire period:* • *co-financing and promotion for the purchase of 1,000,000 energy-saving light bulbs* • *installation of lighting regulation for 700 street-lighting systems and 38,000 energy-saving fluorescent lamps* • *rehabilitation of 1,000 air-conditioning systems and 2,000 ventilation systems* • *implementation of 1,500 audits and advice sessions*
Expected energy savings	*With the envisaged measures, electricity savings of 525 GWh will be made, which will indirectly reduce emissions by 121 kt CO_2.* **Electricity savings are calculated with a factor of 2.5.**
Public funding	**The estimated level of public funding required for implementation of the instrument is EUR 21 million.**
Status and timetable of implementation	*This is a new instrument whose implementation has not yet commenced.* *Envisaged duration of instrument: 1. 1. 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Slovenian Ecological Fund* • *Regions*

Instrument	11. ***Green public procurement***
Type of instrument	• *Public sector regulation*
Target group	• *public sector*
Efficient energy use measure	**The public sector is one of Europe's biggest consumers. It is estimated that public contracts are responsible for around 16% of GDP in the EU. Public procurement is an important part of public finances or tax-paying revenue in Slovenia as well, encompassing around 30% of state budget revenue in 2003 (7% of GDP).** *All those that use public procurement must be bound under appropriate green public procurement regulations so that they include environmental aspects in tender conditions and take into account the lifecycle of products and services. Environmental criteria for individual groups of products will be gradually introduced and published; they will be sufficiently clear, easy to use and accessible to all those that engage in public procurement. The NEEAP will regulate green public procurement in the following areas: construction and reconstruction of buildings, the purchase of cars and public transport vehicles that use alternative types of fuel, the purchase of energy-efficient computers and other electrical and electronic office equipment, the purchase and rent of energy-efficient buildings, the purchase of energy produced from renewable energy sources, etc.* *In the initial phase, the project will focus on criteria that have already been developed as part of other projects (e.g. energy efficiency of buildings and equipment, criteria for products that wish to acquire the EU environmental label, etc.). Guidelines on energy efficiency and energy savings will be published as evaluative criteria for public invitations to tender. Compulsory training for all civil services involved in the implementation of green public procurement is planned.*
Effects	*With this measure the public sector will make use of its considerable purchasing power to choose goods and services that take into account and respect the environment, thus making an important contribution to sustainable development. Although the price of products with such characteristics is not the lowest on the market, the savings made through their use lead to financial savings and a reduction in the environmental burden in the long term. Green public procurement also means setting an example to industry and influencing it to the extent that it develops new environmental technologies and manufactures more environment-friendly products.*
Expected energy savings	*The instrument will have direct and indirect effects. Estimates of the effects will be drawn up as part of the Operational Programme of Green Public Procurement, which is being prepared by the Ministry of the Environment and Spatial Planning.*
Public funding	*An estimate of the public funds required will be drawn up as part of the Operational Programme of Green Public Procurement.*

Status and timetable of implementation	*Regulations for the introduction of this instrument will be adopted in their entirety by the end of 2009.*
Institution(s) responsible	• *Ministry of Finance* • *Ministry of the Environment and Spatial Planning* • *Ministry of Public Administration*
Provider(s)	• *Ministry of Finance* • *Ministry of the Environment and Spatial Planning* • *Ministry of Public Administration* • *budget users*

4.2.3 Final energy savings in the tertiary sector

Table 8: Savings in final energy consumption in the tertiary sector (2008–2010 and 2008–2016)

Instruments	**Energy saving [GWh]**	
	2008–2010	**2008–2016**
8. Financial incentives for the energy-efficient renovation and sustainable construction of buildings	40	96
9. Financial incentives for energy-efficient heating systems	41	183
10. Financial incentives for efficient electricity use	138	525
11. Green public procurement (*)		
TOTAL Tertiary sector	**219**	**804**

(*) – Savings in end-use energy will be evaluated in accordance with a methodology to be drawn up by the EU.

4.3 Instruments for improving energy efficiency in the industrial sector

In 2005 the industrial sector accounted for 35% of the total amount of final energy consumed (almost 20,000 GWh). Electricity accounted for 36% of the final energy consumed in the industrial sector (7,176 GWh). In comparison with 2000, consumption of fuels and heat increased by 14.8% and electricity by 30.7%. The growth in electricity consumption is particularly worrying, with an annual growth rate of 5.5% in the last six years. In the industrial sector, the greatest share of electricity is used for electrical motors (around 50%, almost half of which is used for pumps and ventilator). Around 10% is used for the production of compressed air, around 8% for lighting, around 5% for cooling, around 5% for ventilation and air-conditioning, and other amounts for various purposes (e.g. technological processes).

The instrument for improving energy efficiency in the industrial sector supports technologies such as:

- energy-efficient electrical motors
- frequency regulation of engine revolutions
- energy-efficient pumps and ventilators
- energy-efficient systems for the preparation of compressed air
- energy-saving lighting.

The promotion of efficient energy use in the industrial sector is also supported by multisectoral and horizontal measures. These are described in Chapter 5.

4.3.1 Survey of instruments in the industrial sector

Table 9: Instruments for improving energy efficiency in the industrial sector

No.	Instrument for improving energy efficiency	Efficient energy use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
12.	Financial incentives for efficient electricity use	• energy-efficient electrical motors • frequency regulation of engine revolutions • energy-efficient pumps and ventilators • energy-efficient systems for the preparation of compressed air • energy-saving lighting.	2008 - 2016	840 GWh	EUR 15 million
TOTAL (12)				**840 GWh**	**EUR 15 million**

4.3.2 Survey of instruments in the industrial sector

Instrument	12. ***Financial incentives for efficient electricity use measures***
Type of instrument	*Financial instruments:* • *non-returnable investment funds* • *loans with a subsidised interest rate*
Target group	**Company management, energy managers, equipment suppliers**
Efficient energy use measures	*The measures encompass investments in:* • *energy-efficient electrical motors* • *energy-efficient pumps and ventilators* • *frequency regulation of engine revolutions* • *energy-efficient systems for the preparation of compressed air* • *energy-saving lighting.*
Effects	*The individual measures are expected to yield the following effects:* • *Energy-efficient electrical motors – replacement of electrical motors with high-efficiency motors and replacement of re-dimensioned motors with smaller motors enables a 4% saving in electricity which also increases the efficacy of motors with longer operating times. Over the entire period, 68,000 motor units will be replaced.* • *Frequency converters for the regulation of engine revolutions, which enable an electricity saving of at least 20%. An additional 50,000 frequency converters will be installed over the entire period.* • *Pumps – account for around 23% of the electricity used for electrical motors. Replacement of pumps with energy-saving pumps (with frequency converters) achieves an electricity saving of 25%. Over the entire period, 1,100 pumps will be replaced.* • *Ventilators – account for around 16 % of the electricity used for electrical motors. Replacement of ventilators with energy-saving ventilators (with frequency converters) achieves an electricity saving of 25%. Over the entire period, 800 ventilators will be replaced.*

Effects	**Compressed air – by eliminating leaks, regulating the outlet of compressed air and optimising regulation, electricity consumption will be reduced by at least 10%. Replacement of compressors will achieve a saving of around 25%. Over the entire period, 550 compressed air systems will be optimised and 800 compressors replaced.** • *Energy-efficient lighting – the installation of energy-efficient light bulbs(fluorescent lamps and electronic ballast) and optimisation of the regulation of lighting, etc., electricity consumption will be reduced by around 45%. Over the entire period, 280,000 lamps will be replaced.*
Expected energy savings	*The co-financing of efficient electricity use measures in industry will enable savings of 840 GWh per year and indirectly reduce emissions by 202 kt of CO_2 per year.* **Electricity savings are calculated with a factor of 2.5.**
Public funding	*The estimated level of public funding required for implementation of the instrument is EUR 15 million.*
Status and timetable of implementation	*This is a new instrument whose implementation has not yet commenced.* *Envisaged duration of instrument: 1. 1. 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Slovenian Ecological Fund*

4.3.3 Savings in final energy consumption in the industrial sector

Table 1: Savings in final energy consumption in the industrial sector (2008–2010 and 2008–2016)

Instruments – industry	**Energy saving [GWh]**	
	2008–2010	**2008–2016**
12. Co-financing of for efficient electricity use measures	336	840
TOTAL Industry	**336**	**840**

4.4 Instruments for improving energy efficiency in the transport sector

In 2005, final energy consumption in the transport sector amounted to 17,945 GWh, or 31% of all final energy consumption in Slovenia. Consumption of liquid fuels accounted for by far the greatest portion of final energy consumption (98.9%). The remainder was made up of electricity consumption. Between 2000 and 2005, final energy consumption increased by an average of 3.9% per year.

In recent years the transport sector has been marked primarily by rapid growth in road freight transport (chiefly transit), a large increase in the number of private cars, and the predominance of short-distance journeys and the consequent major reduction in public transport provision. The number of passengers has fallen fivefold since 1990; in the same period, the number of passenger kilometres travelled has fallen by factor of 6.5 and the number of kilometres driven has halved. The proposed set of instruments is therefore targeted towards the resolution of these key problems. They can be condensed into four substantive areas, as follows:

1. promotion and competitiveness of public transport
2. promotion of sustainable freight transport
3. increase in the energy efficiency of road motor vehicles
4. construction of cycle paths and promotion of cycling.

The construction and modernisation of the existing infrastructure (chiefly the rail and road networks) is a key condition for achievement of the desired effects in the area of public transport and sustainable freight transport. The proposed measures constitute indispensable additional activities for establishing the competitiveness and intermodality of transport, while educating users and making them aware can have an important effect on changing established transport patterns and habits.

Slovenia has no direct influence on increasing energy efficiency in vehicle manufacture (the EU's role in concluding voluntary agreements for the car industry). However, the proposed additional instruments can have a significant effect on the vehicles market and on consumer choice, encouraging them to opt for vehicles employing the latest standards (EURO) that save energy and have a lower environmental impact.

The construction of cycle paths and a range of promotional activities can revive cycling as a traditionally acceptable means of transport which, in tandem with other means of public transport (train, bus), constitutes a very effective personal transport alternative with minimum environmental impact and multiplicative effects on the development of tourism in Slovenia.

In parallel with all the above-mentioned measures, measures must be prepared to reduce requirements for mobility and the extent of traffic works. The introduction of opportunities for distance-working, the use of modern communications technologies (e.g. videoconferencing for state administration meetings) and encouraging private companies to promote sustainable forms of transport among their employees (car

pools, public transport, cycling, etc.) can contribute greatly to this. A regulation will be adopted in 2008 allowing state administration employees to work from home.

Up to now the Ministry of Transport has not dealt in detail with efficient energy use in transport in its strategic and development documents. The Operational Programme of Environmental and Transport Infrastructure Development 2007–2013 includes development priorities for transport development. The Ministry of Transport will draw up a detailed programme for the implementation of efficient energy use measures in the transport sector within nine months of adoption of the NEEAP.

4.4.1 Survey of transport sector instruments

Table 11: Instruments for improving energy efficiency in the transport sector

No.	Instrument for improving energy efficiency	Efficient energy use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
13	**Promotion and competitiveness of public transport** o financial incentives and stimulative subsidising of public transport o promotion, awareness-raising and provision of information on the advantages of public transport o fiscal instruments for restricting private car access to city centres	• unified (combined) ticket • harmonisation of timetables, increase in accessibility, frequency, punctuality, speed and quality of public transport routes • price accessibility • stimulative subsidising of public road transport in relation to number of passenger kilometres travelled (PKM) and not to number of kilometres driven on a specific route • establishment of intermodal terminals • establishment of information centres	2008 - 2016	**191 GWh**	EUR 15 million[21]

[21] **The promotion and competitiveness of public transport is included in the 'Transport Infrastructure – ERDF' development priority within the OP ETID 2007–2013**

		• introduction of school and education programmes (nursery and primary schools) • selective car-park charging • introduction of cordon tolls and vignette stickers			

Table 11: Instruments for improving energy efficiency in the transport sector (continued)

No.	Instrument for improving energy efficiency	Efficient energy use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
14	**Promoting sustainable freight transport:** o financial incentives, establishment of intermodality and an increase in rail freight transport o fiscal instruments for road freight transport	• development of logistics centres, transhipment terminals and intermodal hubs • use of piggyback trains • inclusion of external costs in freight transport tolls	2008 - 2016	294 GWh	EUR 10 million[22]
15	**Increasing in the energy efficiency of road motor vehicles** o regulations on the energy-efficiency labelling of private vehicles o fiscal instruments for the taxing of road motor vehicles (private and freight vehicles, and buses) o regulations introducing green public procurement o financing of promotional and education activities	• energy labelling of private vehicles • proportionate taxation of road motor vehicles in relation to the ecological standard and the energy efficiency of the vehicle • green public procurement for the purchase of energy-efficient and environmentally-friendly vehicles • promotional and education activities (safe-driving schools, etc.)	2008 - 2016	198 GWh	EUR 6 million

[22] **The promotion of sustainable freight transport is one of the development guidelines of the OP ETID 2007–2013.**

Table 11: Instruments for improving energy efficiency in the transport sector (continued)

No.	Instrument for improving energy efficiency	Efficient energy use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
16	**Constructing cycle paths and support facilities, and promoting cycling** o financial incentives for the construction of cycle paths and support facilities o elimination of obstacles to the admission of bicycles on trains and buses o financing of promotional and education activities	• construction of 500 km of cycle paths and other cycling infrastructure (parking areas for cycles, etc.) • promotional and education activities	2008 - 2012	**38 GWh**	**EUR 8 million**[23]
	TOTAL (13-16)			**721 GWh**	**EUR 39 million**

[23] **The OP ETID 2007–2013 provides for funding of EUR 7.7. million for implementation.**

4.4.2 Description of transport sector instruments

Instrument	***13. Promotion and competitiveness of public transport*** • *financial incentives and stimulative subsidising of public transport* • *promotion, awareness-raising and provision of information on the advantages of public transport* • *fiscal instruments for restricting private car access to city centres*
Type of instrument	• *Direct subsidies from the budget and taxes on private vehicles*
Target group	• *Public transport providers* • *Professional and educational institutions, NGOs, general public* • *Private vehicle transport*
Efficient energy use measure	• *Unified (combined) tickets and price accessibility* • *Stimulative subsidising of public road transport in relation to number of passenger kilometres travelled (PKM) and not to number of kilometres driven on a specific route* • *Harmonisation of timetables, increase in accessibility, frequency, punctuality, speed and quality of public transport routes, increase in car-park charges* • *Establishment of intermodal terminals and information centres* • *Introduction of school and education programmes (nursery and primary schools)* • *Introduction of cordon tolls and vignette stickers*
Effects	*The main aim of the measures is to increase the scope of public transport and make energy savings by reducing private vehicle transport. By establishing intermodality (train, bus, bicycle, etc.) and high-quality public transport, and carrying out promotional activities and measures to increase competitiveness, we are aiming to return to 1990 levels of scope and occupancy of public transport by the end of the period.*
Expected energy savings	**Reduction in the consumption of liquid fuels and greenhouse gas emissions is estimated at 191 GWh[24] (or 52 kt CO_2) per year.**
Public funding	*The estimated level of public funding required for implementation of the instrument is EUR 15 million.*
Status and timetable of implementation	*The subsidising of public transport is already underway. However, additional instruments for greater competitiveness have not yet begun to be implemented.* *Envisaged duration of instrument: 1. 1. 2008 to 31 December 2016.*

[24] This estimate includes the 10% estimated total potential from the OP RGGE, if the major part of the potential is attributed to the construction of transport infrastructure which is the precondition for realisation of the programme.

Institution(s) responsible	• *Ministry of Transport*
Provider(s)	• *Ministry of Transport* • *regions, local communities*

Instrument	***14. Promoting sustainable freight transport*** • *Financial incentives for the establishment of intermodality and an increase in rail freight transport* • *Fiscal instruments for road freight transport*
Type of instrument	• *Direct subsidies from the budget and taxes on road freight vehicles*
Target group	• *Freight transport operators (Slovenian Railways, transport companies, etc.)* • *Road freight transport*
Efficient use measure	• *Development of logistics centres, transhipment terminals and intermodal hubs* • *Use of piggyback trains* • *Inclusion of external costs in tolls and other taxes on freight transport*
Effects	*The main aim of the measures is to limit the growth of road freight transit transport and secure a transition to rail freight transport to the greatest possible extent. These measures relate to the necessary construction and modernisation of railway infrastructure, which is a precondition for implementation. The establishment of intermodality and higher-quality rail freight transport services will, in tandem with more realistic burdens placed on road freight transport (inclusion of all costs in fees for the use of transport infrastructure), increase the competitiveness of rail transport. With implementation of these measures, we hope to redirect at least half the current level of transit freight transport onto the railways.*
Expected energy savings	*Implementation of the programme will reduce the liquid fuel consumption and greenhouse gas emissions by 294 GWh[25] (or 79 kt of CO_2) per year.*
Public funding	*The estimated level of public funding required for implementation of the instrument is EUR 10 million.*
Status and timetable of implementation	*Incentives for rail freight transport are already being implemented to a limited extent. Other instruments for greater competitiveness have not yet commenced implementation.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of Transport*
Provider(s)	• *Ministry of Transport* • *Ministry of Economy* • *Slovenian Railways*

[25] This estimate includes the 10% estimated total potential from the OP RGGE, if the major part of the potential is attributed to the construction of transport infrastructure which is the precondition for realisation of the programme.

Instrument	***15. Increasing in the energy efficiency of road motor vehicles*** • *Regulations on the energy labelling of private vehicles* • *Fiscal instruments for the taxing of private and freight vehicles, and buses* • *Regulations introducing green public procurement* • *Financing of promotional and education activities*
Type of instrument	• *Direct subsidies from the budget for promotional and education activities, and taxes on private vehicles*
Target group	• *General public* • *Companies* • *public sector* • *Professional and educational institutions, NGOs*
Efficient use measure	• *Increasing the energy efficiency of private vehicles* • *Proportionate taxation of private and freight vehicles and buses in relation to environmental standards (EURO) and the energy efficiency of vehicles (specific emissions of CO_2/km)* • *Green public procurement for the purchase of energy-efficient and environmentally-friendly vehicles* • *Promotional and education activities (safe-driving schools, etc.)* **The introduction of taxes proportionate to the energy-efficiency of a vehicle could be neutral, and a minimal increase could cover the other costs for implementation of the measures.**
Effects	**The main aim of the measures is to increase the environmental acceptability and energy efficiency of road motor vehicles in Slovenia, The planned measures, which transpose the main measures contained in the EU's strategy to reduce CO_2 emissions from private motor vehicles and increase efficient fuel use, will, with more widely recognised labelling, promotion, education and the proportionate taxing of vehicles in relation to energy efficiency, encourage buyers of new vehicles to make a more environmentally acceptable choice and, at the same time, replace their environmentally unacceptable old vehicles. The taxing of freight vehicles and buses, where the taxes levied would increase according to a vehicle's deviation from the EURO standard, will promote more rapid modernisation of vehicle fleets and, consequently, contribute to reducing fuel consumption and adverse environmental impacts. The prescribed indicators of efficiency for individual vehicle types in the implementation of public procurement procedures will have an important effect**

	on the purchase of energy-saving vehicles.
Expected energy savings	*Implementation of the programme will reduce annual liquid fuel consumption and greenhouse gas emissions by, respectively, 198 GWh[26] and 53 kt CO_2.*
Public funding	*The estimated value of the public funding required for implementation of the instrument is EUR 6 million.*

[26] Only 20% of the entire reduction estimated by the OP RGGE is taken into account, since the greater part can be attributed to the EU's voluntary agreement and measure.

Status and timetable of implementation	**The energy labelling of private vehicles is already underway. Additional (primarily tax-related) instruments for increasing the energy efficiency of road motor vehicles have not yet been commenced.** **Envisaged duration of instrument: 1 January 2008 to 31 December 2016.**
Institution(s) responsib*le*	• *Ministry of Transport* • *Ministry of the Environment and Spatial Planning* • *Ministry of Internal Affairs* • *Ministry of Finance*
Provider(s)	• *Ministry of the Environment and Spatial Planning* • *Ministry of Internal Affairs* • *Ministry of Finance*

Instrument	***16. Constructing cycle paths and support facilities, and promoting cycling*** • *Financial incentives for the construction of cycle paths and support facilities* • *Elimination of obstacles to the admission of bicycles on trains and buses* • *Financing of promotional and education activities*
Type of instrument	• *Direct subsidies from the budget*
Target group	• *General public* • *Professional and educational institutions, NGOs*
Efficient use measure	• *Construction of 500 km of cycle paths and other cycling infrastructure* • *Promotional and education activities*
Effects	*The main aims in constructing cycle paths and support facilities are to contribute to changing people's choice of transport means, provide cyclists with a suitable level of safety, reduce adverse effects on the environment, provide links with the international cycling network, and contribute to the development of tourism. Cycling is an alternative to travel by car and a very efficient supplement to other forms of public transport (combined journeys, cycle rental, etc.) With implementation of the measures, we wish to see at least 10% of daily commutes in the summer and transitional periods made by bicycle.*
Expected energy savings	*The estimated annual reductions in liquid fuel consumption and greenhouse gas emissions brought about by the programme are, respectively, 38 GWh and 10 kt CO_2.*
Public funding	*The estimated level of public funding required for implementation of the instrument is EUR 7.7 million.*
Status and timetable of implementation	*The current scope of construction of cycle paths and other necessary infrastructure, and of educational activities, will be increased considerably with implementation of these measures.* *Envisaged duration of instrument: 1. 1. 2008 to 31.12.2012.*
Institution(s) responsible	• *Ministry of Transport*
Provider(s)	• *Ministry of Transport* • *Regions, local communities* • *Slovenian Railways* • *Bus operators*

4.4.3 Savings in final energy consumption in the transport sector

The total savings in final energy consumption in the transport sector are estimated, with the implementation of the measures described for the entire 2008–2016 period, as being 721 GWh (see Table 12). We expect greater realisation of the estimated potential at the end of the period, when the construction of the necessary infrastructure will establish the conditions for the implementation of the proposed measures; for this reason, the estimate of the savings made in the first three years (2008–2012) represents only 14% of the total estimated potential.

Table 12: Savings in final energy consumption in the transport sector (2008–2010 and 2008–2016)

Instruments – transport	**Energy saving [GWh]**	
	2008–2010	**2008–2016**
13. Promotion and competitiveness of public transport	32	191
14. Promoting sustainable freight transport	33	294
15. Increasing in the energy efficiency of road motor vehicles	33	198
16. Construction of cycle paths and promotion of cycling	24	38
TOTAL Transport	**122**	**721**

5 Multisectoral instruments in general consumption and the industrial sector

Multisectoral and horizontal instruments for improving energy efficiency operate in at least two (or all) sectors. Multisectoral and horizontal measures have been formulated that, through their activities, are oriented towards general consumption (residential sector, tertiary sector) and industry, but do not cover the transport sector (with the exception of the payment of excise duty on fuels).

The set of instruments within multisectoral and horizontal measures can be condensed into four substantive areas:

- legislative instruments (legislation needs to be supplemented, particularly with the preparation of regulations on buildings and products)
- financial instruments (environmental tax, excise duty and electricity purchase prices)
- other instruments (information, awareness-raising and advice, education, research and development, implementation of energy audits, etc.)
- exemption from the payment of the environmental tax (voluntary agreements).

The implementation of energy use management programmes for end-consumers (Demand Side Management) as a public service obligation of a public energy company (distribution network system operator, transmission network system operator) and of an energy company within the framework of implementation energy consumption reduction programmes for end-consumers on the basis of market principles is being introduced as a new instrument. In accordance with the reformulation of legislation (transposition of Directive 2006/32/EC, Article 6, into Slovenian legislation), it is possible that energy companies will be obliged to ensure energy savings to a specified extent in relation to the sale of energy to end-consumers or buyers.

5.1 Multisectoral instruments

5.1.1 Survey of multisectoral instruments

Table 13: Multisectoral instruments for improving energy efficiency

No.	Instrument for improving energy efficiency	Efficient energy use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
17	Regulations on the energy performance of buildings	• minimum requirements for energy performance in the construction and reconstruction of buildings • energy certification of buildings (energy performance certificate) • regular inspections of boilers and air-conditioning systems	2008 - 2016	319 GWh	
18	Requirements for the minimum energy efficiency of products	• minimum requirements for the energy efficiency of products	2008 - 2016		
19	Co-financing of implementation of energy audits	• implementation of energy audits	2008 - 2016	Savings are indirect	
20	System of guaranteed electricity purchase prices	• investments in high-efficiency cogeneration of heat and electricity, and the production of electricity from RES	2008 - 2016	102 GWh[27]	EUR 23 million

[27] **Savings at the primary energy level for measures in the residential and services sectors are taken into account. Alignment with the EU methodology will be necessary for implementation of the Directive.**

5.1.1 Survey of multisectoral instruments

continued)

No.	Instrument for improving energy efficiency	Efficient energy use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
21	Contractual reduction in energy costs	• energy performance contracting • contractual ensuring of high-efficiency energy supply	2008 - 2016		
22	Energy use management programmes for end-consumers (DSM)	*Residential/tertiary/industrial sectors* • *energy-efficient electricity use: household appliances, lighting/ lighting, ventilation and air-conditioning systems/electrical motor systems, lighting, ventilation and air-conditioning systems, compressed air* *Multisectoral measure* • *efficient systems for heating and the preparation of hot water* • *energy rehabilitation of buildings measures* *Energy purchase tariffs* • *formulation of energy sale tariffs that promote efficient energy use and the use of renewable energy sources*	2008 - 2016 2008 - 2016	183 GWh + 96 GWh	EUR 10 million EUR 5 million
TOTAL (17-22)				**700 GWh**	**EUR 38 million**

5.1.2 Description of multisectoral instruments

Instrument	17. ***Regulations for the energy performance of non-industrial buildings***
Type of instrument	• *Regulations for the energy performance of buildings in accordance with Directive 2002/91/EC*
Target group	• *Architects* • *Owners of buildings or individual parts thereof* • *Market investors* • *Issuers and producers of energy performance certificates* • *Issuers and performers of inspections of air-conditioning systems* • *Chimney maintenance companies that inspect boilers*
Efficient energy use measures	*Regulations on the energy performance of non-industrial buildings have an impact on increasing the efficiency of energy use in buildings in general consumption, which represents around 40% of final energy. The greater part of this energy is used for ensuring suitable living and working conditions, the preparation of hot sanitary water and lighting. Of primary importance in achieving energy savings are improvements to the thermal characteristics of building shells and more energy-efficient systems for heating, ventilation, cooling, hot water preparation and lighting systems.* *The provisions of these regulations that increase the energy performance of buildings are:* • *the setting of minimum thermal characteristics for construction elements, the highest permitted needs for heating and cooling, and the highest permitted consumption of final energy for new buildings or for buildings that are being reconstructed The gradual reduction of these limit values is envisaged;* • *the mandatory production of a feasibility study for alternative systems for supplying buildings with energy (use of RES, cogeneration, heat pumps, connection to the district heating system), which is a constituent part of documentation for the acquisition of a construction permit;* • *a mandatory energy performance certificate for the acquisition of an operating permit for a new building, or when a building is sold or rented;* • *the mandatory display of an energy performance certificate in a visible place in buildings with a floor area exceeding 1000 m^2 in which public institutions or institutions performing public services are located and which are frequently visited by members of the public;* • *mandatory regular inspections of boilers and the mandatory replacement of old boilers that do not comply with environmental regulations;* • *mandatory regular inspections of air-conditioning systems* • *the establishment of a network of independent professionals qualified and licensed to produce energy performance certificates and inspect air-conditioning systems.*

Effects	*The effects of the energy performance of buildings regulations are as follows:* • *lower limit values for the heating characteristics of construction elements and lower permitted needs for heating in comparison with the previous regulation and the introduction of the highest permitted consumption of final energy by buildings ensure the construction of new and the reconstruction of existing buildings that use less energy;* • *the mandatory production of a feasibility study for alternative systems for the supply of buildings with energy ensures that information is provided that allows an investor to opt for more environmentally-friendly energy supply;* • *a mandatory energy performance certificate for buildings ensures that the energy efficiency of new buildings is checked against the prescribed restrictions, and gives a buyer or leaseholder information on energy costs and the measures necessary for increasing the energy efficiency of the building;* • *mandatory regular boiler inspections ensure that boilers work more efficiently and provide information on the possible need to replace old boilers;* • *mandatory inspections of air-conditioning systems ensure that these systems work more efficiently, and give information on possible measures to increase their energy efficiency or on the need to replace them.*
Expected energy savings	*This instrument will save around 319 GWh of final energy per year and reduce greenhouse gas emissions by 86 kt of CO_2 per year. In determining these savings, savings achieved by lowering the limit values for the thermal characteristics of new buildings and inspecting boilers have been taken into account.*
Public funding	*No public funds are required for implementation of this instrument.*
Status and timetable of implementation	*The Instrument will be partly implemented in accordance with the Rules on the Thermal Insulation and Energy Performance of Buildings and the Rules on the Ventilation and Air-Conditioning of Buildings from 2002*. *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Ministry of the Environment and Spatial Planning*

Instrument	18. ***Requirements for the minimum energy efficiency of products***
Type of instrument	• *Regulations on the minimum energy efficiency of products*
Target group	• *manufacturers of products that use energy* • *buyers of products*
Efficient use measures	*Minimum energy efficiency is prescribed for the following products:* • *refrigerators, freezers and combinations thereof* • *ballast for fluorescent lighting* • *new hot-water boilers using liquid or gaseous fuel* *In the EU, regulations on minimum energy efficiency for street lighting, household appliances, hot-water heaters, computers, televisions, electrical motors, etc. are being drawn up pursuant to Directive 2005/32/EC.*
Effects	*As a result of the minimum energy efficiency requirements that must be met by products before they may enter the market, the energy consumed by these products will be reduced.*
Expected energy savings	*Savings will be determined later on the basis of EU methodology.*
Public funding	*No public funds are required for implementation of this instrument.*
Status and timetable of implementation	*The instrument is already being implemented for refrigerators, freezers and combinations thereof, ballast for fluorescent lighting and new hot-water boilers using liquid or gaseous fuel.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Ministry of the Environment and Spatial Planning* • *Ministry of Economy*

Instrument	19. ***Co-financing of implementation of energy audits***
Type of instrument	• *Informational*
Target group	• *small and medium-sized companies in the tertiary and industrial sectors* • *public sector* • *multi-dwelling buildings*
Efficient energy use measure	• *implementation of energy audits* • *Provision of questionnaires and computer programmes for simple energy audits* • *Establishment of a scheme of qualified and certified energy audit providers*
Effects	*Energy audits, whose scope is adjusted to the volume of energy consumption and which are carried out by qualified staff, give energy consumers the necessary information on the technical and economically justified organisational and investment measures for increasing energy efficiency.*
Expected energy savings	*The energy savings are indirect and taken into account in other efficient energy use instruments in the industrial, tertiary and residential sectors.*
Public funding	*The public funding for implementation of the instrument is included in the funding for implementation of instrument no. 23.*
Status and timetable of implementation	*The instrument is being implemented to a limited extent; energy audits are being planned to a wider extent.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Slovenian Ecological Fund*

Instrument	20. ***System of guaranteed electricity purchase prices***
Type of instrument	• *Financial incentives for operations: the compulsory purchase and the level of the purchase price or premium for electricity produced from renewable energy sources and from the high-efficiency cogeneration of heat and electricity are ensured.*
Target group	*The instrument is aimed at the residential, tertiary and industrial sectors, as follows:* • *potential investors in systems for the qualified production of electricity* • *existing qualified producers of electricity.* *According to the Energy Act, qualified producers of electricity are defined as producers of electricity from renewable energy sources and in heating plants with an above-average efficiency of use of fossil fuels (cogeneration of heat and electricity).*
Efficient use measure	*Through a favourable purchase price or premium for electricity, the instrument encourages the modernisation of existing systems and the construction of new units. The potentials are considerable and vary by sector according to technology. The NEEAP takes into account only those installations that are not included in the emission allowance trading system.* *The level of the purchase price and premium differ according to category of producer.* *Preparations are being made for the overhauling of the scheme. The financial incentives system will also be expanded to medium-sized and large industrial heating plants and systems in the tertiary sector. Producers will receive support for production that will achieve the required levels of efficiency for high-efficiency cogeneration and energy savings from Directive 2004/08/EC and by meeting the requirements of Directive 2001/77/EC for the production of electricity from renewable energy sources.* *The instrument promotes the implementation of projects.* • *high-efficiency cogeneration of heat and electricity in all sectors with the exception of transport* • *production of electricity from renewable energy sources: cogeneration on the basis of biomass[28], photovoltaic systems, etc.*

[28] The system promotes the development of cogeneration in other activities as well, e.g. district heating systems, which are not part of the Directive.

Effects	*The instrument will, by 2016, stimulate 20 MW_e of new capacities in the residential and tertiary sectors with the production of 138 GWh of electricity per year.*
Expected energy savings	*These systems will reduce fuel consumption in relation to separate production by 102 GWh per year, and will also reduce greenhouse gas emissions by at least 20 kt of CO_2 per year.*
Public funding	*The estimated value of public funds (supplement to the network charges for compulsory electricity purchase) required for implementation of the instrument amounts to EUR 23 million.*
Status and timetable of implementation	*The instrument is already underway, as is an audit of the purchase price scheme. The overhauled instrument will be introduced in 2008 and carried out, it is anticipated, until 31 December 2016.*
Institution(s) responsible	• *Ministry of Economy*
Provider(s)	• *Ministry of Economy*

Instrument	21. ***Contractual reduction in energy costs***
Type of instrument	• *Promotion of the energy services market*
Target group	• *Public sector (hospitals, retirement homes, schools, nursery schools, etc.), small and medium-sized companies*
Efficient use measure	• *Promoting energy services in the areas of contractual provision of energy savings and the contractual provision of cost-effective energy supply* • *Removing legal barriers to the use of financial instruments, preparing sample contracts and procedures* • *Specialist support to clients primarily in the public sector for preparing projects, signing contracts and evaluating the effects* • *Establishing a qualified energy service provider scheme*
Effects	*The main aim of the contractual reduction in energy costs is the inclusion of private investors in the implementation of efficient energy use measures without the engagement of the public sector's own financial resources. The contractual reduction in energy costs links investment and operating procedures. The provider (contracting party) finances and realises energy saving measures and implements them within the agreed period. Because payment is directly dependent on the saving made, the provider is the bearer of the business risk. The pilot project in the Municipality of Kranj and other projects demonstrate that it is possible to reduce energy consumption in public buildings by between 15 and 30%.*
Expected energy savings	*The instrument supports the implementation of measures from Chapter 4.2.2 (the effects have already been evaluated). This instrument also reduces the need for public funds for investments in this area.*
Public funding	*No public funds are required for implementation of this instrument.*
Status and timetable of implementation	*The instrument has been implemented to a limited extent up to now. The legal bases allow implementation of the instrument; however, there is a lack of experience with these types of project, primarily in the public sector.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of Finance* • *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Ministry of the Environment and Spatial Planning* • *Slovenian Ecological Fund*

Instrument	22. ***Energy consumption management programmes for final customers (DSM)***
Type of instrument	• *Obligation to provide a public service on the part of energy companies (distribution network system operator, transmission network system operator)* • *Implementation on the basis of market principles (energy companies)*
Target group	• *Electricity consumers* • *Companies supplying energy connected to the networks*
Efficient energy use measures	*Companies supplying energy connected to the networks carry out efficient energy use projects for final customers, particularly in the residential and tertiary sectors and in small and medium-sized companies in the manufacturing industry.* *The instrument will ensure implementation of the following efficient energy use measures:* *Residential sector* • *energy-efficient electricity use: household appliances, lighting* *Tertiary sector* • *energy-efficient electricity use: lighting, ventilation and air-conditioning systems* *Industrial sector* • *efficient electricity use: electrical motor systems, lighting, ventilation and air-conditioning systems, compressed air* *Multisectoral measure* • *efficient systems for heating and the preparation of hot water* • *energy rehabilitation of buildings measures* *Energy purchase tariffs* • *formulation of energy sale tariffs that promote efficient energy use and the use of renewable energy sources*
Effects	*For implementation of the measures:* • *regulations for implementation of the DSM instrument and the monitoring of programmes (pursuant to existing legislation – Energy Act – and with Directive 2006/32/EC, Article 6) will be drawn up* • *providers will be trained* • *a pilot project will be carried out in parallel* *In accordance with the reformulation of legislation (transposition of Directive 2006/32/EC, Article 6, into Slovenian legislation), it is possible that energy companies will be obliged to ensure energy savings to a specified extent in relation to the sale of energy to end-customers.*

Expected energy savings	*At this stage of the planning of the activity, it is envisaged that around 10% of the above-mentioned measures will be implemented on the basis of this instrument and the remaining 90% with financial incentives from the budget. On these assumptions, the savings resulting from the proposed measures will be 183 GWh for the residential sector and 96 GWh for the tertiary sector (giving a total of 279 GWh). Greenhouse gas emissions will be reduced by 84 kt of CO_2. The scope of the measures implemented on the basis of this instrument will be determined more precisely upon transposition of Directive 2006/32/EC (Article 6) into Slovenian legislation.*
Public funding	*The estimated level of public funding required for implementation of the instrument is EUR 15 million.*
Status and timetable of implementation	*This is a new instrument whose implementation has not yet commenced. The legal bases enabling implementation are provided by the Energy Act. The programme implementation costs may, with the consent of the Ministry of the Economy, be covered partly or wholly from supplements to the network charges contained in the price for use of the network.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of Economy* • *Ministry of the Environment and Spatial Planning* • *Energy Agency of the Republic of Slovenia*
Provider(s)	• *Distribution network system operator* • *Transmission network system operator* • *Energy companies, energy suppliers*

5.1.3 Savings in final energy consumption – multisectoral instruments

Table 14: Savings in final energy consumption – multisectoral instruments (2008–2010 and 2008–2016)

Instruments	**Energy saving [GWh]**	
	2008–2010	**2008–2016**
17. Regulations on the energy performance of buildings	71	319
18. Requirements for the minimum energy efficiency of products(*)		
19. Co-financing of implementation of energy audits (*)		
20. System of guaranteed electricity purchase prices (*)	11	102
21. Contractual reduction in energy costs (*)		
22. Energy consumption management programmes for final customers (DSM)	92	279
TOTAL Multisectoral instruments	**174**	**700**

(*) – Savings in end-use energy will be evaluated in accordance with a methodology to be drawn up by the EU.

5.2 Horizontal instruments

5.2.1 Survey of horizontal measures

Table 15: Horizontal instruments for improving energy efficiency

No.	Instrument for improving energy efficiency	Efficient energy use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
23	Awareness-raising, information, promotional and training programmes, demonstration projects	• Preparation and implementation of a plan for long-term information provision, awareness-raising and training of individual target groups • Information programmes and promotional campaigns • Training of energy service providers • Preparation and implementation of demonstrational projects	2008 - 2016		EUR 30 million
24	Education programmes	• Inclusion of efficient energy use and RES contents in school and study programmes • Introduction of new study courses • Supplementing and amendment of curriculums	2008 - 2016		

Table 15 5.2.1 Survey of horizontal measures

No.	Instrument for improving energy efficiency	Efficient energy use measure	Period of implementation	Energy saving in 2016	Public funding 2008–2016
25	Provision of information to consumers on energy use, transparent accounting and other information	• Provision of information on prices and actual energy consumption • Other useful information on measures available for improving energy efficiency	2008 - 2016		
26	Environmental tax for air pollution caused by CO_2 emissions	• Environmental tax on fuel use	2008 - 2016		
27	Excise duties on fuels and electricity	• Excise duties on fuels and electricity	2008 - 2016		
28	Exemption from the payment of environmental tax on air pollution caused by CO_2 emissions	• Voluntary agreements between the state and managers of installations	2008 - 2016	32 GWh	EUR 1 million
29	Financial incentives to support R&D and pilot projects	• Development of new products and services in the area of sustainable energy use	2008 - 2016		
TOTAL (23–29)				**32 GWh**	**EUR 31 million**

		•			
		•			

5.2.2 Description of horizontal measures

Instrument	23. ***Awareness-raising, information, promotional and training programmes, demonstration projects***
Type of instrument	• *Informational*
Target group	• *General public* • *Energy consumers in all sectors, with an emphasis on the residential and public sectors, and on small and medium-sized companies* • *Providers of energy services* • *Manufacturers and sellers of vehicles, energy equipment, and household appliances and installations* • *Media outlets or individual journalists covering energy, environmental and economic-development topics*
Efficient energy use measure	*Provision of information to and awareness-raising among target publics regarding efficient energy management, reducing the adverse effect of energy-related activities on nature and the environment, and reducing unnecessary private and public expenditure on ensuring high-quality energy services, as well as on the importance of increased use of renewable energy sources, is an important process that will have a positive long-term effect on sustainable energy management in Slovenia.* *Basic activities in the area of information provision and awareness-raising:* • *survey and evaluation of previous activities by various actors in the field of information provision and awareness-raising for the general public and target groups regarding efficient energy use and sustainable energy management;* • *the preparation and implementation of a long-term communication strategy for raising the awareness of the general public and of individual target groups regarding the economic, environmental and development potentials of efficient and sustainable use of renewable energy sources that will take into account the specific features of each group in the different sectors and define specific information and awareness-raising programmes for each group;* • *training of energy service providers;* • *implementation of demonstration and model projects for individual target groups;* • *presentation of activity in the area of efficient energy use in the public sector, exchange of best practices in the public sector;* • *competitions and awards for energy efficiency for individual target groups;* • *periodic education and training of journalists and media relations representatives in (energy) companies.*

Effects	• *Increasing the level of information and awareness of energy costs, possible measures and modern technologies* • *Increased identification with efficient energy use as a value inherent in sustainable development* • *Symbolisation of the practice of sustainable management of energy in the transport, residential and public sectors as positive elements of symbolic communication* • *Improved identification with individual efficient energy use, efficient energy management and sustainable management of renewable energy source activities* • *Transfer of values and examples of exemplary conduct in efficient energy management to the everyday expectations and conduct of actors in the residential and public sectors* • *Expanded and strengthened group of images and presentations (collection of images) on the possibilities of sustainable provision of individual energy services for different target groups*
Expected energy savings	*The instrument will have a positive effect on savings in final energy consumption. Savings in final energy consumption will be evaluated in accordance with a methodology to be drawn up by the EU.*
Public funding	**The estimated level of public funding required for implementation of the instrument is EUR 30 million, around 8 million of which will be used for demonstration projects.**
Status and timetable of implementation	*The instrument is already being implemented to a significant extent.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Ministry of the Environment and Spatial Planning* • *Slovenian Ecological Fund* • *Regions* • *Non-governmental organisations*

Instrument	24. ***Education programmes***
Type of instrument	• *Informational*
Target group	• *Primary and secondary schools, higher education organisations*
Efficient energy use measure	*Education on efficient energy use and sustainable use of renewable sources, and training for efficient energy use and sustainable use of renewable energy sources at different levels will have a positive long-term impact on the sustainable management of energy in Slovenia.* *Basic activities in the area of information provision and awareness-raising:* • *survey and evaluation of previous concepts, contents and tools of schooling and education in energy at all levels and in all courses of education, their amendment, supplementation and improvement for better knowledge and understanding of energy processes and efficient energy management, use of renewable energy sources, reduction in environmental impact and reduction in energy costs;* • *supplementing and amendment in curriculums in primary and secondary schools;* • *introduction of new study courses or interdisciplinary study programmes for sustainable energy development;* • *the production, implementation and ex post evaluation of a training programme for primary and secondary school teaching staff and mentors of natural-science and technical study groups and out-of-school activities involved in environmental education for the use of modern education methods and tools on efficient energy use and sustainable use of renewable energy sources.* • *presentation of activity in the area of efficient energy use in the public sector, exchange of best practices in the public sector;*

Effects	**Increased training for various efficient energy use activities or information provision, awareness-raising, promotional and training activities for efficient energy use and sustainable use of renewable energy sources** • *An increase in the general level of education on education conversions and their impacts on the natural and social environments, and on the economic and environmental advantages of efficient energy management* • *Greater interest on the part of pupils and students in the topic and improved motivation for efficient energy management at home and at school through the use of innovative teaching and educational concepts, methods and tools* • *Increased interest and training in new, more sustainable approaches to defining energy problems and to searching for solutions for energy service supply* • *Increased interest in new technologies for providing energy services in different sectors* • *A raising of the professional level with regard to efficient energy use and RES both in terms of supply of and demand for energy services.*
Expected energy savings	*The instrument will have a positive effect on savings in final energy consumption. Savings in final energy consumption achieved by individual programmes will be evaluated in accordance with a methodology to be drawn up by the EU.*
Public funding	*The public funds required for implementation of the instrument will be provided from regular budget funds for education.*
Status and timetable of implementation	*The instrument is already being partly implemented, but without a comprehensive approach or suitable links between the actors involved, and with a lack of resources.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of Education and Sport* • *Ministry of Higher Education, Science and Technology* • *Ministry of the Environment and Spatial Planning*
Provider(s)	• *National Education Institute* • *National Vocational and Professional Education Centre* • *Universities, faculties, higher education institutions* • *Nursery schools, primary schools, secondary schools, colleges* • *Non-governmental organisations*

Instrument	**25.Provision of information to consumers on energy use, transparent accounting and other information**
Type of instrument	• *Informational programme – compulsory*
Target group	• *Providers: distributors, distribution network system operators, retail energy sale companies* • *Recipients: final customers*
Efficient energy use measure	*Obligation to provide the following information:* • *comprehensive and sufficiently frequent calculation of energy with a precise breakdown of current costs for energy consumed* • *provision of information on actual prices and actual energy consumption* • *comparison of a consumer's energy consumption with consumption in the same period the previous year and consumption by a comparable consumer* • *information on the ways of obtaining information and on the measures available for improving energy efficiency*
Effects	• *By gaining an understanding of the energy consumption, prices or costs diagram, and making comparisons on its basis, consumers can adjust their energy consumption.* • *Consumers obtain professional information on the available measures and other methods for improving energy efficiency.*
Expected energy savings	*The instrument will have a positive effect on savings in final energy consumption. Savings in final energy consumption will be evaluated in accordance with a methodology to be drawn up by the EU.*
Public funding	*No public funds are required for implementation of this instrument.*
Status and timetable of implementation	*The instrument refers directly to the requirements of Article 13 of Directive 2006/32/EC.* *The instrument has begun to be implemented in part. The legal bases enabling implementation are provided by the Energy Act.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of the Environment and Spatial Planning* • *Ministry of Economy*
Provider(s)	• *Distribution and transmission network system operators* • *Energy companies* • *Energy suppliers*

Instrument	***26. Environmental tax for air pollution caused by CO_2 emissions***
Type of instrument	• *Financial instrument – payment of environmental tax*
Target group	• *Managers of combustion plants and industrial furnaces* • *residential sector*
Efficient energy use measure	*The payment of an environmental tax for fuel use and the incineration of combustible organic substances is a general measure of internalisation of external costs for polluting the air with CO_2 aimed at reducing fuel consumption and encouraging the use of fuels with a lower carbon content.*
Effects	*As an economic instrument, it will have an impact on the final price of fuels and encourage companies and individuals to implement efficient energy use measures and to replace fuels, thereby reducing air pollution from CO_2.*
Expected energy savings	*The instrument will have a positive effect on savings in final energy consumption.*
Public funding	
Status and timetable of implementation	*The environmental tax for air pollution from CO_2 emissions was introduced on 1 January 1997* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of Finance* • *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Environmental Agency of the Republic of Slovenia*

Instrument	***27. Excise duties on fuels and electricity***
Type of instrument	• *Financial instrument – payment of excise duty on fuels and electricity*
Target group	• *Residential and transport sectors, and to a lesser extent the industrial and tertiary sectors*
Efficient energy use measure	*The excise duty will be paid on electricity and on fuels used as engine fuel or heating fuel. The excise duty constitutes a tax revenue of the state and is, at the same time, an instrument through which the state can regulate the price of fuels and electricity.* *In Slovenia the level of taxation on fuels is slightly below that of other European countries. Gradual alignment is therefore envisaged.*
Effects	*The excise duty on fuels and electricity is an increase instrument through which the state is able to influence the final price of fuels and intervene in relative fuel price relations on the market. The selective increase in excise duties encourages companies and individuals to carry out efficient energy use measures, replace fuels and use less fuel, thereby reducing energy consumption, air pollution from CO_2 and pollution of the environment. It would be expedient to deal with the introduction of higher excise duties within the context of green tax reform. The basis of the reform process is transfer of the tax burden from taxes on work to taxes on the environment, i.e. on the use of energy or other resources and raw materials, environmentally hazardous substances and products.*
Expected energy savings	*The savings are indirect.*
Public funding	
Status and timetable of implementation	*Excise duty on fuels has been paid since 1 July 1999 and on electricity from 1 January 2007.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016.*
Institution(s) responsible	• *Ministry of Finance*
Provider(s)	• *Ministry of Finance*

Instrument	***28. Exemption from the payment of environmental taxes for air pollution from CO_2 emissions***
Type of instrument	• *Exemption from payment of the environmental tax, or a reduction in the amount payable*
Target group	**Managers of combustion plants in industry that are not included in the ETS.** **Managers of combustion plants in the tertiary sector**
Efficient use measure	• *Signing of a voluntary agreement on reducing air pollution from CO_2*
Effects	*The agreement that the manager of a plant signs with the ministry responsible for the environment defines the following:* • *the required reduction in the level of CO_2 emissions* • *the planned measures that the manager of the plant must carry out in the period covered by the agreement, as well as the efficient energy use measures* • *the method used to monitor CO_2 emissions and the penalties envisaged in the event of failure to meet the obligations under the agreement.* **Up to now 155 companies have signed an agreement on the reduction of greenhouse gas emissions binding them to perform the measures laid down in the agreement within a specified period (generally by the end of 2008), whereby they will reduce their total specific annual emissions by at least 2.5% with regard to the specific annual emission of CO_2 in the baseline year, in accordance with the Decree on the Environmental Tax on Air Pollution Caused by Carbon Dioxide.**
Expected energy savings	*The total quantity of emissions by companies that have signed an agreement on the reduction of greenhouse gas emissions is estimated at 350 kt of CO_2 per year. The expected reduction in emissions is therefore estimated at 8.5 kt of CO_2 per year, and the expected annual saving of final energy amounts to 32 GWh. The savings relate to measures that will be implemented up to 2009.*
Public funding	**The estimated level of public funding required for implementation of the instrument is EUR 1 million.**
Status and timetable of implementation	**The instrument has commenced implementation and will be completed by 31 December 2008.** *The possibility of implementing this measure after 2008 will also be investigated.*
Institution(s) responsible	• *Ministry of Finance* • *Ministry of the Environment and Spatial Planning*
Provider(s)	• *Environmental Agency of the Republic of Slovenia*

Instrument	***29. Financial incentives to support R&D and pilot projects***
Type of instrument	• *Direct subsidies to support the development and transfer of energy technologies*
Target group	• *Small and medium-sized companies* • *Public and private research and development institutes, universities* • *Local communities*
Efficient use measure	• *Development of new technologies, products and services in the area of sustainable energy use*
Effects	*The main aim of the measure is to increase incentives to research and development and technology transfer activities in the area of energy and other technologies, and to services for increasing energy efficiency.* *Through implementation of the measure we wish, on the basis of support mechanisms for small and medium-sized companies, including start-up capital for new high-tech companies, and by encouraging joint research between companies and universities, to considerably increase the scope of development of new technologies, products and services for energy efficiency.*
Expected energy savings	*The estimated reduction in energy use and greenhouse gas emissions is direct.*
Public funding	*The level of public funding will be determined in the Programme for Promoting Research and Development in the Area of Energy Efficiency and Renewable Energy Sources.*
Status and timetable of implementation	*Research and development incentives are already being implemented within a number of R&D-oriented programme and support mechanisms. The Programme for Promoting Research and Development in the Area of Energy Efficiency and Renewable Energy Sources in Slovenia 2008–2016 will be drawn up by 1 October 2008.* *Envisaged duration of instrument: 1 January 2008 to 31 December 2016*
Institution(s) responsible	• *Ministry of Higher Education, Science and Technology* • *Ministry of Economy*
Provider(s)	• *Ministry of Higher Education, Science and Technology* • *Ministry of Economy* • *Slovenian Research Agency* • *Slovenian Technology Agency* • *Public Agency of the Republic of Slovenia for Entrepreneurship and Foreign Investment*

5.2.3 Savings in final energy consumption – horizontal instruments

Table 16: Savings in final energy consumption – horizontal instruments (2008–2010 and 2008–2016)

Instruments	**Energy saving [GWh]**	
	2008–2010	**2008–2016**
23. Awareness, information, promotional and training programmes, demonstration projects (*)		
24. Education programmes		
25. Provision of information to consumers on energy use, transparent accounting and other information (*)		
26. Environmental tax on air pollution caused by CO_2 emissions (*)		
27. Excise duties on fuels and electricity (*)		
28. Exemption from the payment of the environmental tax for air pollution caused by CO_2 emissions (*)	7	32
29. Financial incentives to support R&D and pilot projects		
TOTAL Horizontal instruments	**7**	**32**

(*) – Savings in final energy consumption will be evaluated in accordance with a methodology to be drawn up by the EU.

6 Improving energy efficiency in the public sector

The promotion of efficient energy use in the public sector has major effects on account of the promotion of the range of energy services and the strengthening of demand for energy-efficient products and services, with the conduct of the public sector having a large ‘demonstrational’ effect on other users. According to directive 2006/32/EC, Member States must devote particular attention to the public sector.

The set of instruments for improving energy efficiency in the tertiary sector includes financial incentives for:

- the energy-efficient renovation and sustainable construction of buildings
- energy-efficient heating and ventilation systems
- efficient electricity use.

In addition to these instruments, green public procurement will be introduced for the public sector. The monitoring of energy consumption (energy accounting) in public buildings will be a further important public sector instrument

Promoting efficient energy use in the public sector is also accompanied by the multisectoral and horizontal measures described in Chapter 5.

In accordance with Article 5 of Directive 2006/32/EC, the set of instruments ensures that the following requirements from Annex VI of the Directive will be met by the public sector:

- use of financial instruments for energy saving, such as energy performance contracting
- purchase of energy-efficient equipment and vehicles
- purchase of equipment that has energy-efficient consumption in all modes, including standby mode
- purchases or rents of energy-efficient buildings.

Under Article 5 of Directive 2006/32/EC, Member States must be efficient in providing citizens and companies with information on activities in the area of efficient energy use in the public sector. These activities are envisaged to take place within the framework of Instrument 23 ‘Awareness-raising, information, promotional and training programmes, demonstration projects’ (Chapter 5.2.).

Final energy consumption in the public sector specifically is around 1,850 GWh per year. Implementation of the NEEAP will achieve savings of 330 GWh (Table 17, electricity savings with a factor of 1), or 18.9% of current energy consumption in this sector, excluding multisectoral and horizontal instruments.

Table 17: *Savings in final energy consumption in the tertiary sector (2008–2010 and 2008–2016)

Instruments	**Energy saving [GWh]**	
	2008–2010	**2008–2016**
8. Financial incentives for the energy-efficient renovation and sustainable construction of buildings	25	70
9. Financial incentives for energy-efficient heating and ventilation systems	64	183
10. Financial incentives for efficient electricity use	96	243
11. Green public procurement (*)		
TOTAL Tertiary sector	**185**	**496**

(*) – Savings in final energy consumption are indirect and will be evaluated in accordance with a methodology to be drawn up by the EU.

A survey of the instruments relating to the public sector, together with the legal bases, is provided in Table 18.

Table 18: Survey of public sector instruments

Instrument no.	Instrument	Legal Framework	Timetable of implementation
	Chapter 4.2.1		
8	Financial incentives for the energy-efficient renovation and sustainable construction of buildings	▪ Operational Programme of Environmental and Transport Infrastructure Development 2007–2013, 'Sustainable Energy' priority ▪ Decree on the Implementation of Procedures for the Use of European Cohesion Policy Funds in the 2007–2013 Programming Period (OGRS, 41/2007) ▪ The conditions from point (e) of Annex VI to Directive 2006/32/EC will also form part of the criteria for the acquisition of funds.	1 January 2008 to 31 December 2014
9	Financial incentives for energy-efficient heating systems		
10	Financial incentives for efficient electricity use		
11	Green public procurement	▪ Public Procurement Act (ZJN-2, OGRS, 128/2006) ▪ It is envisaged that the rules will include the requirements from points (b), (c), (d) and (f) of Annex VI to Directive 2006/32/EC.	1. 1. 2009 to 31 December 2016
	Chapter 5.1.1		
17	Regulations on the energy performance of buildings	▪ Construction Act (OGRS, 102/04 – official consolidated text, 14/05 – amendments, 92/05 – ZJC-B, 111/05 – Constitutional Court Decision, 93/05 – ZVMS, 126/07) ▪ Energy Act (official consolidated text, EZ-UPB-2, OGRS, 27/2007) ▪ Rules on: efficient energy use in buildings, feasibility studies of alternative energy systems, energy performance certificates and inspections of air-conditioning systems are in preparation.	1. 1. 2008 to 31 December 2016
20	System of guaranteed electricity purchase prices	▪ Energy Act (official consolidated text, EZ-UPB-2, OGRS, 27/2007) ▪ Decree on the conditions for Obtaining the Status of Qualified Electricity Producer (OGRS, 29/2001, 99/2001) ▪ Decree on the Rules for Determining Prices and Purchasing Electricity from Qualified Electricity Producers (OGRS, 25/2002) ▪ Resolution on Prices and Premiums for the Purchase of Electricity from Qualified Electricity Producers (OGRS, 75/2006)	from 1 April 2002 A revision of the instrument is in preparation and will come into force from 1 January 2008

			(planned date).

Table 18: Survey of public sector instruments (continued)

Instrument no.	Instrument	Legal Framework	Timetable of implementation
	Chapter 5.1.1		
21	Contractual reduction in energy costs	▪ Public Procurement Act (ZJN-2, OGRS, 128/2006) ▪ Public-Private Partnership Act (ZJZP, OGRS, 127/2006) ▪ Implementing regulations for implementation of public-private partnerships are in preparation. ▪ The regulations bring into force point (a) of Annex VI to Directive 2006/32/EC.	1. 1. 2008 to 31 December 2016
22	Energy use management programmes for final customers by energy supply companies (DSM)	▪ Energy Act (official consolidated text, EZ-UPB-2, OGRS, 27/2007), Articles 66a and 67 ▪ Implementing regulations have not yet been drawn up.	1. 1. 2009 to 31 December 2016
23	Awareness-raising, information, promotional and training programmes, demonstration projects	▪ Energy Act (official consolidated text, EZ-UPB-2, OGRS, 27/2007) ▪ Environmental Protection Act (official consolidated text, ZVO-1-UPB1, (OGRS, 39/2006)	1. 1. 2008 to 31 December 2016
25	Environmental tax for air pollution caused by CO_2 emissions	▪ Environmental Protection Act (official consolidated text, ZVO-1-UPB1, (OGRS, 39/2006)	1. 5. 2005
27	Exemption from the payment of environmental tax on air pollution caused by CO_2 emissions	▪ Decree on the Environmental Tax on Air Pollution Caused by Emissions of Carbon Dioxide (OGRS, 43/2005, 87/2005, 20/2006)	
28	Financial incentives to support R&D and pilot projects	▪ Research and Development Activities Act (OGRS, 115/2005)	1. 1. 2008 to 31 December 2016

7 Availability of data and information

Under Article 7 of Directive 2006/32/EC, Member States must ensure that **information on energy efficiency mechanisms and financial and legal frameworks** adopted with the aim of reaching the national indicative energy saving target is transparent and widely disseminated to the relevant market actors. In addition, Member States must establish suitable conditions and incentives for market actors to enable them to provide final customers with more information and advise them on efficient energy use.

These requirements of the Directive will be met by implementation of Instrument 23 ‘Awareness-raising, information, promotional and training programmes, demonstration projects’ and Instrument 25 ‘Provision of information to consumers by energy supply companies’ (Chapter 5.2).

8 Funding of implementation of the Action Plan

The estimated level of public funding required for implementation of the NEEAP in the 2008–2016 is EUR 380 million. This sum includes incentives for investment of between 15 and 40%. It also includes the EUR 28 million required for the management, implementation, monitoring, reporting and evaluation of the NEEAP.

The total sum includes only part of the funds required for the implementation of instruments 13 and 14 for energy efficiency in the transport sector. In addition, it is assumed that the funds for the implementation of instruments 24 (education) and 29 (development of technologies and the pilot project) will be provided from the state budget as part of regular activities. It should also be pointed out that the total sum includes only 40% of the funds for investments in efficient energy use and RES.

Table 19 shows the structure of the required public funding for implementation of the NEEAP by sector and measure.

Table 19: Funds required for implementation of the NEEAP 2008–2016

Sector/measure	**Funds 2008–2016 [EUR millions]**	**Average funds per year [EUR millions]**	**Interest [%]**
Residential sector	120	13,3	31,6
Tertiary sector	109	12,1	28,7
Industrial sector	15	1,7	3,9
Transport sector	39	4,3	10,3
Multisectoral measures	38	4,2	10,0
Horizontal measures	31	3,4	8,2
Management, implementation	28	3,1	7,4
Total	**380**	**42,2**	**100,0**

The timetable applying to the required public and private funds for implementation of the NEEAP is shown in Table 20. This table also gives the individual funding sources. Incentives of between 15 and 40% will be allocated for the implementation of investment measures. Funds from investors, separately for the public (state, local communities) and private sectors, are therefore also given in the table.

Table 20: Funds and sources required for implementation of the NEEAP 2008–2016, amounts in EUR thousands

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2008-2016
1	**Required public funds[29]**	**28.000**	**39.300**	**44.700**	**44.700**	**44.700**	**44.700**	**44.700**	**44.600**	**44.600**	**380.000**
2	**State budget – total (sum of items 3–11)**	**12.918**	**26.323**	**25.432**	**27.622**	**25.433**	**23.032**	**15.183**	**0**	**0**	**155.941**
3	- state budget – efficient energy use and RES, excl. OP ETID – SE[30]	4.032	3.370	0	0	0	0	0	0	0	7.402
4	- Sustainable Energy – OP ETID 2007–13 – EU[31]	5.458	16.813	18.642	20.886	19.366	19.407	12.905	0	0	113.476
5	- Sustainable Energy – OP ETID 2007–13 – national contribution[32]	963	2.967	3.290	3.686	3.417	3.425	2.277	0	0	20.025
6	- Public transport – ERDF 2007–13 – EU[33]	362	408	850	950	1000	118	0	0	0	3.688
7	- Public transport – ERDF 2007–13 – national contribution[34]	64	72	150	168	176	21	0	0	0	651

[29] Public funds for implementation of the NEEAP. This sum includes incentives for investment of between 15 and 40%.

[30] Budget items: 5539, 5540, 5542, 7661

[31] Budget item: 9497

[32] Budget item: 9429

[33] Budget item: 6843

[34] Budget item: 6946

8	- Development and regulation of transport[35]	315	336	700	782	824	61	0	0	0	3.018
9	- Construction of national roads[36]	507	603	529	338	497	0	0	0	0	2.474
10	- National road network – ERDF 2007–13 – EU[37]	1.034	1.491	1.080	690	130	0	0	0	0	4.425
11	- National road network – ERDF 2007–13 – national contribution[38]	183	263	191	122	23	*0*	*0*	*0*	*0*	782

Table 20: Required funds and sources for implementation of the NEEAP 2008–2016, amounts in EUR thousands (continued)

		2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2008-2016**
12	**Other public funds (13 + 14)**	**2.011**	**2.522**	**3.033**	**3.544**	**4.056**	**4.567**	**5.078**	**5.589**	**6.100**	**36.500**
13	- Slovenian Ecological Fund loans (as subsidy)	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	13.500
14	- supplement to network charges for purchase from qualified producers	511	1.022	1.533	2.044	2.556	3.067	3.578	4.089	4.600	23.000

[35] **Budget item: 7652**

[36] **Budget item: 1351**

[37] **Budget item: 9489**

[38] **Budget item: 9492**

15	**Ensured public funds – total (2 + 12)**	**14.929**	**28.845**	**28.465**	**31.166**	**29.489**	**27.598**	**20.260**	**5.589**	**6.100**	**192.441**
16	**Public funding shortfall (1–15)**[39]	**13.071**	**10.455**	**16.235**	**13.534**	**15.211**	**17.102**	**24.440**	**39.011**	**38.500**	**187.559**
17	**Sources for the co-financing of investments – total (18+19+20)**[40]	**48.755**	**69.049**	**80.045**	**83.522**	**81.173**	**81.255**	**86.762**	**93.000**	**93.000**	**716.561**
18	- state budget: rehabilitation of public buildings and others	5.487	16.538	18.331	20.481	19.010	19.080	12.694	0	0	111.621
19	- municipal budgets: rehabilitation of public buildings and others	3.268	10.511	11.714	13.041	12.163	12.175	8.068	0	0	70.940
20	- private sources	*40.000*	*42.000*	*50.000*	*50.000*	*50.000*	*50.000*	*66.000*	*93.000*	*93.000*	534.000
21	**Total value of NEEAP (1 + 17)**	**76.755**	**108.349**	**124.745**	**128.222**	**125.873**	**125.955**	**131.462**	**137.600**	**137.600**	**1.096.561**
22	***Total public funds required for NEEAP (1+18+19)***	***36.755***	***66.349***	***74.745***	***78.222***	***75.873***	***75.955***	***65.462***	***44.600***	***44.600***	**562.561**

[39] The public funding shortfall will be provided from the state budget and from the supplement to the network charges for the promotion of efficient energy use and renewable energy sources (Article 66b of the Energy Act).

[40] Public funds or funds from private investors (60 to 85% of investments)

Ensured financial sources for implementation of the NEEAP

Funds of around EUR 192 million have been ensured for implementation of the NEEAP, as follows:

- as part of regular budget items of the state budget
- within the Operational Programme of Environmental and Transport Infrastructure Development 2007–2013 (OP ETID): Cohesion Fund and European Regional Development Fund items, and national contribution items
- with Slovenian Ecological Fund loans with a reduced interest rate
- with a supplement to network charges for the compulsory purchase of electricity from qualified producers.

The OP ETID ensures funds for the NEEAP in the 2008–2014 period as part of the following:

- The 'Sustainable Energy' priority for financial incentives for investments in efficient energy use and RES and for demonstration projects in the amount of approx. EUR 133.5 million. Of the entirety of funds for 'Sustainable Energy', funds for investments in efficient energy use and RES in the public sector, funds for efficient electricity use and 50% of the funds earmarked for demonstration projects and the provision of information and advice have been taken into account.
- The 'Transport Infrastructure' (ERDF) development priority for the implementation of instruments 13 and 16 in the amount of EUR 9.5 million.

In addition, funds of EUR 23 million will be provided from the supplement to network charges for the compulsory purchase of electricity from qualified producers for the implementation of Instrument 20.

In 2008 and the years thereafter, it is envisaged that the Slovenian Ecological Fund will allocate loans with a reduced interest rate for investments in efficient energy use and RES of around EUR 25 million per year, which is equivalent to the allocation of grants of around EUR 1.5 million per year.

Missing funds for implementation of the NEEAP

The total amount ensured for implementation of the NEEAP in the 2008–2016 period on the basis of the above-mentioned financial sources is therefore approx. EUR 192 million. The shortfall of public funds required is around EUR 188 million: EUR 40 million for 2008–2010 and EUR 148 million for 2011–2016.

The funding shortfall will be made up from the state budget and from funds collected on the basis of the supplement to network charges for the promotion of efficient energy use and renewable energy sources, in accordance with Article 66b of the Energy Act (EUR 1/MWh). The amount of the supplement will be determined by the Government, paid into a separate Slovenian Ecological Fund account and used for the promotion and co-financing of efficient energy use investment projects, RES use and district

heating systems. The funds thus collected may also be used for the implementation of energy use management measures by energy suppliers.

Sources for the co-financing of investments

The public funds for the implementation of the National Energy Efficiency Action Plan 2008–2016, which amount to EUR 380 million, include investment incentives of between 15 and 40% of the investment value. For ensuring the remaining funds required for the implementation of investments (85 to 60% of investments), funds are planned from private sources, the state budget and local community budgets earmarked for the construction of public buildings and investment MT of the existing housing stock. In the 2008–2016 period, these funds amount to around EUR 717 million (public funds required of approx. EUR 183 million and private funds of EUR 534 million).

For ensuring the remaining funds required for the implementation of investments (85 to 60% of investments), funds are planned from private sources, the state budget and local community budgets earmarked for the construction of public buildings and investment MT of the existing housing stock. In the 2008–2016 period, these funds amount to around EUR 717 million (public funds required of approx. EUR 183 million and private funds of EUR 534 million).

The entire cost of implementation of the NEEAP, taking into account the entirety of funds for investments, is therefore approx. EUR 1,087 million; EUR 563 million is made up of the required public funds.

9 Implementation of the Action Plan

The targets set in the NEEAP can only be reached with the active cooperation and high-quality coordination of all relevant participants: state bodies, local communities, energy consumers in the residential, industrial, public and service, small business and transport sectors, energy supply companies, suppliers of energy equipment and services, educational, research, development and financial institutions, non-governmental organisations, the media, etc. Particular attention will therefore be devoted to informing and raising the awareness of various target groups regarding indo aspects of energy development.

The Slovenian Government will implement the NEEAP through line ministries. Specialist, development and coordination tasks relating to the Action Plan will be implemented by the Ministry of the Environment and Spatial Planning, which is responsible for the area of efficient energy use. For NEEAP implementation, the Ministry will draw up detailed annual programmes by individual sector or instrument. The Ministry will adopt a detailed annual programme for NEEAP implementation by 15 January for the current year.

In accordance with Article 4(4) of Directive 2006/32/EC, Member States shall assign to one or more new or existing authorities or agencies tasks relating to overall control, achievement of the targets, verification of energy savings and the reporting of the results. These tasks will be implemented by the Ministry of the Environment and Spatial Planning. The Ministry will report to the Sustainable Development Council and the Slovenian Government on the realisation of the NEEAP not later than by March for the previous year.

In addition, Member States must, in accordance with Article 5(2) of Directive 2006/32/EC, assign to a new or existing organisation or organisations the administrative, management and implementing responsibility for energy efficiency programmes in the public sector. These tasks will be implemented by the Slovenian Ecological Fund.

The NEEAP will be implemented through 29 instruments. The institutions responsible for individual instruments are responsible for achieving the targets laid down by those instruments. The Ministry of the Environment and Spatial Planning is responsible for most of the instruments; for others, responsibility is held by the Ministry of Finance, the Ministry of the Economy, the Ministry of Transport, the Ministry of Higher Education, Science and Technology, and the Ministry of Education and Sport. Individual responsible institutions or providers of instruments will report to the Ministry of the Environment and Spatial Planning at least twice a year on implementation of the instruments. The responsible institutions and providers of individual instruments are given in Table 20.

A series of NEEAP measures constitute the involvement of aspects of sustainable energy development in other sectoral policy areas, which include, in addition to the environment and spatial planning: transport policy, the internal market and prices, fiscal policy, forestry and agriculture, regional development, technological development,

education, employment and international cooperation. For this reason, the role of ministries responsible for the drafting and implementation of legislation and regulations that could have a direct or indirect effect on the efficiency of energy management is important for the implementation of the Action Plan. Their role in the implementation of individual programmes and measures concerning efficient energy use and the use of renewable energy sources will also be important, particularly in the public sector. In connection with this, special attention must be paid to the inclusion of efficient energy use and RES in the implementation of programmes co-financed by Structural Funds, particularly the Rural Development Programme 2007–2013 (Ministry of Agriculture, Forestry and Food) and the Operational Programme for Strengthening Regional Development Potentials 2007–2013 (Ministry of the Economy). In order to increase efficiency and harmonisation in the implementation of the Action Plan, the Government will establish an interministerial working body to include the directors-general of directorates.

Programmes to promote efficient energy use and RES will be implemented by the Slovenian Ecological Fund. Under the proposed Regions Act, implementation of part of these programmes will be transferred to the regions after they are established. Here an important role can be played by local energy agencies, which are being established with the support of the EU 'Intelligent Energy – Europe' 2007–2013 programme and the Ministry of the Environment and Spatial Planning.

Local communities will have an important role to play in implementation of the Action Plan. They are obliged to draft local energy concept that include efficient energy use and RES in public buildings.

Under the provisions of the Energy Act, electricity distribution network system operators and transmission network system operators that perform their activity as a public service are also involved in the preparation and implementation of efficient energy use programmes for consumers, with the Ministry of the Environment and Spatial Planning approving and supervising the implementation of these programmes.

As regards the involvement of new actors, the Ministry of the Environment and Spatial Planning will promote the development of the energy services market, particularly the contractual financing of efficient energy use and RES projects, with special emphasis on the public sector.

The Chamber of Commerce and Industry of Slovenia, the Chamber of Crafts of Slovenia, the Slovenian Chamber of Engineers, the Chamber of Architects of Slovenia, specialist societies and other non-governmental organisations will also have a significant role to play in promoting sustainable energy development.

The scope of activities in the field of efficient energy use will widen substantially with the commencement of implementation of the NEEAP, since public funds will increase from the previous annual average of EUR 4 million to an annual average of around EUR 40 million in the 2008–2016 period. Funds totalling EUR 28 million have been envisaged for management, implementation, monitoring, reporting and evaluation relating to the NEEAP in this period. Implementation of these programmes to promote

efficient energy use and RES will be transferred from the Ministry of the Environment and Spatial Planning to the Slovenian Ecological Fund. In 2008 and 2009, the Ministry of the Environment and Spatial Planning/Slovenian Ecological Fund will have to take on an additional 20 employees for NEEAP implementation and engage external implementing organisations for the implementation of individual promotional schemes. Procedures for the allocation of financial incentives for investment will have to be simplified as much as possible with the selection of financial instruments and the simplification of administrative procedures.

Table 21: Providers of the National Energy Efficiency Action Plan

Instrument no.	Instrument	Institution(s) responsible	Provider(s)
	RESIDENTIAL SECTOR		
1	Financial incentives for the energy-efficient renovation and sustainable construction of buildings	MESP	Ecological Fund, regions*
2	Financial incentives for energy-efficient heating systems	MESP	Ecological Fund, regions*
3	Financial incentives for efficient electricity use	MESP	Ecological Fund, regions*
4	Efficient use for low-income households scheme	MESP	Ecological Fund
5	Energy labelling of household and other appliances	MESP	MESP, ME
6	Compulsory division and calculation of heating costs in multi-dwelling and other buildings according to actual consumption	MESP	MESP
7	Energy advice network for residents	MESP	Ecological Fund
	TERTIARY SECTOR		
8	Financial incentives for the energy-efficient renovation and sustainable construction of buildings	MESP	Ecological Fund, regions*
9	Financial incentives for energy-efficient heating systems	MESP	Ecological Fund, regions*
10	Financial incentives for efficient electricity use	MESP	Ecological Fund, regions*
11	Green public procurement	MF, MESP, MPA	MF, MESP, MPA, budget users
	INDUSTRIAL SECTOR		
12	Financial incentives for efficient electricity use	MESP	Ecological Fund
	TRANSPORT SECTOR		
13	Promotion and competitiveness of public transport	MT	MT, regions, local communities
14	Promoting sustainable freight transport	MT	MT, ME, SŽ
15	Increasing the energy efficiency of private cars	MT, MESP, MI, MF	MESP, MI, MF
16	Constructing cycle paths and support facilities, and promoting cycling	MT	MT, regions, local communities, SŽ, bus operators

* Tasks to be implemented in their entirety by the Ecological Fund until the establishment of regions.

Instrument no.	Instrument	Institution(s) responsible	Provider(s)
	MULTISECTORAL MEASURES IN GENERAL CONSUMPTION AND THE INDUSTRIAL SECTOR		
17	Regulations on the energy performance of buildings	MESP	MESP
18	Requirements for the minimum energy efficiency of products	MESP	MESP, ME
19	Co-financing of implementation of energy audits	MESP	Ecological Fund
20	System of guaranteed electricity purchase prices	ME	ME
21	Contractual reduction in energy costs	MF	MESP, Ecological Fund
22	Energy use management programmes for final customers by energy supply companies (DSM)	ME, MESP, ENARS	DNSO, TNSO, energy companies, energy suppliers
	HORIZONTAL MEASURES IN GENERAL CONSUMPTION AND THE INDUSTRIAL SECTOR		
23	Awareness-raising, information, promotional and training programmes, demonstration projects	MESP	MESP, Ecological Fund, regions*, NGOs
24	Education programmes	MES, MHEST, MESP	NEI, VPEC, universities, faculties, higher-education institutions, nursery schools, primary and secondary schools, colleges, NGOs
25	Provision of information to consumers on energy use, transparent accounting and other information	MESP, ME	DNSO, TNSO, energy companies, energy suppliers
26	Environmental tax for air pollution caused by CO_2 emissions	MF, MESP	EARS
27	Excise duties on fuels and electricity	MF	MF
28	Exemption from the payment of environmental tax on air pollution caused by CO_2 emissions	MF, MESP	EARS
29	Support for development and technology transfer, pilot and demonstration projects	MHEST, ME	MHEST, ME, SRA, STA

MESP Ministry of the Environment and Spatial Planning
Ministry of Public Administration
MT Ministry of Transport
MF Ministry of Finance
ME Ministry of the Economy
MHEST Ministry of Higher Education, Science and Technology
ENARS Energy Agency of the Republic of Slovenia
Ministry of Public Administration
EARS Environmental Agency of the Republic of Slovenia
VPEC National Vocational and Professional Education Centre
Ecological Fund Slovenian Ecological Fund (public fund)
DNSO Distribution network system operator
TNSO Transmission network system operator

MES	Ministry of Education and Sport	STA	Slovenian Technology Agency
SRA	Slovenian Research Agency	NEI	National Education Institute

ANNEX 1: SURVEY OF CALORIFIC VALUES OF DIFFERENT TYPES OF FUEL

Table 21: Calorific values of fuels 2002–2005

2005		Manufacturing and construction	Transport sector	Residential sector	Other consumption
Brown coal (imports)	[MJ/kg]	20,39			
Coke	[MJ/kg]	27,87			
Black coal + anthracite	[MJ/kg]	25,15			
Liquid petroleum gas	[MJ/kg]	46,05	46,05	46,05	46,05
Petrol	[MJ/kg]	43,85	43,85	43,85	43,85
Diesel fuel	[MJ/kg]	42,60	42,60	42,60	42,60
Heating gas oil	[MJ/kg]	42,60	42,60	42,60	42,60
Residual fuel oil	[MJ/kg]	39,70	39,70	39,70	39,70
Petroleum coke	[MJ/kg]	33,88			
Natural gas	[MJ/Sm^3]	37,87	37,87	37,87	37,87
Wood	[MJ/kg]	12,17	12,17	12,17	12,17
2004					
Coke	[MJ/kg]	28,81			
Black coal + anthracite	[MJ/kg]	29,10			
Petroleum coke	[MJ/kg]	34,12			
2003					
Brown coal – domestic	[MJ/kg]			11,42	
Brown coal – imports	[MJ/kg]	21,00		19,09	
Lignite – domestic	[MJ/kg]			10,10	
Coke	[MJ/kg]	29,51			
Black coal + anthracite	[MJ/kg]	25,01			
2002					
Brown coal – domestic	[MJ/kg]			11,09	
Brown coal – imports	[MJ/kg]	21,00		19,01	
Lignite – domestic	[MJ/kg]			13,54	
Coke	[MJ/kg]	29,05			
Black coal + anthracite	[MJ/kg]	27,05			
2001					
Brown coal – domestic	[MJ/kg]			11,09	
Brown coal – imports	[MJ/kg]	18,70		18,70	

The calorific values of the various types of fuel shown in Table 22 are used by the Statistical Office of the Republic of Slovenia to convert a used quantity of fuel from a unit of substance to a unit of energy. The same values were also used for calculating the target under the ESD. The calorific values used ensure consistency with the data reported by the Statistical Office, which makes it easier to follow the progress made in reaching the targets set in the NEEAP.

ANNEX 2: ENERGY EFFICIENCY REGULATIONS

This Annex presents the existing regulations and those whose adoption is planned in the 2008–2010 period.

1. Allocation of financial incentives

- Rules on the Promotion of Efficient Energy Use and the Use of Renewable Energy Sources (proposal, 2008)

2. Energy labelling of household and other appliances

- Rules on Energy Labels for Certain Types of Household Appliance (OGRS, 104/01)
- Rules on the Energy Labelling of Refrigerators, Freezers and Fridge-Freezers (OGRS, 104/01, 64/04)
- Rules on the Energy Labelling of Domestic Washing Machines (OGRS, 104/01, 100/06)
- Rules on the Energy Labelling of Domestic Electrical Drying Machines (OGRS, 104/01, 4/02, 100/06)
- Rules on the Energy Labelling of Domestic Washing-Drying Machines (OGRS, 104/01, 100/06)
- Rules on the Energy Labelling of Domestic Dishwashing Machines (OGRS, 104/01, 100/06)
- Order on the Energy Labelling of Light bulbs and Fluorescent Lamps for Household Use (OGRS, 104/01)
- Rules on the Energy Labelling of Domestic Electrical Ovens (OGRS, 89/03)
- Rules on the Energy Labelling of Domestic Air-Conditioning Devices (OGRS, 5/04)
- List of Standards Whose Application Creates a Presumption of Conformity of Air-Conditioning Devices with the Rules on the Energy Labelling of Domestic Air-Conditioning Devices (OGRS, 60/05)

Planned regulations: only amendments to existing regulations are planned.

3. Requirements for the minimum energy efficiency of products

- Rules on the Minimum Energy Efficiency Requirements for Fluorescent Lamp Ballasts (OGRS, 58/03, 47/07)
- Rules on the Efficiency Requirements for New Hot-Water Boilers Using Liquid or Gaseous Fuels (OGRS, 107/01, 20/02,63/07)
- Rules on the Energy Efficiency Requirements for Domestic Refrigerators, Freezers and Fridge-Freezers (OGRS, 107/01, 16/02, 40/07)

Planned regulations:

- Decree on the Establishment of a Framework for Determining Requirements the Environmentally Compliant Design of Energy-Using Products (proposal, 2008)
- Rules Determining the Minimum Efficiency Requirements of Outside Lighting (2008)
- Rules Determining the Minimum Efficiency Requirements of Battery Loaders and Chargers (2008)
- Rules Determining the Requirements for Losses in Stand-By Mode (2008)
- Rules Determining the Minimum Efficiency Requirements of Interior Lighting (2008)
- Rules Determining the Minimum Efficiency Requirements of Boilers (2008)
- Rules Determining Minimum Efficiency Requirements of Communicator Devices in Televisions (2008)
- Rules Determining the Minimum Efficiency Requirements of Television Appliances (2008)
- Rules Determining Minimum Efficiency Requirements of Water Heaters (2008)
- Rules Determining Minimum Efficiency Requirements of Personal Computers (Desktop and Laptop) and Computer Monitors (2008)
- Rules Determining the Minimum Efficiency Requirements of Domestic Air-Conditioning Devices
- Rules Determining the Minimum Efficiency Requirements of Clothes Dryers
- Rules Determining the Minimum Efficiency Requirements of Vacuum Cleaners
- Rules Determining the Minimum Efficiency Requirements of Imaging Equipment (photocopiers, fax machines, printers, optical readers, multipurpose devices)
- Rules Determining the Minimum Efficiency Requirements of Electrical Motors
- Rules Determining the Minimum Efficiency Requirements of Vending Machines

4. Energy performance of buildings

- Rules on Thermal Insulation and Efficient Energy Use in Buildings (OGRS, 42/02)
- Rules on the Ventilation and Air-Conditioning of Buildings (OGRS, 42/02, 105/02)
- Rules on the Method of Dividing and Calculating Heating Costs in Multi-Dwelling and Other Buildings Containing Several Consumers (OGRS, 52/05)

Regulations currently being amended:

- Rules on the Energy Performance of Buildings (proposal, 2008)
- Rules on the Production of Feasibility Studies for Alternative Systems for Supplying Buildings with Energy (proposal, 2008)
- Rules on the Methodology for Producing and Issuing Energy Performance Certificates for Buildings (proposal, 2008)

- Rules on Regular Inspections of Air-Conditioning Systems (proposal, 2008)
- Rules on Licences and the Register of Licences for Independent Specialists (in preparation, 2008)

Planned regulations:

- Rules on the Method of Dividing and Calculating Heating Costs in Multi-Dwelling and Other Buildings Containing Several Consumers (Compulsory Calculation According to Actual Energy Consumption) (2008)

5. Green public procurement

Planned regulations:

- Decree on the Minimum Requirements for the Energy Efficiency of Equipment, Vehicles and Buildings in the Implementation of Public Contracts (2008)

ANNEX 3: SURVEY OF ACTIVITIES 1995–2007

Earlier activity	Measures implemented	Duration of activity	Instrument	Target group	Provider(s)
Financial incentives for investments					
Promotion of individual efficient energy use measures in the residential sector	sealing of windows insulation of loft spaces energy-efficient fluorescent lamps replacement of windows and glass	1996–1997 1996–1997 1998 1999–2002	subsidy	residential sector	AEUE
Promotion of the energy rehabilitation of residential buildings (since 2005, only multi-dwelling buildings)	heat insulation of building shells replacement of windows and glass heat regulation system for dividing heating costs according to actual consumption	2003–2007 2003–2007 2005–2007 2006–2007	subsidy	residential sector	AEUE, MESP
Promotion of the use of renewable energy sources in residential buildings	solar systems, heat pumps wood biomass boilers photovoltaics	2002–2007 2005–2007	subsidy	residential sector	AEUE, MESP
Promotion of the use of renewable energy sources by legal entities	photovoltaics geothermal power solar systems, heat pumps, wind power plants	2002–2003 2002–2004 2003–2004	subsidy	industrial and tertiary sectors	AEUE, MESP
'Fund for Efficient Energy Use' scheme	energy rehabilitation of buildings replacement of boilers, cogeneration, modernisation of technological lines, etc.	1997–2007	loan with a reduced interest rate	industrial and tertiary sectors	AEUE, Bank Austria Creditanstalt

Earlier activity	Measures implemented	Duration of activity	Instrument	Target group	Provider(s)
Promotion of efficient energy use and RES measures in the residential sector	energy rehabilitation of building shells construction of low-energy buildings modern heating and sanitary-water preparation systems that include the use of RES solar, water or wind generation of electricity energy-efficient household appliances private cars using electrical or hybrid engines	2002–2007 2004–2007 2004–2007 2003–2007 2003–2007 2005–2007 2006–2007	loan with a reduced interest rate	residential sector	Slovenian Ecological Fund
Promotion of efficient energy use and RES measures among legal entities	construction and reconstruction of energy facilities using RES or through cogeneration energy rehabilitation of buildings	1999–2007	loan with a reduced interest rate	industrial and tertiary sectors	Slovenian Ecological Fund
Promotion of efficient energy use measures among legal entities	energy accounting, energy audits, transition to fuel with lower specific CO_2 emissions, replacement of boilers, cogeneration, etc.	2006–2009	exemption from the payment of the environmental tax for air pollution caused by CO_2 emissions	industrial, public and tertiary sectors	EARS
Financial incentive for operations					
Promotion of environmentally-friendly electricity production	cogeneration production of electricity from RES	from 2002	subsidised purchase prices	industrial, public and tertiary sectors	ME, ED
Innovative financial instruments					
Introduction of contractual reduction in energy costs	pilot project in the Municipality of Kranj sample contracts, manual for management of public sector projects	from 2003	public-private partnership	public, tertiary and industrial sectors	AEUE, MESP

Earlier activity	Measures implemented	Duration of activity	Instrument	Target group	Provider(s)
Information provision, awareness-raising, energy advice					
Awareness-raising, information provision, and efficient energy use and RES promotion programme	bulletin, website, information sheets, guides, seminars, workshops, consultancy, awards and prizes for energy efficiency, site visits to model projects, etc.	1995–2007	informational	industrial, tertiary, residential and transport sectors	
Energy advice network	provision of advice to residents on efficient energy use and RES	1993–2007	informational	residential sector	
Energy audit programme	implementation of energy audits using a standard methodology	1994–2007	subsidy	industrial and tertiary sectors, multi-dwelling buildings	
Regulatory instruments					
Rules on the Thermal Insulation and Energy Performance of Buildings	setting of stricter requirements for the energy performance of building shells	from 2002	regulation	non-industrial buildings	MESP
Rules on the Ventilation and Air-Conditioning of Buildings	setting of stricter requirements for energy performance in the ventilation of buildings	from 2002	regulation	non-industrial buildings	MESP
Rules on the Energy Labelling of Household and Other Appliances	refrigerators, freezers, washing machines, dryers, dishwashers, light bulbs, fluorescent lamps electric ovens air-conditioning devices	from 2001 from 2003 from 2004	regulation	products	MESP
Rules on the Minimum Energy Efficiency of Products	refrigerators and freezers, new hot-water boilers using liquid and gaseous fuel ballast for fluorescent lamps	from 2001 from 2003	regulation	products	MESP
Rules on the Method of Dividing and Calculating Heating Costs in Multi-Dwelling and Other Buildings Containing Several Consumers	specific conditions applying to dividers and to procedures for dividing and calculating heating costs	from 2003	regulation	multi-dwelling buildings	MESP

ANNEX 4: LIST OF STRATEGIC DOCUMENTS AND DIRECTIVES

I. Strategic documents and key directives

of the EU budget review

- Green Paper on a European Strategy for Sustainable, Competitive and Secure Energy, COM(2006), 106 final, Brussels, 8 March 2006
- Green Paper on Energy Efficiency, COM(2005), 265 final, Brussels, 22 June 2005
- Biomass Action Plan, COM(2005), 628 final, Brussels, 7 December 2005
- Energy Efficiency Action Plan Realising the Potential, COM(2006)545 final
- Green Paper on Market-based Instruments for Environment and Related Policy Purposes, COM(2007)140 final, Brussels, 28 March 2007
- Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC
- Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC
- Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings
- Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC
- Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market

Slovenia

- Operational Programme to Reduce Greenhouse Gas Emissions by 2012, December 2006
- Resolution on the National Energy Programme (ReNEP) (OGRS, 57/04)
- Resolution on the National Environmental Action Plan 2005–2012 (OGRS, 2/06)
- Act Ratifying the Kyoto Protocol to the United Nations Framework Convention on Climate Change (MKPOKSP) (OGRS – MP, 17/02)
- Development Strategy of Slovenia (Slovenian Government, 23 June 2005)
- National Programme of Reforms for Achievement of the Objectives of the Lisbon Strategy, 2005
- Resolution on National Development Projects 2007–2023 (ReNRP), October 2006
- Operational Programme of Environmental and Transport Infrastructure Development 2007–2013, July 2007
- Operational Programme for Strengthening Regional Development Potentials 2007–2013, 26 July 2007

II. Complete list of Directives relating to efficient energy use

Efficiency of final energy consumption

- Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC (OJ L, 114 of 27.04.2006, p. 64)

Cogeneration of heat and electricity

- Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC

Energy performance of buildings

- Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings

Requirements for the minimum energy efficiency of products

- Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC
- Council Directive 92/42/EEC of 21 May 1992 on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels (OJ L, 167 of 22.06.1992, p. 17)
- Directive of the European Parliament and of the Council of 18 September 2000 on energy efficiency requirements for ballasts for fluorescent lighting (OJ L, *279 of 01.11.2000, p. 33)*
- Directive 96/57/EC of the European Parliament and of the Council of 3 September 1996 on energy efficiency requirements for household electrical refrigerators, freezers and combinations thereof (OJ L, *236 of 18.09.1996, p. 36)*

Energy labelling of household appliances and other products

- Council Directive 92/75/EEC of 22 September 1992 on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances (OJ L, *297 of 13.10.1992, p. 16)*
- Council Directive 93/68/EEC of 22 July 1993 amending Directives 87/404/EEC (simple pressure vessels), 88/378/EEC (safety of toys), 89/106/EEC (construction products), 89/336/EEC (electromagnetic compatibility), 89/392/EEC (machinery), 89/686/EEC (personal protective equipment), 90/384/EEC (non-automatic weighing instruments), 90/385/EEC (active implantable medical devices), 90/396/EC (appliances burning gaseous fuels), 91/263/EEC (telecommunications terminal equipment), 92/42/EEC (efficiency requirements for new hot-water boilers fired by liquid or gaseous fuels), and 73/23/EEC (electrical equipment designed for use within certain voltage limits) (OJ L, *216 of 08.08.1997, p. 99)*

- Commission Directive 94/2/EC of 21 January 1994 implementing Council Directive 92/75/EEC with regard to energy labelling of household electric refrigerators, freezers and their combinations (OJ L, *45 of 17.02.1994, p. 1)*
- Commission Directive 95/12/EC of 23 May 1995 implementing Council Directive 92/75/EEC with regard to energy labelling of household washing machines (OJ L, *136 of 21.06.1995, p. 1)*
- Commission Directive 95/13/EC of 23 May 1995 implementing Council Directive 92/75/EEC with regard to energy labelling of household electric tumble dryers (OJ L, *136 of 21.06.1995, p. 28)*
- Commission Directive 96/60/EC of 19 September 1996 implementing Council Directive 92/75/EEC with regard to energy labelling of household combined washer-dryers (OJ L, *266 of 18.10.1996, p. 1)*
- Commission Directive 96/89/EC of 17 December 1996 implementing Council Directive 92/75/EEC with regard to energy labelling of household washing machines (OJ L, *338 of 28.12.1996, p. 85)*
- Commission Directive 97/17/EC of 19 April 1997 implementing Council Directive 92/75/EEC with regard to energy labelling of household dishwashers (OJ L, *118 of 07.05.1997, p. 1)*
- Commission Directive 98/11/EC of 27 January 1998 implementing Council Directive 92/75/EEC with regard to energy labelling of household lamps (OJ L, *71 of 10.03.1998, p. 1)*
- Commission Directive 1999/9/EC of 26 February 1999 amending Commission Directive 97/17/EC implementing Council Directive 92/75/EEC with regard to energy labelling of household dishwashers (OJ L, *56 of 04.03.1999, p. 46)*
- Commission Directive 2002/31/EC of 22 March 2002 implementing Council Directive 92/75/EEC with regard to energy labelling of household air-conditioners (OJ L, *86 of 03.04.2002, p. 26)*
- Commission Directive 2002/40/EC of 8 May 2002 implementing Council Directive 92/75/EEC with regard to energy labelling of household electric ovens (OJ L, *128 of 15.05.2002, p. 45)*
- Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings (OJ L, 1 of 04.01.2003, p. 65)
- Commission Directive 2003/66/EC of 3 July 2003 amending Commission Directive 94/2/EC of 21 January 1994 implementing Council Directive 92/75/EEC with regard to energy labelling of household electric refrigerators, freezers and their combinations (OJ L, *170 of 9 July 2003, p. 10)*