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# Assessment of climate change policies in the context of the European Semester

## Country Report: Romania



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The report provides an overview of current emission trends and progress towards targets as well as policy developments that took place over the period from February 2013 to November 2013.

Please feel free to provide any comments or suggestions to the authors through the contacts listed above.

## Short summary

**Background:** Noteworthy developments took place in several policy areas related to climate change, specifically to environmental taxation, energy efficiency, renewable energy, transport and waste. Nonetheless, climate change itself receives only moderate attention in Romania as a policy issue – energy supply and prices are of foremost concern.

**Non-ETS emission reduction target:** The Romanian 2020 target is a maximum increase of 19% compared to 2005. In actual fact, emissions even decreased by 7% between 2005 and 2011. According to the latest national projections submitted to the Commission and when existing measures are taken into account, the target is expected to be achieved, despite a projected growth from current levels: +7% in 2020.

### Key indicators 2011:

GHG emissions	RO	EU
ESD EU 2020 GHG target (comp. 2005)	+19%	
ESD GHG emissions in 2011 (comp.2005)	-7%	-9%
Total GHG emissions 2012 (comp.2005)	-15%	-12%
GHG emissions/capita (tCO <sub>2</sub> eq)	5.8	9.0

→ **36% lower** per capita emissions than EU average

GHG emissions per sector	RO	EU
<b>Energy/power industry sector</b>	37%	33%
Transport	12%	20%
Industry (incl. industrial processes)	23%	20%
Agriculture (incl. forestry & fishery)	16%	12%
Residential & Commercial	7%	12%
Waste & others	4%	3%

→ **Energy/power industry** sector followed by Industry

Energy	RO	EU
EU 2020 RES target	+24%	
Primary energy consumption/capita (toe)	1.8	3.4
Energy intensity (kgoe/1000 €)	392	144
Energy to trade balance (% of GDP)	-2.7%	-3.2%

→ **47% lower** per capita consumption, **172% higher** energy intensity, contribution of energy to trade balance below EU average

Taxes	RO	EU
Share of environmental taxes (% of GDP)	1.9%	2.4%
Implicit tax rate on energy (€/toe)	66	184

→ **Lower** share of environmental taxes and **64% lower** implicit tax rate on energy than EU average.

**Key policy development in 2013:** New legislation on the energy performance of buildings makes energy certification mandatory for any real estate that is sold or let. An environmental vignette replaces the previous vehicle taxation system, which results in a tax based on the first registration of a vehicle, based on CO<sub>2</sub> emissions and cylinder capacity. However the tax level is now lower for most cars with high emissions. In addition, the “Programme on Stimulating the Modernization of the National Car Fleet” was relaunched in 2013. The central support scheme on renewable energy, the Green Certificate scheme, faced partial reductions of the support level in order to avoid overcompensation of the respective technologies. However, Romania has already nearly met its 2020 target for renewable electricity, which lowers pressure to incentivise further expansion.

**Key challenges:** Even though some progress has been made in improving energy efficiency, especially in the industry sector, the residential buildings sector has hardly been addressed and Romania is not on track towards its national target. Subsidy programmes facilitating investments in thermal insulation of residential buildings had not been allocated any funds for calls for applications in 2013 and no new programmes on residential buildings have been launched. Emissions from transport have steadily increased in Romania between 1990 and 2011. Also, its share of total emissions has increased to 12%. Romania has the lowest tax rates on petrol and diesel in the EU, also registration taxes and ownership taxes are amongst the lowest in the EU, and only the registration tax is partly based on CO<sub>2</sub> emissions. The new environmental vignette actually leads to reduced tax levels for most of the Euro 1, 2 and non-euro cars (higher emissions) compared to the legislation it replaced (a thorough evaluation of the expected impact of the new measure is not available at present).

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## I Background on climate and energy policies

In the period from February to November 2013, noteworthy developments took place in several policy areas related to climate change and specifically to environmental taxation, energy efficiency, renewable energy, transport and waste. Nonetheless, climate change itself receives only moderate attention in Romania as a policy issue – energy supply and prices are of foremost concern.

Some positive measures are being taken to reduce GHG emissions and facilitate green growth, as evidenced by various clean energy and efficiency policies. However, the developments in Romania's energy sector are rather driven by the country's attempts to secure its long-term energy supply than commitment toward green growth and an ambitious climate policy. The government's focus is to enable the country's energy intensive economy to grow while reducing energy and electricity prices in particular. Romania's industry is still suffering from the economic crisis and the government focuses on maintaining the industry's competitiveness. In this way, the government's attention and policy preferences have shifted further away from renewables turning towards other potential energy sources.

In this regard, the main support scheme on electricity generation from renewable energy sources, the Green Certificate Scheme, has been undergoing significant modifications. This includes postponing the issuance of a share of the Green Certificates by several years and reducing the number of Green Certificates for small hydro, wind power and PV installations. These changes might put the very positive developments of 2012 and 2013 regarding investment in the renewable energy sector at risk. Furthermore, Romania's shale gas resources gained significant political and public attention over the last months, further drawing attention away from renewables. In mid-April 2013, the Romanian government ended the March 2012 moratorium regarding shale gas exploration and issued licenses for exploration measures in the Dobrogea region to the U.S. company Chevron (MMediu 2013). Public attention towards Romania's shale gas policy increased after a report by the U.S. Energy Information Administration had estimated Romania's shale gas resources to amount to 1,440 billion m<sup>3</sup> - not even taking into account the resources in the Black Sea. This amount could cover Romania's yearly gas consumption of 14 billion m<sup>3</sup> for approximately 100 years (eia 2013; RL 2013). The revoked moratorium for prospecting measures has been followed by protests of thousands of Romanians across the country during the last year.

At the same time, however, Romania's climate change policy has been advanced on a strategic level, with the approval of the Romanian Climate Change Strategy by the Romanian Government in July 2013. The strategy refers to mitigation as well as adaptation strategies and measures, and reforestation and afforestation policies are considered in the context of climate change mitigation (MMediu 2012a and 2010). In order to realise the foreseen measures under the National Climate Change Strategy, the Ministry for Environment and Climate Change started elaborating an "Action Plan for Implementing the Romanian Climate Change Strategy" in June 2013.

Still, the general public discussion on climate change is focusing on adaptation to climate change impacts rather than on climate mitigation and green growth. Weather extremes like droughts or floods are continuing, so that Romania's most active policy measures focus on adaptation (MMediu 2012a). Climate mitigation is mainly supported through the promotion of renewable energies and energy efficiency, but land-use change in terms of

afforestation and reforestation is gaining increasing relevance. Moreover, Romania is supporting CCS. Green growth is mentioned in connection with CCS research and the demonstration project in Turceni. It is expected that research on and implementation of CCS projects will foster employment, but no concrete estimates are mentioned (ISPE 2011). However, implementing the pilot project has not advanced in the course of 2013 (Pandurul 2013).

A first step in strengthening the role of public procurement in green growth has been undertaken in June 2013, when a protocol for collaboration on green public procurement was signed between the Ministry for Environment and Climate Change and the Centre for Sustainable Policies Ecopolis (Centrul pentru Politici Durabile Ecopolis). The participating parties aim at creating a platform for preparing, implementing and monitoring the National Plan for Green Public Procurement (Planul National privind Achizitiile Publice Verzi). In the end, this plan should culminate in a legal act on green public procurement. Prescribing a share of ten percent of green public procurement could lead to investments of RON 10 billion (approx. € 2.2 billion) per year (MMediu 2013c).

## 2 GHG projections

### Background information

In 2011, Romania emitted 123.3 Mt CO<sub>2</sub>eq (UNFCCC inventory 2011). Total emissions decreased by around 50% between 1990 and 2011. Energy supply and energy use still account for the largest share in emissions. However, emissions in both of these sectors were reduced significantly, by 49% and 63% respectively, between 1990 and 2011. The sharpest decrease was reported in the 1990s, reflecting the economic downturn driven by the transition to a market economy. A notable drop in emissions was also observed in industrial processes (-49%) between 1990 and 2011 due to plant closures. Emissions from agriculture were reduced by 48%, driven by a reduction in the number of livestock, the cultivated area and, the associated fertilizer use. Transport is the only sector that showed increasing emissions between 1990 and 2011 (almost 22% up) (UNFCCC inventory 2011, EEA 2012, UNFCCC 2012). After the emission increase from 2010 to 2011, Romania is expected to have lowered its emissions further from 2011 to 2012, mainly through reductions realised in energy supply and use, whereas emissions in the other main sectors remained stable (EEA 2013c).

### Progress on GHG targets

There are two sets of targets to evaluate: 1) the Kyoto Protocol targets for the period 2008-12 (which has ended) and 2) the 2020 targets for emissions not covered by the European Union Emission Trading Scheme (EU ETS).

Under the Kyoto-Protocol the emission reduction target for Romania for the period 2008-2012 is minus 8% based on 1989 for CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O and for F-gases. An evaluation of the latest complete set of greenhouse gas data (for the year 2011; there is only preliminary data for 2012) shows that Romania's emissions have decreased on average by 55.7% compared to the Kyoto base year (EEA 2013a). Hence, Romania is expected to have met its Kyoto target through domestic emissions reductions directly.

By 2020, Romania can increase its emissions not covered by the EU ETS by 19% compared to 2005 according to the Effort Sharing Decision (ESD) <sup>(1)</sup>. The latest data for 2012 suggests that the country is on track at present to meet the Annual Emissions Allocation <sup>(2)</sup> for the year 2013 with a margin of 9 percentage points. By 2020, national projections (EEA 2013b) show that Romania is expected to overachieve its target by 12 percentage points with existing measures and by 15 percentage points in the scenario with additional measures (see **Fehler! Verweisquelle konnte nicht gefunden werden.**).

**Table I: GHG emission developments, ESD-targets and projections (in Mt CO<sub>2</sub>eq)**

	1990	2005	2010	2011	2012*	ESD target**		2020 Projections***	
						2013	2020	WEM	WAM
Total	244.4	141.6	116.6	123.3	120.6				
Non-ETS (% from 2005)		75.7	69.3	72.1	72.4 -4%	79.1 4%	83.6 19%	75 7%	73 4%
Energy supply (% share of total)	71.2 29%	41.3 29%	33.2 28%	36.6 30%					
Energy use (w/o transport) (% share of total)	70.4 29%	29.5 21%	23.4 20%	26.0 21%					
Transport (% share of total)	12.0 5%	12.7 9%	14.3 12%	14.6 12%					
Industrial processes (% share of total)	24.8 10%	18.2 13%	12.4 11%	12.6 10%					
Agriculture (% share of total)	36.7 15%	20.9 15%	18.8 16%	18.9 15%					

Source: UNFCCC inventories; EEA (2013b); Calculations provided by the EEA and own calculations.

\* proxies for 2012 emissions summarised by EEA (2013b)

\*\* The ESD target for 2013 and for 2020 refer to different scopes of the ETS: the 2013 target is compared with 2012 data and is therefore consistent with the scope of the ETS from 2008-2012; the 2020 target is compared to 2020 projections and is therefore consistent with the adjusted scope of the ETS from 2013-2020. 2005 non-ETS emissions for the scope of the ETS from 2013-2020 amounted to 70 Mt CO<sub>2</sub>eq.

\*\*\* Projections with existing measures (WEM) or with additional measures (WAM).

Legend for colour coding: green = target is being (over)achieved; orange = not on track to meet the target

Total greenhouse gas emissions (GHG) and shares of GHG do not include emissions and removals from LULUCF (carbon sinks) and emissions from international aviation and international maritime transport.

National projections of GHG emissions up to 2020 need to be prepared by the Member States in accordance with the EU Monitoring Mechanism <sup>(3)</sup> every two years, and the

<sup>1</sup> Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020.

<sup>2</sup> Commission decision of 26 March 2013 on determining Member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No 406/2009/EC of the European Parliament and of the Council. Online available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:090:0106:0110:EN:PDF>

<sup>3</sup> Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol.



latest submission was due in 2013. The projections need to be prepared reflecting a scenario that estimates total GHG emissions reductions in line with policies and measures that have already been implemented (with existing measures, WEM), and an additional scenario that reflects developments with measures and policies that are in the planning phase (with additional measures, WAM) may also be submitted.

In the following two tables, these measures have been summarised with a focus on national measures and those EU instruments expected to reduce emissions the most. Please note that the table includes also measures that address GHG emissions covered under the ETS such as measures reducing emissions from electricity generation (e.g. feed-in tariffs). An update on the status of the policies and measures is included in order to assess the validity of the scenarios.

**Table 2: Existing and additional measures as stated in the 2013GHG projections**

Existing Measures (only important national measures)		Status of policy in November 2013
Cross-cutting	Commitments up to 2020 for non ETS sector	Not implemented so far.
Energy	Romanian Energy Strategy 2007-2020, updated for 2011-2020	A call for applications for the Revision of this strategy was published on 5 November 2013. The revision should be conducted by a consultancy firm. The Minister for Energy, Constantin Nita, stressed that the revised strategy for 2014-2035 should, for example, encompass a projection of Romania's energy consumption and production according to the different industrial sectors. It should also assess the necessity for newly installed production capacities as well as grid capacities.
	Green certificates (GCs) system for promoting renewable energies as regulated under Law no. 220/2008.	Ongoing; modified in July 2013 by postponing the issuance of a share of GCs, which will be issued retroactively starting in April 2017 (implemented by Emergency Ordinance No. 57/2013); in October 2013, the Government announced to put an annual cap on the RES capacity that can be accredited for benefiting from the Green Certificates Scheme. Additional cuts of GCs are foreseen by the Romanian government (see also chapter 4, renewable energy).
Energy Efficiency	Modernisation of industrial sector – State aid scheme to promote high efficiency cogeneration	Ongoing; methodological draft for identifying and monitoring overcompensation for highly efficient cogeneration has been put up for public debate by ANRE in September 2013; the draft also makes methodological suggestions how to calculate reduced support levels in case that overcompensation has been identified for the respective producer and the respective year for which overcompensation applies.

	Modernisation of services sector – Law no. 159/2013 on modifying and complementing Law no. 372/2005 on the energy performance of buildings	Entered into force in July 2013.
	Modernisation of residential sector – Programme for refurbishment of multi-storey family buildings	Ongoing
Transport	Biofuel quota - Decision No. 935/2011	Ongoing, the prescribed biofuel quota for petrol and diesel amounts to 6% in 2013 and 2014. Decision No. 935/2011 is in accordance with the EU RES Directive 2003/30/COM.
	Programme on Stimulating the Modernization of the National Car Fleet 2013 (Rabla)	Relaunched in May 2013, application period ended and evaluation of applications is ongoing; by the end of September 2013 975 vouchers for legal persons and public institutions as well as 17,000 vouchers for natural persons had been granted.
Other non-ETS sectors	Improvement of land use – Emergency Ordinance no. 34/2013 addressing the organization, administration and exploitation of pastures	Entered into force in May 2013
	Order 1182/2005 of the Ministry of the Environment and Sustainable Development and the Ministry of Agriculture and Rural Development for approval of the Agricultural good practice code for the protection of waters against pollution caused by nitrates from agricultural sources	Ongoing
	Improvement of stored solid waste – National waste management strategy and National waste management plan	Update of both documents is ongoing; drafts of the National Waste Strategy 2014-2020 and its Environmental Report were put up for public comment in March 2013. According to the draft of the new National Waste Strategy, a National Action Plan on Waste will have to be elaborated focusing on concrete measures; additional information available in chapter 4 under “waste”

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, May 2013

Additional Measures (only important national measures; w/o EU legislation)		Status of policy in November 2013
Transport	Review of existing transport strategies on climate change aspects	No progress could be identified

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, May 2013

Romania has made some progress recently toward the revision of its policy documents while continuing measures initiated earlier. Beside other programmes, the Programme for refurbishment of multi-storey family buildings is ongoing. In addition, new legislation on the energy performance of buildings was introduced. Progress has also been made for example in the transport sector by relaunched the Programme on Stimulating the Modernization of the National Car Fleet for 2013. Addressing emissions covered under

the EU ETS, the central support scheme on renewable energy, the Green Certificate scheme, is facing partial reduction of the support level in order to avoid overcompensation of the respective technologies, but is still in place. Overall, Romania is currently still on track to meet its non-ETS target - mainly due to the restructuring of its economy and the space for emissions growth that it has been allocated.

### 3 Evaluation of National Reform Programme 2013 (NRP)

In April of each year, Member States are required to prepare their National Reform Programmes (NRPs), which outline the country's progress towards the targets of the Europe 2020 Strategy. The NRPs describe the country's national targets under the Strategy and contain a description of how the country intends to meet these targets. For climate change and energy, three headline targets exist: 1) the reduction of GHG emissions, 2) the increase of renewable energy generation, and 3) an increase in energy efficiency <sup>(4)</sup>.

Romania's National Reform Programme mainly focuses on mitigation policies in terms of increasing energy efficiency and fostering the energy production from renewable energy sources. However, reducing emissions from the transport sector is another important key aspect. In contrast, adaptation measures are not addressed.

In the following table, the main policies and measures as outlined in the NRP of April 2013 <sup>(5)</sup> have been summarised, and their current status (implemented, amended, abolished, or expired) is given, with specifics on latest developments.

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<sup>4</sup> There are specific targets for all MS by 2020 for non-ETS GHG emission reductions (see section 2) as well as for the renewable energy share in the energy mix by 2020 (see section 4, renewable energies). Specific energy efficiency targets will be defined (or revised) by the MS until the end of April 2013 in line with the methodology laid out in Article 3 (3) of the Energy Efficiency Directive (Directive 2012/27/EU).

<sup>5</sup> All NRPs are available at: [http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/index\\_en.htm](http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/index_en.htm)

**Table 3: Main policies and measures as outlined in the NRP, April 2013**

<b>Green certification system : Law No 220/2008</b>	
Status as stated in the NRP	Implemented. Legislative framework revised through Law No 134/2012.
Status as per Nov 2013	Modified in June 2013 by Emergency Ordinance No. 57/2013 on the modification and completion of Law No. 220/2008 Establishing a System for the Promotion of Electricity Generation from Renewable Sources.
Description of policy or measure	The green certification scheme established by Law No. 220/2008 obliges electricity suppliers and producers to present a certain number of green certificates by the end of each trimester. The failure to satisfy this obligation carries a penalty. The number of green certificates issued depends on the technology used and varies between 0.5 and 6 certificates per MWh. The issuance of a share of Green Certificates for solar, wind and hydro has been suspended and will be issued retroactively starting from 1 April 2017 for hydro power and photovoltaic installations and from 1 January 2018 for wind power plants. Furthermore, in October 2013, the Government announced to put an annual cap on the RES capacity that can be accredited for benefiting from the Green Certification Scheme. The cap would amount to the trajectories outlined in Romania's National Renewable Energy Action Plan (see chapter 4 under "renewable energy").
<b>Creation of a national qualification platform for installers operating in the RES field (technical assistance project under the Intelligent Energy for Europe Programme)</b>	
Status as stated in the NRP	Provided by the technical assistance contracted under the Intelligent Energy Europe Programme. The occupations of geothermal installer (code 712615) and heat pump installer (code 712614) were incorporated in the Classification of Occupations in Romania.
Status as per Nov 2013	Ongoing. A sub-project was launched in October 2013. BUILD UP Skills QualiShell aims at developing qualification schedules for craftsman for thermal insulation. This sub-project will run for 20 months.
Description of policy or measure	The Intelligent Energy Europe project "BUILD UP Skills Romania" aims at developing a national strategy for the qualification of the working forces regarding energy efficiency and renewable energy use in the buildings. The objectives covered by this project are: 1) Creating a national qualification platform, involving all actors relevant to qualification and construction in an integrated consultation; 2) Conduct a comprehensive analysis of the current state of the construction sector in terms of vocational training and training in energy efficiency and renewable energy use in buildings and defining the needs for skilled construction workforce in order to meet the national targets by 2020; 3) Defining national strategy for workforce training necessary to fulfil energy targets set for 2020 (see also chapter 4).

### Green House Programme: Programme for installing heating systems using renewable energy sources including replacing or complementing classical heating systems – beneficiaries being administrative-territorial units, public institutions and units of education

Status as stated in the NRP 196 legal bodies were supported to install heating systems using renewable sources.

Status as per Nov 2013 Ongoing, but even though there is meant to be a call for projects each year, no call for applications took place in 2013 due to lack of funds.

Description of policy or measure Under the Programme grants are allocated to projects using renewable energy sources for heating and cooling. In general all RES technologies for heating and cooling are eligible including aero-thermal energy, hydrothermal energy, biogas, biomass, geothermal energy, and solar thermal energy.

### Green House Programme – beneficiaries being natural persons

Status as stated in the NRP 18,073 households and 196 legal bodies were supported to install heating systems using renewable sources.

Status as per Nov 2013 Even though there is meant to be one call for projects each year, no budget was allocated for 2013 so that no call for projects could take place.

Description of policy or measure Under the Programme grants are allocated to applicants being natural persons introducing renewable energy sources for heating and cooling. The programme subsidises projects installing solar thermal installations, heat pumps, and installations using biomass.

### Research on CCS

Status as stated in the NRP Implemented. "NER 300 financing mechanism (phase 2) shall be used for the execution works of this project".

Status as per Nov 2013 Ongoing, but no further progress in implementing CCS at Turceni Energy Complex; Improvement of regulatory environment on CCS by Law 114/2013 on approving Government Emergency Ordinance no. 64/2011 on the geological storage of carbon dioxide adopted in April 2013.

At present it is unclear whether Romania even applied for the NER 300 funding - the list of submissions by Member States that was published by the European Commission does not include Romania (COM 2013).

Description of policy or measure Romania is developing a first demonstration project on CCS in the Energy Complex Turceni being the biggest thermal energy plant in Romania. Additionally, the Institute for Studies and Power Engineering (ISPE), the research institute GeoEcoMar, the Ministry for Economy and the Government are involved in this demonstration project. The project is financed from the state budget with EUR 1.2 million. Furthermore, seven major potential areas for geological storage of CO<sub>2</sub> were identified. Currently, further potential projects shall be identified in Romania based on the experiences gained within the demonstration project in Turceni. CCS technology should be implemented at block 6 of the Turceni Energy Complex by 2015. The lignite-fuelled power plant has a capacity of 7x330 MW. This power plant alone is responsible for emitting around 6.0 Mtpa CO<sub>2</sub>. Implementing CCS at Turceni power plant should decrease CO<sub>2</sub> emissions by up to 85% and storing approximately 1.5 million tonnes of CO<sub>2</sub>.

### Framework of SOP-IEC Priority Axis 4 (PA4): support investments in facilities and equipment generating energy savings

Status as stated in the NRP 23 contracts amounting to 495.2 million Lei were signed by 15 March 2013. Currently 6 projects are in the contracting phase.

Status as per Nov 2013 Ongoing, but currently no call for projects.

Description of policy or measure The subsidy programme provides support for new investments in facilities and equipment leading to energy savings. Eligible parties are industrial small- and medium-sized enterprises as well as large enterprises.

### State aid scheme to promote high efficiency cogeneration

Status as stated in the NRP Between 1 April 2011 and 31 December 2012, 36 companies benefited from the state aid support.

Status as per Nov 2013 Still in place. A draft methodology for identifying and monitoring overcompensation for highly efficient cogeneration was put up for public comment by ANRE in September 2013; the draft also makes suggestions on how to calculate reduced support levels in case that overcompensation has been identified for the respective producer and the respective year for which overcompensation applies.

Description of policy or measure The state aid scheme to promote high efficiency cogeneration supports electricity and thermal energy from high efficiency cogeneration plants. Eligible parties are heat and electricity producers owning or operating commercially high efficiency cogeneration plants carrying fuel savings of at least 10% compared to separate production. They are supported by the means of bonus payments for electricity or by regulated prices for selling electricity and thermal energy.

### Reform of the Programme District Heating, Heat and Comfort 2006-2015: rehabilitate the centralized district heating system

Status as stated in the NRP In the framework of the Programme District Heating, Heat and Comfort, 31.2 million Lei from the State Budget and 28.98 million Lei local contribution was spent in 2012.

Status as per Nov 2013 Ongoing, Co-financing was awarded to 22 projects under this subsidy programme in 2013. The overall allocated subsidy amounts to RON 33,371,000 (approx. € 7.5 million) from the state budget.

Description of policy or measure The subsidy programme "Termoficare 2006-2015 – caldura si confort" encourages investment in district heat infrastructure on local level. Local authorities may initiate projects aiming at the modernisation, extension and reset of the district heating infrastructure. Projects should e.g. reduce the heat loss in the district heating infrastructure to max. 15%. Up to 70% of the eligible costs can be co-financed from the state budget managed by the Ministry of Administration and Interior.

### Programme for refurbishment of multi-storey family buildings

Status as stated in the NRP Ongoing.

Status as per Nov 2013 Ongoing.

Description of policy or measure The programme for rehabilitation of multi-storey family buildings supports different refurbishment measures like for example:

- 1) thermal insulation of exterior walls;
- 2) replacement of existing windows and exterior doors;
- 3) thermo-waterproofing of the terrace / insulation of the last floor;
- 4) thermal insulation of the floor above the basement.

### Programme on Stimulating the Modernization of the National Car Fleet 2013 (Rabla)

Status as stated in the NRP 600 million Lei was spent for the vehicle park renewal.

Status as per Nov 2013 Relunched in May 2013. Application period ended and evaluation of applications is ongoing. By the end of September 2013, 975 vouchers for legal persons and public institutions had been granted and all 17,000 vouchers for natural persons had been distributed.

Description of policy or measure The subsidy programme is administered by the Administration of the Environmental Fund (Administratia Fondului pentru Mediu). Natural persons owning vehicles older than ten years and legal persons owning vehicles older than five years are eligible for support. Replacing the old vehicles with a new one will be subsidized by a voucher of RON 6500 (approx. EUR 1,500). The programme's budget amounts to RON 120,727,500 million (approx. EUR 27 million) for natural persons and RON 29,272,500 million (approx. EUR 6.5 million) for public institutions and legal persons. In total, 20,000 vouchers are available of which 17,000 vouchers are distributed to natural persons and 3,000 vouchers to public institutions and legal persons. However, the 20,000 available vouchers allow for replacing only a fraction of the 3.2 million registered cars that are older than 10 years.

### The National Programme for Reforestation

Status as stated in the NRP Areas were afforested through financial support from the National Rural Development Programme and the Environmental Fund.

Status as per Nov 2013 Ongoing implementation from 2012 to 2020.

Description of policy or measure The National Programme for Reforestation from 2010 foresees the continuous re- and afforestation of a total 160,000 ha of degraded and agricultural land. The National Forestry Agency (ROMSILVA) is in charge of these measures.

## 4 Policy development

This section covers significant developments made in key policy areas between February 2013 and November 2013. It does not attempt to describe every instrument in the given thematic area.

### Environmental Taxation

The share of environmental tax revenues in total tax revenues in Romania was at 6.71% in 2011. While this was a moderate result, the share of the revenues compared with the

GDP amounted only to 1.82%, which is the third-lowest value in the EU. Romania has no explicit carbon tax in place. The implicit tax rate on energy is very low in comparison to other MS. In 2011 it reached a value of 65.6 € per tonne of oil equivalent (toe). Romania's economy is very energy intensive. In 2010 the country had the third-most energy intense economy of all MS. The share of energy tax revenues in total tax revenues is relatively high (Eurostat 2013).

A brief overview of relevant energy/environment taxes includes the following (European Commission Taxation and Customs Union 2013):

- Excise duties for energy products and electricity (Accize pentru produse energetice și energie electrică): Romania's Fiscal Code approved by Law 571/2003 and its amendments).  
Tax revenue in 2010: 2,235 million EUR (6.7% of total tax revenues)
- Tax on means of transport (Impozitul pe mijloacele de transport): Romania's Fiscal Code approved by Law 571/2003 and its amendments.  
Tax revenue in 2010: 198 million EUR (0.6% of total tax revenues)

The latest developments concerning environmental taxes include additional tax reductions on electricity which were implemented in July 2013. ANRE <sup>(6)</sup> abolished the additional transmission taxes for import and export of electricity in order to stop the infringement procedure that had been initiated on this matter in 2011 by the European Commission. Romania currently produces more electricity than it can consume domestically or export (and exports continue to decline). Between January and May 2013, exports fell by 16.8%, influenced in part by the slightly higher prices for electricity produced in Romania, which amount to 30-35 €/MWh, with additional 10-11 €/MWh export taxes. At market prices of 39-40 €/MWh, Romanian electricity is not competitive in neighbouring countries. While large energy producers like Hidroelectrica appreciate this step, this might undermine the investment plans of the Romanian transmission system operator (TSO) Transelectrica, which is facing reduced incomes (Focus energetic 2013).

Furthermore, taxation of electricity has been modified by altering the specification of the value-added tax (VAT). Starting on 1 September 2013, the Romanian value-added tax (VAT) reverse charge procedure is extended to the delivery of electricity and to the transaction of Green Certificates. This is the result of the Government Ordinance no. 16/2013 for the modification of the Fiscal code (*Ordonanță pentru modificarea și completarea Legii nr. 571/2003 privind Codul fiscal și reglementarea unor măsuri fiscal-bugetare*). According to this procedure, the VAT will not be paid by the renderer of service, but by the recipient. However, this only applies in case that the recipient of the delivered electricity or the Green Certificates is a taxable person situated on Romanian territory. The Romanian VAT amounts to 24%. The VAT reverse charge procedure will be applied from 1 September 2013 to 31 December 2018 (Ministry of Finances 2013).

Following a meeting with the IMF (International Monetary Fund) and the European Commission, the Minister of Finances, Daniel Ghitoiu introduced on 15 November 2013 a tax on so-called "special construction projects others than buildings" as listed in the annex of the fiscal code. The special construction projects that would be eligible for taxing

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<sup>6</sup> The ANRE decision on abolishing transmission taxes for import and export of electricity can be downloaded on the ANRE website here: <http://anre.ro/documente.php?id=214>



include, for example, hydro power plants, transformer stations, thermo-electric and nuclear power plants, constructions for transporting electricity, the construction of infrastructure including roads and railways. The tax will be applied starting on 1 January 2014 and will amount to 1.5% of the construction's value contributing to the state budget. The tax has been introduced by Emergency Ordinance no. 102/2013 on modifying and complementing the Fiscal Code and regulating fiscal measures (Ordonanta de Urgenta nr. 102/2013 prentu modificarea si completarea Legii nr. 571/2003 privind Codul fiscal si reglementarea unor masuri financiar-fiscale) (Emergency Ordinance no. 102/2013).

In addition, introducing a new tax on diesel and petrol was discussed by Prime Minister Victor Ponta in October 2013. The tax income would be used for financing road constructions and infrastructure maintenance and could amount to 7 Eurocents per one litre petrol and diesel. However, no additional details for such a new tax and no timeline for its implementation have been communicated as of November 2013 (Ziarul de Iasi 2013).

In general, the developments with regard to environmental taxation can be considered positive, even if the steps made are small still. Romania has made some progress with regard to deregulation of energy prices as well as compliance with EU requirements in the transport sector and, thus, raising income from environmental taxation. Implementing the suggestions for a tax on diesel and petrol would further contribute to broadening the tax basis for environmental taxation. Nevertheless, developments for producers of electricity from renewable sources became even less favourable, because the construction of RES installations has become more costly due to the tax on special construction projects.

### **Energy Efficiency**

Although Romania's energy intensity is still the third highest in the EU, it improved significantly between 2005 and 2011, showing a decline of 20%. Total energy consumption was also down 10% over the same time period, primarily due to the strong recession in 2009 and 2010. Increasing transport energy use was cancelled out by massive drops in energy use in industry, especially the iron and steel industries, in 2009 and 2010. However, from 2010 to 2011 this reduction in energy consumption came to a total stop, falling behind the EU average of 4% (Eurostat 2013).

Energy efficiency increased in Romania's industrial sector between 2000 and 2010 by 24%. The development of the individual branches has, however, varied in this period. While the chemicals and paper industries made good progress (40% each), efficiency improvements in the steel industry have been stagnating over the last decade. In the household sector the situation improved, too. Between 2000 and 2010 efficiency increased by 30%, mostly due to the introduction of political and technical measures such as labelling of household appliances and increased thermal insulation of houses (Odyssee 2012).

Still, in the building sector large potentials for improving energy efficiency remain. According to the National Climate Change Strategy 2013-2020, the residential building sector in Romania is eight times more energy intensive than the EU-15 average. The reasons can be found in the inefficient district heating system and in the lack of appropriate thermal building insulation (MMediu 2012b). Thus, policies leading to an increase of energy efficiency in the building sector and heat distribution network are vital for long-term reductions of GHG emissions and lower energy bills. To this end, subsidy

programmes such as “District Heating, Heat and Comfort 2006-2015” and the Programme for Refurbishment of Multi-Storey Family Buildings are ongoing. However, a number of additional support programmes on improving energy efficiency exist, but no budgets for new calls of applications have been available for 2012 and 2013. This applies to SOP-IEC, Priority Axis 4: Increasing energy efficiency and security of supply, and support investments in facilities and equipment generating energy savings as well as to the “Casa Verde” programmes for legal entities and natural persons (Order No. 1274/2011 and Subsidy Guidelines “Casa Verde”).<sup>(7)</sup>

A positive development is the adoption of Law no. 159/2013 on modifying and complementing Law no. 372/2005 on the energy performance of buildings (*Lege nr. 159/2013 pentru modificarea si completarea Legii nr. 372/2005 privind performanta energetica a cladirilor*)<sup>(8)</sup>, which entered into force in July 2013. The modification was necessary in order to comply with the requirements of the EU Energy Performance of Buildings Directive 2010/31/EU. According to this law, energy certification becomes mandatory for a real estate that is sold or let. The energy certification applies to single-family houses, apartment buildings, offices, educational institutions, hospitals, hotels and restaurants, sports facilities, commercial real estate, and for other energy consuming buildings. The certification is conducted by Energy Auditors for Buildings.

Aside from the building sector, energy efficiency measures also target the industry sector and SMEs in particular. SMEs can benefit from loans for energy efficiency investments. The UniCredit Tiriac Bank allocates a credit line of €10 million, which has been granted by the European Bank of Reconstruction and Development (EBRD) in cooperation with the European Union. The credit line is part of the EU EBRD Romania SME Sustainable Energy Finance Facility Programme (RoSEFF)<sup>(9)</sup> supporting SMEs and housing associations to improve energy efficiency and to introduce renewable energy solutions. Credits are granted for large or complex investments increasing energy efficiency by 20% or for renewable energy projects. Investments require an annual Return on Investment (ROI) of more than 10%. For large or complex investments credits may amount to € 1,000,000. Furthermore, credits can also be granted for small-scale investments such as glazing or wall insulations. The List of Eligible Measures and Equipment (LEME) outlines all eligible investments. Credits may amount to maximum € 250,000 for small-scale investments. In addition, EU grants of 10 or 15% respectively are provided for both investment types depending on the number and the Energy Savings Ratio (ESR) of the implemented measures.<sup>(10)</sup>

Finally, Romania intends to increase energy efficiency also in connection with electricity. The Romanian Regulatory Authority (ANRE) published a draft for an ANRE Ordinance on implementing smart metering for electricity (Proiect Ordin privind implementarea

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<sup>7</sup> See list of subsidy programs on the website of the Intermediary Agency for Energy (Organismul Intermediar pentru Energie): <http://oie.minind.ro/>

<sup>8</sup> The law can be downloaded on the website of the Association of Energy Auditors for Romanian Buildings (AAECR) (Asociatia Auditorilor Energetici pentru Clădiri din Romania) here: <http://aaec.ro/index.php?show=info&page=legislatie>

<sup>9</sup> Additional information on the RoSEFF programme is available online on the project website: <https://www.seff.ro/eu-grants/1/page.html>

<sup>10</sup> For more information see: <http://unicredit-tiriac.ro/imm/credite/credite-din-surse-berd>

sistemelor de măsurare inteligentă a energiei electrice). The Ordinance stipulates that distribution system operators (DSOs) are in charge of equipping 80% of the electricity consumers under their responsibility with smart metering until 2020. In 2014, pilot projects should be implemented covering urban and rural areas as well as distribution networks in different conditions. Large-scale implementation of smart metering is supposed to be undertaken between 2015 and 2020. Therefore, ANRE is in charge of approving the national implementation programmes of the different DSOs by the end of 2015. However, this provision does not apply to DSOs with less than 100,000 connected clients <sup>(11)</sup>.

Even though some progress has been made in improving energy efficiency, especially in the industry sector, the residential buildings sector has hardly been addressed and Romania is not on track towards its national target (EEA 2013b). Subsidy programmes facilitating investments in thermal insulation of residential buildings, such as the Casa Verde programme, had not been allocated any funds for calls for applications in 2013 and no new programmes on residential buildings have been launched. An important step toward fostering Romania's progress on energy efficiency would include making the existing subsidy programmes more reliable when launching them on a yearly, uninterrupted basis. In addition, interested citizens and legal entities would benefit from stable and transparent financing conditions and application procedures. These improved basic conditions would help to constantly improve energy efficiency in buildings, to assess the impact of existing subsidy programmes and to effectively adapt the programmes to the most pressing efficiency problems.

### **Renewable Energy**

Romania's use of renewable energy has increased steadily since 2005 and reached its peak of 23.4% of total energy consumption in 2010, just shy of the country's goal of 24% by 2020. However, in 2011 the share of renewable energy decreased slightly, down to 21.4% (Eurostat 2013b). Thus, Romania is not far off its 2020 target of 24%. However, as the EEA (2013c) has pointed out, the annual growth rate from 2005 to 2011 was about 2%. In order to meet the 2020 target, the annual growth rate needs to be increased to 3.8%. In particular, the developments in the heating sector need to be pursued as a large drop of the share of renewables from 27.2% to 24.3% was reported from 2010 to 2011 in that sector (EEA 2013c).

In the electricity sector, the share of renewable energy was increased from 28.8% in 2005 to 31.1% in 2011 (Eurostat 2013b). The installed capacity of electricity from renewable sources amounted to 2,339 MW by the end of 2012. This was an increase of 190% compared to 2011. In the first trimester of 2013, 339 MW new renewable generation capacity (wind and PV) was put in place. Renewable electricity is still mainly generated through hydroelectric power plants. The Romanian government expects the installed capacity of electricity from renewable energy sources to exceed the targets outlined for 2013 in its National Renewable Energy Action Plan (Romanian Government 2013c). According to national statistics, wind power plants produced 2.9 TWh of electricity from 1 January to 31 August 2013, which is more than twice as much as during the same period

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<sup>11</sup> The draft of ANRE Ordinance on implementing smart metering for electricity can be downloaded here: <http://www.anre.ro/documente.php?id=647>

in 2011. Hydroelectric power plants produced 10.8 TWh of electricity during the first eight months of 2013. Overall electricity from renewable energy sources in that period amounted to 13.7 TWh. This reflects a share of renewable energy sources of 41.6% of the overall national electricity consumption. Taking these numbers, Romania already almost reached its renewable energy target for the electricity sector of 42% (according to the NREEA) during that specific period (Financiarul 2013; INSSE 2013).

The Green Certificate System <sup>(12)</sup> is the main measure to promote renewable energies in Romania. In 2013, this support scheme was altered significantly. The main amendments introduced by the government include:

- suspending the issuance of a share of green certificates (GC) for wind power, small hydro power and PV installations.
- adjusting the secondary legislation on the Green Certificates market

Emergency Ordinance No. 57/2013 on the modification and completion of Law No. 220/2008 Establishing a System for the Promotion of Electricity Generation from Renewable Sources (*Ordonanta de urgent nr. 57/2013 privind modificarea si completarea Legii nr. 220/2008 pentru stabilirea sistemului de promovare a producerii energiei din surse regenerabile de energie*) was published in the Romanian law gazette on 7 June 2013. According to this ordinance, the issuance of GCs will be suspended from 1 July 2013 to 31 March 2017 as follows:

- For new hydro power plants up to 10 MW: 1 GC out of 3 GC (one third)
- Photovoltaic installations: 2 GC out of 6 GC (one third)
- Wind power plants: 1 GC out of 2 GC (half)

The suspended green certificates will be withheld and issued retroactively starting from 1 April 2017 for hydro power and photovoltaic installations and from 1 January 2018 for wind power plants. The exact procedure will be regulated by secondary legislation. The renewable energy industry fears that those green certificates suspended and withheld by the Energy Regulator ANRE might not be issued in the end (reducing the support they are entitled to receive under the system). This scheme applies to all plants eligible to obtain green certificates irrespective of the date of accreditation. The Emergency Ordinance entered into force on 1 July 2013.

Another modification that comes as part of Emergency Ordinance no. 57/2013 will limit the accreditation of new renewable power plants for participating in the Green Certificate Scheme according to the yearly target values outlined in the Romanian Renewable Energy Action Plan for the share of renewable energy sources foreseen for each year.

In addition, ANRE revised and modified secondary legislation on renewable energy sources adapting the secondary legislation to Emergency Ordinance no. 57/2013 on the

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<sup>12</sup> Law No. 134/2012 Regarding the approval of Emergency Regulation No. 88/2011 Amending and Complementing Law No. 220/2008 Establishing a System for the Promotion of Electricity Generation from Renewable Energy Sources (Legea 134/2012, legea pentru aprobarea Ordonantei de urgenta a Guvernului nr. 88/2011 privind modificarea si completarea Legii nr. 220/2008 pentru stabilirea sistemului de promovare a producerii energiei din surse regenerabile de energie). Online available at: [http://leg-armonizata.minind.ro/leg\\_armonizata/energie/Legea\\_134\\_2012.pdf](http://leg-armonizata.minind.ro/leg_armonizata/energie/Legea_134_2012.pdf)

modification and completion of Renewables Law No. 220/2008. The regulations entered into force in July and August 2013. <sup>(13)</sup> The regulations under modification are:

- Regulation 55/2013 on amending and completing Regulation 42/2011 on the accreditation of RES-E producers for applying the Green Certificate Scheme (*Ordin 55/2013 privind modificarea si completarea Regulamentului de acreditare a producatorilor de E-SRE aprobat prin Ordinul ANRE nr. 42/2011*),
- Regulation 56/2013 on amending and completing Regulation 43/2011 on approving the issuance of Green Certificates (*Ordin 56/2013 pentru modificarea si completarea Regulamentului de emitere a certificatelor verzi, aprobat prin Ordinul nr. 43/2011*)
- Regulation 57/2013 on the organization and management of the market for Green Certificates (*Ordin 57/2013 Regulament de organizare si functionare a pietei de certificate verzi*).

The government enumerates various reasons for this policy change. One reason is that the Romanian industry sector is responsible for 75% of Romania's electricity consumption and the government wants to protect its industry from rising prices.

The government refers to projections for future increases of electricity prices due to the growing share of renewable energy sources, which might contribute RON 60-100 per MWh (approx. € 13.50-22.50) to final consumer prices. This compares to final electricity prices of € 110 per MWh in 2011.

In addition, the government stresses that by the end of 2012, the installed capacity of electricity from renewable sources amounted to 2,339 MW and operation licenses had been emitted by the energy regulator ANRE for another 2,672 MW. The government refers to another 15,600 MW for which grid connection contracts had been concluded and additional 26,000 MW for which requests for technical authorisations for grid connection had been submitted to ANRE by the end of 2012. The government concludes that adding up these RES-E capacities exceeds Romania's 2020 targets for renewables in the electricity sector by far and exceeds Romania's balancing capacities, thus threatens the safe operation of the national grid (Romanian Government 2013d).

Aside from these already realised modifications, further amendments have been suggested by the Romanian government in the second half of 2013, which had not been approved by the end of November 2013:

- A legislative draft on reducing the number of Green Certificates foreseen in Law no. 220/2008 for small hydropower station, wind power and PV-installations
- A limit the total amount of newly installed renewable energy capacity that may benefit from the Green Certificate Scheme every year according to the yearly trajectories outlined in Romania's National Renewable Energy Action Plan

The Ministry of Economy published a draft for a Governmental Decision on approving measures for reducing the number of Green Certificates foreseen in Law no. 220/2008 (*Hotarare pentru aprobarea măsurilor de reducere a numărului de certificate verzi prevăzut la art.6 alin.(2) lit.a), c) și f) din Legea nr.220 / 2008 pentru stabilirea sistemului*

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<sup>13</sup> The amended secondary legislation can be downloaded on the ANRE website under: [http://www.anre.ro/documente\\_tot.php?id=388&PAGES\\_npp=50](http://www.anre.ro/documente_tot.php?id=388&PAGES_npp=50)

*de promovare a producerii energiei din surse regenerabile de energie, republicată*) (Ministry of the Economy 2013), which has been put up for public consultation. According to the draft, the number of Green Certificates (GC) for electricity from renewable energy sources should be reduced as follows:

- For new hydropower stations with an installed capacity of up to 10 MW: 2.3 GC for 1MWh instead of 3 GC;
- For wind power: 1.5 GC until 2017 and 0.75 GC as of 2018 for 1MWh instead of 2 GC and 1 GC respectively;
- For solar energy: 3 GC for 1MWh instead of 6 GC.

This latest attempt to reduce the number of Green Certificates builds on the ANRE publication from March 2013 which found substantial overcompensation for these three technologies. According to the ANRE methodology, overcompensation of RES-E production is given when the cost-benefit-analysis for the previous year for the various RES-E technologies shows a return on investment being more than ten percent higher than the reference value in the authorization procedure. By the end of November 2013, the Governmental Decision had not been published in the Romanian law gazette and the modifications had not entered into force. The Romanian Association for Wind Energy (RWEA) (*Asociația Română pentru Energie Eoliană*) already criticised the Government for intervening again in the renewable energy sector thereby undermining the development of a reliable investment environment.

The second attempt to further modify Romania's legislation on renewable energy sources intends to limit the quantitative development of RES installations directly. On 2 October 2013, the Energy Department of the Ministry of Economy published a legislative draft <sup>(14)</sup> to limit the total amount of newly installed renewable energy capacity that may benefit from the Green Certificate Scheme every year. The draft foresees that these will be limited to the yearly trajectories outlined in Romania's National Renewable Energy Action Plan. RES installation exceeding this cap for the respective year will be put on a waiting list for accreditation under the Green Certificate Scheme for the following year. The Ministry argues that the rapid increase of installed capacity of renewable energy sources since 2011 (with growth rates of more than 190% annually), needs to be kept in line with the trajectories outlined in the National Renewable Energy Action Plan in order to maintain the security of the national grid. The Ministry of Economy and ANRE will start applying these limitations in 2014. For 2013, the capacity limitation for participating in the Green Certificate Scheme would have been already exceeded by 43MW by the end of September 2013 (Romanian Government 2013f).

The latest modifications of the Green Certificate Scheme as well as the intended future reduction of Green Certificates might undermine the development of a stable and reliable investment environment for renewable energies – in particular for wind and solar – required to enhancing green growth. The criticism by various Romanian renewable energy associations as well as the complaints on latest policy developments filed to the European Commission by different energy companies such as CEZ might indicate a disturbance of investor's confidence. Another interesting aspect in this context is that

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<sup>14</sup> The draft version of the regulation can be downloaded on the website of the Ministry of Economy under: <http://energie.gov.ro/home/hotarare-pentru-aprobarea-valorilor-anuale-totale-ale-capaci>

Romania already almost reached its 2020 target for renewable electricity. This also means that there is little pressure to constantly boost renewable energy sources in the electricity sector. In addition, as stated under the section on environmental taxation, Romania is currently generating overcapacity giving little incentives to focus on building new capacity with RES-E plants. However, another important aspect with regard to the development of electricity generation from renewable sources aside from large-scale hydropower very much depends on future investments in the electricity network and especially in the distribution network. All attempts to slow down the boom of wind power plants and PV-installations during 2012 and early 2013, can also be seen as a result of the failure to address the dilapidated distribution network and the lacking grid connection capacities as outlined in the next section.

The significant challenges regarding the qualification of the workforce are addressed by the Intelligent Energy Europe project "BUILD UP Skills Romania (ROBUST)", which aims to develop a national strategy for the qualification of the working forces regarding energy efficiency and renewable energy use in buildings. Following studies published in March and April 2013, which thoroughly elaborated on the procedure for preparing a national strategy and identified relevant barriers, a sub-project, BUILD UP Skills QualiShell, was launched in October 2013. The project will last for 20 months and aims at developing qualification schedules for craftsman for thermal insulation (BUILD UP Skills Romania 2013a).

### **Energy Generation**

Romania's gas prices are still state controlled. As part of the negotiations with the International Monetary Fund (IMF) and the World Bank, the Romanian government committed to gradually deregulate gas prices for households until December 2018 and for industrial consumers until December 2014. In July 2013 Ordinance no. 46/2013 on approval of delivery prices for natural gas (*Ordinul nr. 46 /2013 privind aprobarea prețurilor pentru furnizarea reglementată a gazelor naturale*) was approved by the Romanian Energy Regulation Authority (ANRE). In connection with deregulation of Romanian energy prices, gas prices for households increased by 8% and for all other consumers by 3%. In October 2013, gas prices increased by additional 1% for households and by 2% for consumers other than households (Ordinance no. 46/2013). Altogether, in 2013, natural gas prices for households increased by 10% correspondent to the deregulation schedule regulated by Decision No. 22/2013 on determining the purchasing prices of natural gas from internal production designated to the market of regulated prices for natural gas (*Hotararea no. 22/2013 privind stabilirea pretului de achizitie a gazelor natural din productia interna pentru piata reglementata de gaze naturale*). Gas prices for all other consumers increased by 11% in 2013 compared to 18% foreseen in Decision no. 22/2013.

### **Energy Networks**

One of the key challenges in Romanian energy policy in the electricity as well as the heating sector is the condition of the infrastructure. The energy infrastructure of Romania is poorly maintained and transmission losses are quite high. Thus, the district heating network is suffering from high energy losses. At the same time, the electricity network lacks connection capacities for renewable energy plants especially at the distribution network level.

The subsidy programme “Investment support for interconnection of national electricity and natural gas transport networks of electricity with European networks” under the framework of SOP-IEC, Priority Axis 4: “Increasing energy efficiency and security of supply, in the context of combating climate change” addresses energy networks. The last call for projects ended on 14 June 2013. Eligible parties are transmission system operators in the electricity sector and transmission operators in the natural gas sector. The subsidy programme aims at enhancing the interconnections of the electricity and natural gas network to the neighbouring countries. Through this programme, the capacities for integrating energy produced in Romania in neighbouring regions shall be increased. Co-financing of 40-50% of the eligible cost is granted (Intermediary Agency for Energy 2012). Another project aiming at enhanced interconnection of natural gas transport networks is the construction of natural gas pipeline between Romania and the Republic of Moldova. The contract for this project was signed in August 2013. The project is part of the European Operational Programme “Romania – Ukraine – Republic of Moldova 2007-2013” financed by the European Neighbourhood and Partnership Instrument (ENPI). The pipeline will connect the Romanian town Iasi and the Moldovan town Ungheni. The project implementation is scheduled for 17 months and aims at improving the diversification of natural gas resources of both countries. The new pipeline will be 43.2 km and will have an annual capacity of 1.5 billion m<sup>3</sup> natural gas. The project’s budget amounts to € 26.5 million of which € 7 million are financed by the European Neighbourhood and Partnership Instrument (Ministry of Rural Development and Public Administration 2013).

Even though this can be considered a positive step toward improving Romania’s energy networks, these measures are not adequate to address the significant challenge the country is facing in this sector. Especially with regard to electricity networks at the distribution network level, additional policy focus is necessary to tackle lacking connection capacities for renewable energy plants.

## **Transport**

Emissions from transport have steadily increased in Romania between 1990 and 2011. Also, their share of total emissions has increased to 12%. Accordingly, they demand further attention in the future (Table 1).

Average emissions for newly registered cars are high in Romania with a level of 139 CO<sub>2</sub>/km. The level is the 12th highest in the EU and has decreased at a lower rate than the EU average between 2005 and 2012 (Eurostat 2013). This negative performance might be influenced by the fact that both registration taxes and ownership taxes are amongst the lowest in the EU, and only the registration tax is partly based on CO<sub>2</sub> emissions, next to engine capacity, EURO emission standard, and the vehicle’s age. Romania has a time-based vignette system in place for roads outside the cities but the tariff is low compared to other EU MS using national vignettes (ACEA 2012, CE Delft 2012).

Romania has the lowest tax rates on petrol and diesel in the EU, only reaching the minimum tax rates as prescribed by the Energy Tax Directive (European Commission 2013). In this way, modernising the Romanian vehicle fleet as well as improving the modal split will be major challenges for Romania’s climate policy.

The Ministry for Environment and Climate Change has started addressing this problem by issuing Emergency Ordinance no. 9/2013 from 19.02.2013 on the environmental vignette



for vehicles (Ordonanta de Urgenta nr. 9/2013 privind timbrul de mediu pentru autovehicule). The ordinance about the taxation of polluting emissions from vehicles entered into force on 15.03.2013. Governmental decision nr. 88/2013 from 13.03.2013 specifies the methodological norms applied for the environmental vignette. The tax is paid for the first registration of the vehicle based on the vehicles' CO<sub>2</sub> emissions and the cylinder capacity. This new legislation replaces the former taxation of polluting emissions from vehicles regulated by Law no. 9/2012. As in the case of the former tax, the tax revenue is dedicated to the budget of the Environmental Fund and will be used by the Administration of the Environmental Fund for financing programmes and projects on environmental protection. Exemptions from the tax are in place for hybrid and electric cars as well as for cars with Euro 6 category. Most cars with Euro 3 and 4 will face higher tax levels compared to current tax legislation. For cars in the Euro 1, 2 and non-euro categories, the environmental vignette is fuel specific, (petrol or diesel) with higher tax levels for diesel. For most of the Euro 1, 2 and non-euro cars (those with higher emissions), the new calculation approach leads to reduced tax levels under the environmental vignette compared to tax levels under former legislation (ZF 2013). As such, it is therefore not entirely clear at this point, whether the change in taxation represents an actual step forward in terms of either emissions or revenue.

In May 2013, the Ministry of the Environment and Climate Change launched the subsidy programme "Programme on Stimulating the Modernization of the National Car Fleet 2013 - Rabla" (*Programului de stimulare a înnoirii Parcului auto național - Rabla*). The programme is administered by the Administration of the Environmental Fund (*Administrația Fondului pentru Mediu*). Under this programme, natural persons owning vehicles older than ten years and legal persons owning vehicles older than five years are eligible for support. Replacing the old vehicles with a new one will be subsidized by a voucher of RON 6500 (approx. € 1,500). Car owners need to provide proof that they have disposed of their old vehicles. The programme's budget amounts to RON 120,727,500 million (approx. € 27 million) for legal and natural persons and RON 29,272,500 million (approx. € 6.5 million) for public institutions. In total, 20,000 vouchers are available of which 17,000 vouchers are distributed to natural persons and 3,000 vouchers to public institutions and legal persons (Regulation nr. 1239/2013). The call for applications lasted from 15 to 23 May 2013. In August 2013, the Administration of the Environmental Fund extended the application period for legal persons and public institutions until 30 September 2013. By the end of September 2013, 975 vouchers for legal persons and public institutions as well as all 17,000 vouchers for natural persons had been granted<sup>15</sup>. The success of the programme is mainly due to the large number of 3.2 million registered cars that are older than 10 years and large interest of natural persons to replace their old car with a newer one.

Besides, e-mobility has also been addressed by the Administration of the Environmental Fund. A new subsidy programme was launched in October 2013 promoting the purchase of electric vehicles. Customers of electric cars may apply for a voucher (value of RON 12,000 (approx. € 2,700)). Only one voucher can be offset from the purchase price of an electric car. Eligible parties are legal persons conducting economic activities on

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<sup>15</sup> For further information see the programme website of the Administration of the Environmental Fund. Online available at: [http://www.afm.ro/rabla\\_autovehicule.php](http://www.afm.ro/rabla_autovehicule.php)

Romanian territory. The programme is administered and financed by the Administration of the Environmental Fund and launched in a yearly rhythm. The programme's budget for 2013 amounts to RON 1.2 million (approx. € 260,000). The call for applications was open until 1 November 2013 and for a second application round from 14 to 22 November 2013. The programme's financing guidelines are defined by Order No. 2366 from 2 October 2013 on approving the financing guidelines of the programme for promoting the purchase of electric vehicles (*Order Nr. 2366 pentru aprobarea Ghidului de finantare a Programului de promovare a vehiculelor de transport rutier nepoluante si eficiente din punct de vedere energiei*).<sup>(16)</sup>

Romania also made a first step in improving transport infrastructure in order to facilitate the efficient use of all modes of transport. The Ministry of Transport obtained some additional € 1.3 billion from the European Cohesion Fund for the project Connecting Europe Facility (CEF). These additional funds will be used to extend the European Transport Networks TEN-T. One of the projects financed will be the renovation of the railway line between Craiova and Calafat. The feasibility study for this project had already been conducted in 2012 and the expenses were then estimated at € 400 million. The remaining funds will be invested into modernizing all 16 harbours along the Danube River and at the Black Sea and into improving the interconnection between railways and harbours. In this way intermodal transport should be improved (Ministry of Transport 2013).

Finally, as already described in the section on environmental taxation, a legislative draft was published in September 2013 on increasing the Romanian road tariffs: the Emergency Ordinance modifying and complementing governmental ordinance no. 15/2002 on applying the tariffs for utilising the Romanian road infrastructure (*Proiectul de ordonanta de urgenta pentru modificarea si completarea Ordonantei Guvernului nr. 15/2002 privind aplicarea tarifului de utilizare si a tarifului de trecere pe reseaua de drumuri nationale din Romania*), which was put up for public comment. According to the legislative draft, the tariffs would be increased for most of the vehicle categories and time periods. For passenger cars, for example, roads tariffs would increase as follows:

- from EUR 3 to EUR 5 for a time period of 10 days,
- from EUR 7 to EUR 10 for a time period of 30 days, and
- from EUR 28 to EUR 32 for a time period of 12 months.

For transport vehicles and trucks, road tariffs would increase for time periods of 10 days and 12 months, but they would diminish for the time period of 30 days. According to the statement of justification underpinning the legislation, the tariffs for transport vehicles and trucks have been adapted according to the recommendations of Directive 2011/76/EU. Furthermore, road tariffs for passenger cars and for transport vehicles up to 3.5t should be increased, because Romanian road tariffs for these vehicles are the lowest across Europe (Romanian Government 2013a and 2013b).

The positive developments in the transport sector can hardly deceive that a lot more investments and political efforts are necessary to significantly improve energy efficiency in Romania's transport sector. The subsidy programme on for replacing old cars, for

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<sup>16</sup> For further information see the programme website of the Administration of the Environmental Fund. Online available at: [http://afm.ro/vehicule\\_electrice.php](http://afm.ro/vehicule_electrice.php)

example, offers 20.000 vouchers, which allow for replacing only a fraction of the 3.2 million registered vehicles that are older than 10 years. Consequently, such subsidy programme will not significantly improve energy efficiency in the transport sector. Aside from these selective programmes, broader regulatory incentives in favour of more efficient vehicles are necessary. The road tariffs could, for example, be differentiated according to the efficiency of the cars. In addition, an increased focus on offering mobility alternatives has to be followed consequently. Improving intermodal transport regarding carriage of freight by additional funds from the European Cohesion Fund is a first step, but measures making public transport and train services more attractive and reliable for the citizens need to be implemented systematically.

## **Waste**

Policies and measures for the reduction of GHG emissions in the other non-ETS sectors such as agriculture or waste management include the National Waste Management Strategy and National Waste Management Plan, which aim to decrease emissions from the waste sector. The National Waste Strategy is currently under revision. The Ministry for the Environment and Climate Change published the second draft for the new National Waste Strategy 2014-2020 (*Strategia Națională de Gestionare a Deșeurilor 2014-2020*) and an associated Environmental Report (*Raportul de mediu*) in March 2013. Both documents were put up for public comment until 24 April 2013 closing with a public debate on the drafts on 25 April. The next steps are the interdepartmental consultation of the strategy and approval by the Romanian government. The strategy aims at enhanced waste prevention and recycling while strengthening the polluter-pays-principle. Following the new National Waste Strategy, a National Action Plan on Waste will have to be elaborated focusing on concrete measures for achieving the strategies short-term targets (MMediu 2013a; MMediu 2013b).

Additional policy measures initiated in the waste sector are the take-back systems for waste from electrical and electronic waste, PET-bottles and aluminium packaging. Following the Voluntary Agreement (Acord Voluntar) between the Ministry for the Environment and Climate Change, Romanian retailers and waste management enterprises on waste take-back systems, first automatic recycling machines (reverse vending machines) were installed between February and April 2013. No additional statistics have been published by the Ministry ever since. As for PET-bottles and aluminium packaging, such recycling machines were set up in branches of various supermarkets (MMediu 2013d). Take-back machines for waste from electrical and electronic waste can be found in CORA supermarkets since March 2013. Customers can dispose of their waste in return for a voucher, which can be cashed in the supermarket (MMediu 2013e). The Voluntary Agreement aims at increasing the collection of waste from sales packaging by 25% by take-back facilities at retailers. Furthermore, the agreement foresees increasing the collection rate for waste from sales packaging and transport packaging by 20% (MMediu 2013f).

## **Land Use, Land Use Change and Forestry**

According to Decision No. 529/2013/EU of the European Parliament and of the Council of 21 May 2012 on accounting rules on greenhouse gas emissions and removals resulting from activities relating to land use, land-use change and forestry (LULUCF) and on information concerning actions relating to those activities, Romania is obliged to report on their LULUCF activities. This includes accounting on emissions and removals on

Romanian territory provoked by afforestation, reforestation, deforestation, forest management, cropland management and grazing land management.

The National Programme for Reforestation, adopted in 2010, foresees the continuous re- and afforestation of 160,000 ha of degraded and agricultural land in period from 2012 to 2020. The National Forestry Agency (ROMSILVA) is in charge of this policy. This policy aims to reduce the negative impacts of climate change in Romania, like desertification, floods or erosion, and contributing to Romania's mitigation target (MMediu 2012). The implementation of the National Programme for Reforestation is ongoing by various tree planting projects such as the "Month of Planting Trees" from 15 March to 15 April 2013. In the context of this project, various tree planting campaigns on national and regional level covered a reforested area of approximately 3,700 ha. Additionally, private persons were called on to plant trees on their own properties. For this purpose, ROMSILVA sponsors around one million trees for private planting (ROMSILVA 2013).

In addition, the Romanian government fostered the maintenance of pastures by issuing Emergency Ordinance no. 34/2013 addressing the organization, administration and exploitation of pastures (*Ordonanta de urgent nr. 34/2013 privind organizarea, administrarea si exploatarea pajistilor permanente si pentru modificarea si complementarea Legii fondului funciar nr. 18/1991*). This Ordinance forbids the construction and building on pasture land. The Emergency Ordinance defines pastures as areas which are used for the production of grass or other forage crops, and have not been used for catch crops during the preceding 5 years. The Ordinance foresees some exceptions, such as the construction of agricultural buildings, electronic communication networks or production sites for renewable energy sources. Emergency Ordinance no. 34/2013 entered into force in May 2013 (Romanian Government 2013e).

Maintaining traditional means of stock breeding in disadvantaged regions is the objective of a support scheme in the agricultural sector. On 20 November 2013, the Romanian Government approved Decision No. 898/2013 amending Governmental Decision No. 786/2013 regarding the support scheme for sheep and goat farmers (dairy and meat) in disadvantaged regions (*Hotărârea nr. 898/2013 pentru modificarea Hotărârii Guvernului nr.786/2013 privind schema de ajutor specific acordat producătorilor de lapte și de carne de ovine/caprine din zonele defavorizate*). Eligible parties are farmers in possession of 50-300 female goats or sheep. A grant of a maximum of € 6.5 is allocated per animal and is annually adapted by the Paying Agency for Agriculture (*Agenția de Plăți și Intervenție pentru Agricultură*) according to the number of animals supported. The programme's yearly budget amounts to maximum € 6,711,315. The grant should maintain the production level of meat and milk from goats and sheep while offering farmers in disadvantaged region an alternative income. Decision No. 898/2013 extended the application period for this year's call lasting from 25 November to 13 December 2013 (Ministry of Agriculture and Rural Development 2013).

## **Adaptation**

The Action Plan on Adaption to Climate Change is part of the Romanian National Climate Change Strategy for 2013-2020 and was finalised in 2012. On the one hand, the Action Plan specifies general measures like updating national climate change scenarios and estimating the costs of the effects of climate change in the different priority sectors. On the other hand, sector specific measures for adaptation are indicated for thirteen priority sectors: industry; agriculture and fishery; tourism; public health; infrastructure,

construction and urbanism; transport; water resources; forests; energy; biodiversity; insurances; recreational activities; and education. However, most measures specified in the Action Plan refer to research activities identifying major challenges from climate change in the different sectors and defining measures for action accordingly. Romania is already facing weather extremes like extreme droughts and floods, and droughts are forecasted to increase especially in the southern regions. These developments already go along with substantial economic losses in various sectors (e.g., agriculture, transport, energy production and supply, etc.) (MMediu 2012b). To this end, the Department of Water, Forest, and Pisciculture under the Ministry of the Environment and Climate Change is working various strategies to reduce the effects of floods and extreme weather events. This includes a strategy on reforestation of the Danube riverside as well as well a strategy on reforestation of mountainsides (FTR 2013).

## 5 Policy progress on past CSRs

As part of the European Semester, Country Specific Recommendations (CSRs) for each MS are provided by the EU Commission in June of each year for consideration and endorsement by the European Council). The recommendations are designed to address the major challenges facing each country in relation to the targets outlined in the EU 2020 Strategy. In the following table, those CSRs that are relevant for climate change and energy that were adopted in 2013 are listed, and their progress towards their implementation is assessed.

Existing Country Specific Recommendations	Progress
Explore ways to increase reliance on environmental taxes.	Environmental taxation has been enhanced slightly in the transport sector by adopting Emergency Ordinance no. 9/2013 from 19.02.2013 on the environmental vignette for vehicles and by emitting a legislative draft on increasing Romanian road tariffs.
Adopt a comprehensive long-term transport plan.	Not adopted so far.
Continue to remove regulated gas and electricity prices.	Deregulation of gas and electricity prices is ongoing; last stages of price deregulation for natural gas were undertaken in June and October 2013. According to Decision no. 22/2013, Romanian gas prices will gradually be deregulated for households until Dec 2018 and for industrial consumers until Dec 2014 (see Chapter 4, Environmental Taxation).
Improve energy efficiency.	Existing measures on energy efficiency have been continued while additional measures have been initiated targeting the industry sector and SMEs in particular and the building sector.
Improve the cross-border integration of energy networks and speed up implementation of gas interconnection projects.	Contract for construction of a natural gas pipeline between Romania and the Republic of Moldova was signed in August 2013.

## 6 References

- ACEA (European Automobile Manufacturer's Association) (2012). Taxation Guide 2012: Online available at: <http://yourfleet.volvocars.com/media/45427/taxguide2012.pdf>
- ANRE Ordinance no. 46/2013 on approval of delivery prices for natural gas (Ordinul nr. 46 /2013 privind aprobarea prețurilor pentru furnizarea reglementată a gazelor naturale) Online available at: <http://lege5.ro/Gratuit/gm3tcnzwga/ordinul-nr-46-2013-pentru-modificarea-ordinelor-presedintelui-autoritatii-nationale-de-reglementare-in-domeniul-energiei-privind-stabilirea-tarifelor-reglementate-pentru-prestarea-serviciului-de-distr>
- COM (EU Commission) (2013): Number of project proposals submitted to the EIB under the NER 300 funding programme by 3 July 2013 per Member State. Online available at: [http://ec.europa.eu/clima/funding/ner300/docs/project\\_proposals\\_en.pdf](http://ec.europa.eu/clima/funding/ner300/docs/project_proposals_en.pdf)
- BUILD UP Skills Romania (2013a): BUILD UP Skills QualiShell. Online available at: <http://www.iee-robust.ro/qualishell/index.php>
- CE Delft (2012): An inventory of measures for internalising external costs in transport. Final report. European Commission, Directorate-General for Mobility and Transport
- Decision No. 918 from 5. September 2012 for amending and complementing Government Decision Nr. 935/2011 on promoting the utilization of biofuels and bioliquids (Hotarare nr.918 din 5 septembrie 2012 pentru modificarea si completarea Hotararii Guvernului nr. 935/2011 privind promovarea utilizarii biocarburantilor si a biolichidelor). Online available at: <http://www.monitoruljuridic.ro/act/hotarare-nr-918-din-5-septembrie-2012-pentru-modificarea-si-completarea-hotararii-guvernului-nr-935-2011-privind-promovarea-utilizarii-biocarburantilor-si-a-biolichidelor-emitent-141277.html>
- Decision No. 529/2013/EU of the European Parliament and of the Council of 21 May 2012 on accounting rules on greenhouse gas emissions and removals resulting from activities relating to land use, land-use change and forestry (LULUCF) and on information concerning actions relating to those activities. Online available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:165:0080:0097:EN:PDF>
- Decision No. 898/2013 amending Governmental Decision No. 786/2013 regarding the support scheme for sheep and goat farmers (dairy and meat) in disadvantaged regions (*Hotărârea nr. 898/2013 pentru modificarea Hotărârii Guvernului nr.786/2013 privind schema de ajutor specific acordat producătorilor de lapte și de carne de ovine/caprine din zonele defavorizate*). Online available at: <http://lege5.ro/Gratuit/gm3toobugi/hotararea-nr-898-2013-pentru-modificarea-art-7-alin-1-din-hotararea-guvernului-nr-786-2013-privind-schema-de-ajutor-specific-acordat-producatorilor-de-lapte-si-de-carne-de-ovine-caprine-din-zonele-def>
- Decision no. 22/2013 on determining the purchasing prices of natural gas from internal production designated to the market of regulated prices for natural gas (*Hotararea no. 22/2013 privind stabilirea pretului de achizitie a gazelor natural din productia interna pentru piata reglementata de gaze naturale*). Online available at: <http://www.legex.ro/Hotararea-22-2013-124983.aspx>
- Directive 2011/76/EU of the European Parliament and of the Council of 27 September 2011 amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructure. Online available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:269:0001:0016:EN:PDF>
- European Commission Taxation and Customs Union (2013): Taxes in Europe Database v2. Online available at: [http://ec.europa.eu/taxation\\_customs/tedb/taxSearch.html](http://ec.europa.eu/taxation_customs/tedb/taxSearch.html)
- European Commission (2013): Excise duty tables. Part II – Energy products and Electricity. RED 1036. January 2013. DG Taxation.

- EEA (2012): Greenhouse gas emission trends and projections in Europe 2012 - Tracking progress towards Kyoto and 2020 targets. EEA Report No 6/2012. Online available at: <http://www.eea.europa.eu/publications/ghg-trends-and-projections-2012>
- EEA (2013a): EEA greenhouse gas - data viewer: Change in emissions by country (%), Kyoto base year - 2011. Online available at: <http://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer>
- EEA (2013b): Trends and projections in Europe 2013. Tracking progress towards Europe's climate and energy targets until 2020. EEA Report No 10/2013. Online available at: <http://www.eea.europa.eu/publications/trends-and-projections-2013>
- EEA (2013c): Climate and energy country profiles - Key facts and figures for EEA member countries. EEA Technical report No 17/2013. Online available: <http://www.eea.europa.eu/publications/climate-and-energy-country-profiles>
- eia – U.S, Energy Information Administration (2013): Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States. Online available at: <http://www.eia.gov/analysis/studies/worldshalegas/pdf/fullreport.pdf>
- Emergency Ordinance No. 57/2013 on the modification and completion of Law No. 220/2008 Establishing a System for the Promotion of Electricity Generation from Renewable Sources (Ordonanta de urgent nr. 57/2013 privind modificarea si completarea Legii nr. 220/2008 pentru stabilirea sistemului de promovare a producerii energiei din surse regenerabile de energie). online available under: [http://www.dreptonline.ro/legislatie/oug\\_57\\_2013\\_modificare\\_lege\\_220\\_2008\\_sistemul\\_promovare\\_producere\\_energie\\_surse\\_regenerabile\\_energie.php](http://www.dreptonline.ro/legislatie/oug_57_2013_modificare_lege_220_2008_sistemul_promovare_producere_energie_surse_regenerabile_energie.php)
- Emergency Ordinance nr.9/2013 from 19.02.2013 on the environmental sticker for vehicles (Ordonanta de Urgenta nr. 9/2013 din 19.02.2013 privind timbrul de mediu pentru autovehicule). Online available at: <http://codfiscal.net/31639/oug-92013-timbrul-de-mediu-pentru-autovehicule>
- Emergency Ordinance nr. 102/2013 from 15.11.2013 on the modifying and complementing the Fiscal Code and regulating fiscal measures (Ordonanta de Urgenta nr. 102/2013 pentru modificarea si completarea Legii nr. 571/2003 privind Codul fiscal si reglementarea unor masuri financiar-fiscale). Online available at: <http://codfiscal.net/39182/oug-1022013-modificarea-si-completarea-codului-fiscal-si-reglementarea-unor-masuri-financiar-fiscale>
- Eurostat (2013): Source of data is Eurostat using the following tables: Implicit tax rate on energy (tsdcc360). Energy intensity of the economy (tsdec360). Final energy consumption (ten00095). Average carbon dioxide emissions per km from new passenger cars (tsdtr450). Final energy consumption.by sector (tsdpc320). Greenhouse gas emissions by sector (tsdcc210). Environmental tax revenues - % of total revenues from taxes and social contributions (ten00064). Total environmental tax revenues as a share of GDP (ten00065).
- Eurostat (2013b): Shares 2011 – Short assessment of renewable energy sources. Last update: 11 June 2013 including the latest data on renewable energy generation. Online available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/energy/other\\_documents](http://epp.eurostat.ec.europa.eu/portal/page/portal/energy/other_documents)
- Financiarul (2013): Energia regenerabila a reprezentat 41,6% din consumul national de electricitate in primele opt luni ale anului. Online available at: <http://www.financiarul.ro/2013/10/07/energia-regenerabila-a-reprezentat-416-din-consumul-national-de-electricitate-in-primele-opt-luni-ale-anului/>
- Focus energetic (2013): Liber la exportul de electricitate. Online available at: <http://www.focus-energetic.ro/liber-la-exportul-de-electricitate-11399.html>
- FTR – Foia Transilvana (2013): Proiect pentru impadurirea terenurilor degradate. Online available at: <http://www.ftr.ro/proiect-pentru-impadurirea-terenurilor-degradate-67957.php>

- Governmental Decision nr.88/2013 from 13.03.2013 on approving the methodological norms applied by Emergency Ordinance nr.9/2013 on the environmental sticker for vehicles (Hotararea Guvernului nr. 88/2013 din 13.03.2013 pentru aprobarea Normelor metodologice de aplicare a Ordonanței de urgență a Guvernului nr. 9/2013 privind timbrul de mediu pentru autovehicule). Online available at: [http://static.anaf.ro/static/10/Anaf/legislatie/HG\\_88\\_2013.pdf](http://static.anaf.ro/static/10/Anaf/legislatie/HG_88_2013.pdf)
- Institute for Studies and Power Engineering (Institutul de Studii si Proiectari Energetice - ISPE) (2011): Masa rotunda "Captarea si Stocarea Dioxidului de Carbon – orizont 2020" sa bucurat de participare internationala. Online available at: [http://www.ispe.ro/ro/secundar/stiri/evenimente/Masa\\_rotunda\\_Captarea\\_si\\_stocarea\\_CO2.html](http://www.ispe.ro/ro/secundar/stiri/evenimente/Masa_rotunda_Captarea_si_stocarea_CO2.html)
- INSSE – Institutul National de Statistica (2013): Comunicat de Presa – Resursele de energie in perioada 1.I.-31.VIII.2013 – date provizorii. Online available at: <http://www.insse.ro/cms/files/statistici/comunicate/energie/a13/energie08r13.pdf>
- Institute for Studies and Power Engineering (Institutul de Studii si Proiectari Energetice - ISPE) (2011): Masa rotunda "Captarea si Stocarea Dioxidului de Carbon – orizont 2020" sa bucurat de participare internationala. Online available at: [http://www.ispe.ro/ro/secundar/stiri/evenimente/Masa\\_rotunda\\_Captarea\\_si\\_stocarea\\_CO2.html](http://www.ispe.ro/ro/secundar/stiri/evenimente/Masa_rotunda_Captarea_si_stocarea_CO2.html)
- Intermediary Agency for Energy (Organismului Intermediar pentru Energie) (2012): Ghidul Solicitantului „Sprijinirea investițiilor pentru interconectarea rețelelor naționale de transport al energiei electrice și gazelor naturale cu rețelele europene”. Online available at: <http://oie.minind.ro/>
- Law No. 134/2012 Regarding the approval of Emergency Regulation No. 88/2011 Amending and Complementing Law No. 220/2008 Establishing a System for the Promotion of Electricity Generation from Renewable Energy Sources (Legea 134/2012, legea pentru aprobarea Ordonantei de urgenta a Guvernului nr. 88/2011 privind modificarea si completarea Legii nr. 220/2008 pentru stabilirea sistemului de promovare a producerii energiei din surse regenerabile de energie). Online available at: [http://leg-armonizata.minind.ro/leg\\_armonizata/energie/Legea\\_134\\_2012.pdf](http://leg-armonizata.minind.ro/leg_armonizata/energie/Legea_134_2012.pdf)
- Mediafax (2013): Ponderea in facturi a sprijinului la energia regenerabila – diminuita. Cu cat scade valoarea facturii. Online available at: <http://www.mediafax.ro/economic/ponderea-in-facturi-a-sprrijinului-la-energia-regenerabila-diminuata-cu-cat-scade-valoarea-facturii-11133920>
- Ministry of Economy (2013) (Ministerul Economiei): Draft for Governmental Decision on approving measures for reducing the number of Green Certificates foreseen in Law no. 220/2008 (Hotarare pentru aprobarea măsurilor de reducere a numărului de certificate verzi prevăzut la art.6 alin.(2) lit.a), c) și f) din Legea nr.220 / 2008 pentru stabilirea sistemului de promovare a producerii energiei din surse regenerabile de energie, republicată); online available under: [http://www.minind.ro/PROPUNERI\\_LEGISLATIVE/2013/august/HG\\_reducere\\_certificate\\_verzi.pdf](http://www.minind.ro/PROPUNERI_LEGISLATIVE/2013/august/HG_reducere_certificate_verzi.pdf)
- Ministry of the Environment and Forestry (Ministerul Mediului si Padurilor) (2010): Programul national de impadurire. Online available at: [http://mmediu.ro/file/17.11.2010\\_Programul-National-Impadurire.pdf](http://mmediu.ro/file/17.11.2010_Programul-National-Impadurire.pdf)
- Ministry of the Environment and Forestry (Ministerul Mediului si Padurilor) (2012): Strategia Nationala a Romaniei privind Schimbarile Climatice 2013 – 2020. Online available at: [http://www.mmediu.ro/beta/wp-content/uploads/2012/10/2012-10-05-Strategia\\_NR-SC.pdf](http://www.mmediu.ro/beta/wp-content/uploads/2012/10/2012-10-05-Strategia_NR-SC.pdf)
- Ministry of Finances (Ministerul Finantelor) (2013): Nota de fundamentare - Titlul proiectului de act normative: Ordonanta privind instituirea taxei asupra veniturilor suplimentare obtinute ca urmare a dereglementarii preturilor din sectorul gazelor natural. Online available at:



[http://discutii.mfinante.ro/static/10/Mfp/transparenta/NF\\_PROIECT\\_OUG\\_energie\\_taxa\\_lunara\\_21012013.pdf](http://discutii.mfinante.ro/static/10/Mfp/transparenta/NF_PROIECT_OUG_energie_taxa_lunara_21012013.pdf)

Ministry of Regional Development and Public Administration (Ministerul Dezvoltării Regionale și Administrației Publice) (2012): Proiect de OUG pentru aprobarea Programului National privind Dezvoltarea Infrastructurii Rurale și Urbane. Online available at: <http://www.mdr.ro/ro/proiect-de-oug-pentru-aprobarea-programului-national-privind-dezvoltarea-infrastructurii-rurale-si-urbane-9333>

Ministry of Regional Development and Public Administration (2013) – Ministerul Dezvoltării Regionale și Administrației Publice: A fost semnat contractual privind constructia conductei de gaz Iasi-Ungheni; Online available under: <http://www.mdr.ro/comunicare/presa/comunicate/a-fost-semnat-contractul-privind-constructia-conductei-de-gaz-iasi-ungheni>

MMediu (Ministry of the Environment and Forestry, Ministerul Mediului și Padurilor) (2012a): Strategia Nationala a Romaniei privind Schimbarile Climatice 2013 – 2020. Online available at: [http://www.mmediu.ro/beta/wp-content/uploads/2012/10/2012-10-05-Strategia\\_NR-SC.pdf](http://www.mmediu.ro/beta/wp-content/uploads/2012/10/2012-10-05-Strategia_NR-SC.pdf)

MMediu (Ministry of the Environment and Climate Change, Ministerul Mediului și Schimbarilor Climatice) (2013): Precizari – Avize privind explorarea gazelor de sist. Online available at: [http://www.mmediu.ro/beta/wp-content/uploads/2013/05/2013-05-10\\_ComunicatPresaMMSC\\_Precizari\\_Gaze\\_Sist.pdf](http://www.mmediu.ro/beta/wp-content/uploads/2013/05/2013-05-10_ComunicatPresaMMSC_Precizari_Gaze_Sist.pdf)

MMediu (Ministry of the Environment and Climate Change, Ministerul Mediului și Schimbarilor Climatice) (2013a): Strategia Nationale de Gestionare a Deseurilor 2014-2020. Online available at: <http://www.mmediu.ro/beta/wp-content/uploads/2013/04/2013-04-23-DGDSP-SNGD.pdf>

MMediu (Ministry of the Environment and Climate Change, Ministerul Mediului și Schimbarilor Climatice) (2013b): Raport de Mediu pentru Strategia Nationale de Gestionare a Deseurilor 2014-2020. Online available at: <http://www.mmediu.ro/beta/wp-content/uploads/2013/04/2013-04-22-CC-RM-deseuri.pdf>

MMediu (Ministry of the Environment and Climate Change, Ministerul Mediului și Schimbarilor Climatice) (2013c): Comunicat de Presa - Rovana Plumb a semnat protocolul pentru achiziții publice verzi. Online available at: [http://www.mmediu.ro/beta/wp-content/uploads/2013/06/2013-06-20-ComunicatPresaMMSC\\_Ministrul\\_RovanaPlumb\\_protocol\\_achizitii\\_publice\\_verzi.pdf](http://www.mmediu.ro/beta/wp-content/uploads/2013/06/2013-06-20-ComunicatPresaMMSC_Ministrul_RovanaPlumb_protocol_achizitii_publice_verzi.pdf)

MMediu (Ministry of the Environment and Climate Change, Ministerul Mediului și Schimbarilor Climatice) (2013d): Comunicat de Presa – Proiectul Acord Voluntar. Online available at: <http://www.mmediu.ro/beta/comunicate-de-presa/proiectul-acord-voluntar-19-aparate-automate-de-preluare-a-pet-urilor-functioneaza-in-hypermarketurile-din-tara/>

MMediu (Ministry of the Environment and Climate Change, Ministerul Mediului și Schimbarilor Climatice) (2013e): Comunicat de Presa – Ministrul Rovana Plumb a lansat Reciclatorul pentru deseuri electrice, electronice și electrocasnice. Online available at: <http://www.mmediu.ro/beta/comunicate-de-presa/ministrul-rovana-plumb-a-lansat-reciclatorul-pentru-deseuri-electrice-electronice-si-electrocasnice/>

MMediu (Ministry of the Environment and Climate Change, Ministerul Mediului și Schimbarilor Climatice) (2013f): Acord Voluntar. Online available here: <http://www.mmediu.ro/beta/wp-content/uploads/2012/11/2012-11-06-acord-voluntar.pdf>

MMediu (2010): Programul national de impadurire. Online available at: [http://mmediu.ro/file/17.11.2010\\_Programul-National-Impadurire.pdf](http://mmediu.ro/file/17.11.2010_Programul-National-Impadurire.pdf)

Ministry of Transport (2013) – Ministerul Transporturilor: Comunicat. Online available at: <http://www.mt.ro/nou/comunicate.php?id=320>

- Ministry of Agriculture and Rural Development (2013) – Ministerul Agriculturii si Dezvoltarii Rurale: Comunicat de Presa. Online available at: <http://www.madr.ro/ro/comunicare/818-comunicat-de-presa.html>
- Odyssee (2012): Energy Efficiency in the EU - Country Profiles and National Reports. Online available at: [http://www.odyssee-indicators.org/publications/country\\_profiles.php](http://www.odyssee-indicators.org/publications/country_profiles.php) and [http://www.odyssee-indicators.org/publications/national\\_reports.php](http://www.odyssee-indicators.org/publications/national_reports.php)
- Order No. 1274/2011 - Order No. 1274 from 20.04.2011 approving the Subsidy Guidelines for the Programme for installing heating systems using renewable energy sources including replacing or complementing classical heating systems (Ordin Nr. 1274 din 20 aprilie 2011 pentru aprobarea Ghidului de finantare a Programului privind instalarea sistemelor de incalzire care utilizeaza energie regenerabile, inclusiv inlocuirea sau completarea sistemelor clasice de incalzire). Online available at: [http://afm.ro/main/info\\_stuf/casa\\_verde/pj/ghid\\_regenerabile\\_uat\\_ip.pdf](http://afm.ro/main/info_stuf/casa_verde/pj/ghid_regenerabile_uat_ip.pdf)
- Order No. 2366 from 2 October 2013 on approving the financing guidelines of the programme for promoting the purchase of electric vehicles (Order Nr. 2366 pentru aprobarea Ghidului de finantare a Programului de promovare a vehiculelor de transport rutier nepoluante si eficiente din punct de vedere energiei). Online available at: [http://afm.ro/main/programe/vehicule\\_electrice/ordin\\_2366\\_2013-vehicule\\_electrice.pdf](http://afm.ro/main/programe/vehicule_electrice/ordin_2366_2013-vehicule_electrice.pdf)
- Ordinance no. 46/2013 on approval of delivery prices for natural gas (Ordinul nr. 46 /2013 privind aprobarea prețurilor pentru furnizarea reglementată a gazelor naturale). Online available at: <http://lege5.ro/Gratuit/gm3tcnzwga/ordinul-nr-46-2013-pentru-modificarea-ordinelor-presedintelui-autoritatii-nationale-de-reglementare-in-domeniul-energiei-privind-stabilirea-tarifelor-reglementate-pentru-prestarea-serviciului-de-distr/2>
- Pandurul (2013): Proiect de un miliard de euro, abandonat de CE Oltenia. Online available at: <http://www.pandurul.ro/Actualitate/2013-08-21/Proiect+de+un+miliard+de+euro,+abandonat+de+CE+Oltenia>
- Regulation from 05/06/2012 on the implementation of the programme “Termoficare 2006-2015 warmth and comfort”, regarding the component for rehabilitation of the district heating infrastructure (Regulament din 05/06/2012 privind implementarea programului "Termoficare 2006-2015 caldura si confort", componenta de reabilitare a sistemului centralizat de alimentare cu energie termica). Online available at: <http://legestart.ro/Regulamentul-2012-Regulament-implementarea-programului-Termoficare-2006-2015-caldura-confort-componenta-reabilitare-sistemului-centralizat-alimentare-energie-termica-%28NjA4MTk5%29.htm#art1000000>
- Regulation nr. 1239/2013 from 14.05.2013 on approving financing guidelines for the Programme on Stimulating the Modernization of the National Car Fleet (Ordin Nr. 1239 din 14 mai 2013 pentru aprobarea Ghidului de finanțare a Programului de stimulare a înnoirii Parcului auto național). Online available at: [http://www.afm.ro/rabla\\_autovehicule.php](http://www.afm.ro/rabla_autovehicule.php)
- Reporting of Member States in accordance with Decision No 280/2004/EC of the European Parliament and of the Council concerning a mechanism for monitoring Community GHG emissions and for implementing the Kyoto Protocol. Last submission: May 2013. Overview on policies and measures available at the website of the EEA: <http://www.eea.europa.eu/data-and-maps/pam>
- RL – romanialibera.ro (2013): Gaze de sist pentru 100 de ani? Rezervele care ar putea schimba strategia energetic a Romaniei. Online available at: <http://www.romanialibera.ro/bani-afaceri/economie/gaze-de-sist-pentru-100-de-ani-rezervele-care-ar-putea-schimba-strategia-energetica-a-romaniei-304486.html>
- Romanian Government (Guvernul Romaniei) (2013a): Emergency Ordinance modifying and complementing governmental ordinance no. 15/2002 on applying the tariffs for utilising the Romanian road infrastructure (*Proiectul de ordonanta de urgenta pentru modificarea si*

*completarea Ordonantei Guvernului nr. 15/2002 privind aplicarea tarifului de utilizare si a tarifului de trecere pe reseaua de drumuri nationale din Romania*). Online available at: <http://www.dpiis.ro/uploads/files/OG%2023.09.2013.pdf>

Romanian Government (Guvernul Romaniei) (2013b): Statement of Reasons for Emergency Ordinance modifying and complementing governmental ordinance no. 15/2002 on applying the tariffs for utilising the Romanian road infrastructure (*Nota de fundamentare pentru Proiectul de ordonanta de urgenta pentru modificarea si completarea Ordonantei Guvernului nr. 15/2002 privind aplicarea tarifului de utilizare si a tarifului de trecere pe reseaua de drumuri nationale din Romania*). Online available at: <http://www.dpiis.ro/uploads/files/NF%2020.09.2013.pdf>

Romanian Government (Guvernul Romaniei) (2013c): Nota de Fundamentare la Ordonanta de urgenta nr. 57/2013 privind modificarea si completarea Legii nr. 220/2008 pentru stabilirea sistemului de promovare a producerii energiei din surse regenerabile de energie. Online available at: <http://www.gov.ro/upload/articles/120179/nf-oug-57-2013.pdf>

Romanian Government (Guvernul Romaniei) (2013d): Statement of Reasons for Emergency Ordinance No. 57/2013 on the modification and completion of Law No. 220/2008 Establishing a System for the Promotion of Electricity Generation from Renewable Sources (*Nota de fundamentare pentru Ordonanta de urgent nr. 57/2013 privind modificarea si completarea Legii nr. 220/2008 pentru stabilirea sistemului de promovare a producerii energiei din surse regenerabile de energie*). Online available at: <http://www.gov.ro/upload/articles/120179/nf-oug-57-2013.pdf>

Romanian Government (Guvernul Romaniei) (2013e): Emergency Ordinance no. 34/2013 addressing the organization, administration and exploitation of pastures (*Ordonanta de urgent nr. 34/2013 privind organizarea, administrarea si exploatarea pajistilor permanente si pentru modificarea si complementarea Legii fondului funciar nr. 18/1991*) online available here: <http://lege5.ro/Gratuit/gm3dcobuhe/ordonanta-de-urgenta-nr-34-2013-privind-organizarea-administrarea-si-exploatarea-pajistilor-permanente-si-pentru-modificarea-si-completarea-legii-fondului-funciar-nr-18-1991>

Romanian Government (Guvernul Romaniei) (2013f): Nota de fundamentare – Hotarare a Guvernului pentru aprobarea valorilor anuale totale ale capacitatilor instalate in centralele electrice de producer a energiei din surse regenerabile in vederea acreditarii grupurilor/centralelor electrice care beneficiaza de sistemul de promovare prin certificate verzi. Online available at: <http://energie.gov.ro/home/hotarare-pentru-aprobarea-valorilor-anuale-totale-ale-capaci>

ROMSILVA – National Forest Authority (Regia Nationala a Padurilor) (2013): 15martie – 15aprilie: Luna Plantarii Arborilor. Online available at: [http://www.rosilva.ro/comunicate\\_de\\_presa/15\\_martie\\_-\\_15\\_aprilie:\\_luna\\_plantarii\\_arborilor\\_\\_p\\_19.htm](http://www.rosilva.ro/comunicate_de_presa/15_martie_-_15_aprilie:_luna_plantarii_arborilor__p_19.htm)

Subsidy Guidelines “Case Verde” - Order approving the Subsidy Guidelines for the Programme for installing heating systems using renewable energy sources including replacing or complementing classical heating systems – beneficiaries being administrative-territorial units, public institutions and units of education (2010) (Ordin pentru aprobarea Ghidului de finantare a Programului privind instalarea sistemelor de incalzire care utilizeaza energie regenerabile, inclusiv inlocuirea sau completarea sistemelor clasice de incalzire – beneficiari unitati administrative-teritoriale, institutii publice si unitati de cult) (2010). Online available at: [http://afm.ro/main/info\\_stuf/casa\\_verde/pj/ghid\\_regenerabile\\_uat\\_ip.pdf](http://afm.ro/main/info_stuf/casa_verde/pj/ghid_regenerabile_uat_ip.pdf)

UNFCCC inventory (1990-2011): National greenhouse gas inventories (IPCC Common Reporting Format sector classification). Online available for the EU: <http://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer> (Last modified : May 29, 2013 09:30 AM )

UNFCCC (2012) Reports on in-depth reviews of the fifth national communications of Annex I Parties. Online available:

[http://unfccc.int/national\\_reports/annex\\_i\\_natcom/idr\\_reports/items/4056.php](http://unfccc.int/national_reports/annex_i_natcom/idr_reports/items/4056.php)

Ziarul de Iasi (2013): Premierul nu renunta la taxa pe carburanti. Online available at:

<http://www.ziaruldeiasi.ro/stiri/premierul-nu-renunta-la-taxa-pe-carburanti--30772.html>

ZF (2013): Timbru de mediu – calculator taxa auto pe site-ul AFM. Online available at:

<http://www.zf.ro/eveniment/timbru-de-mediu-calculator-taxa-auto-pe-site-ul-afm-10668212>