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

Country Report: Hungary



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Client: DG Climate Action

Service Contract: 071201/2012/635684/SER/CLIMA.A.3

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This country report has been produced as a joint output by Ecologic Institute and eclareon to support the Directorate General for Climate Action (DG CLIMA) at the European Commission in its work on the European Semester (Service Contract: 071201/2012/635684/SER/CLIMA.A.3).

The report provides an overview of current emission trends and progress towards targets as well as policy developments that took place over the period May 2012 to January 2013.

The content of the report represents the state of knowledge in February 2013, specific updates were made adding the latest official greenhouse gas emission data by the European Environment Agency (EEA).

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

Short summary

- **Background:** *Climate change policy is currently not a focus in public discussion or in the national politics. Measures are focused on the energy sector, including energy efficiency policies, as well as nuclear power and the extension of the Paks Nuclear Power Plant.*
- **GHG target:** *Non-ETS emissions in 2011 were below the 2013 target and according to the latest national projections the 2020 target is expected to be reached with existing measures.*
- **Policy development:** *A broad number of subsidy programmes under the Environmental and Energy Operative Programme financed by the European Regional Development Fund (ERDF) have been (re-)launched in 2012 and in January 2013. The programmes focus on energy efficiency measures and the use of renewable energy in the heating and cooling sectors.*

I Background on climate and energy policies

In Hungary, climate change policy is currently not a focus in either public news coverage or among governmental authorities. Rather, news coverage on climate change policies, including news published by public authorities, focuses on the policy developments on international and European levels and does not draw a line to concrete national policies on climate change. Measures to support energy efficiency or renewable energy are usually not framed in some climate change policy context. Press releases and announcements by public authorities rarely relate the support of renewable energies or energy efficiency to the need to combat climate change. Instead, renewable energy and energy efficiency are discussed in an economic development context, with the benefits of 1) securing low energy prices for the industry and the population and 2) enhancing energy supply security by decreasing dependence on Russia. For example, the Hungarian National Climate Change Strategy 2008-2025 states that climate change policies have the potential to foster green growth and to enhance Hungary's international economic competitiveness by increasing security of energy supply and reducing energy costs for the economy in the long-term. This can have positive implications for the concept of "green growth", since climate-friendly policy measures might start to be seen positively as a competitive advantage for the economy. However, the focus is still on economic development in general, which includes necessary fossil fuel consumption, and not particularly green growth.

Current policy priorities in climate and energy centre on nuclear power: The current state secretary for climate and energy policy is quite vocal about the importance of nuclear energy development in Hungary, touting the lack of greenhouse gas emissions from this power source and its perceived cost-effectiveness. The four reactors of the Paks Nuclear Power Plant (NPP), the first and only operating nuclear power station in the country, account for over 40% of Hungary's electricity production. Its original 30-year lifetime ended in 2012, but lacking other energy resources, the Hungarian government gave permission for a 20-year lifetime extension. Moreover, the National Assembly of Hungary gave consent in 2009 to an expansion of the plant, including new reactor units. After

taking office in 2011, the state secretary for climate and energy expressed his conviction that Hungary is not ready for an extensive expansion of renewable energy and that the country's potential in the electricity sector lies in nuclear and fossil fuels. Indeed, subsidy programmes in Hungary that foster renewables focuses on heating rather than electricity. Additionally, the Hungarian government shows serious intentions to broaden and secure state control over the energy markets. After acquiring a 21.5% stake in the MOL group (Hungarian Oil and Gas Public Limited Company) in May 2011, the Hungarian government announced its intentions in 2012 to buy back E.ON's gas wholesale unit and has completed a deal between the state-owned MVM group (Hungarian Electricity Ltd.) and E.ON in early 2013.

Hungarian energy prices are strongly regulated. The "universal service systems" (egyetemes szolgaltatas) foresees regulated prices for the population and small consumers for electricity and natural gas. The Ministry of National Development determines the energy prices for every year on the basis of the recommendations of the energy regulator, the Hungarian Energy Office. In addition, on 1 January 2013, a 10% reduction of the final consumer prices entered into force referring to electricity, gas, and district heating prices. This policy includes that all consumers under the universal service system – meaning the population and small consumers – have also been exempted from paying the feed-in tariff levy.

The aforementioned National Climate Change Strategy 2008-2025 focuses mainly on three areas: reduction of greenhouse gases (mitigation), adaptation to the effects of climate change, and raising public awareness about climate change. The document does not define any concrete strategies but sets general objectives for different sectors including energy, transport, agriculture, forestry, and waste. A revision of the strategy began in 2012 and includes a planned Hungarian national decarbonisation schedule – see evaluation of the National Reform Programme in section **Fehler! Verweisquelle konnte nicht gefunden werden.**

Regarding the current state of green jobs in Hungary, data from the Hungarian Central Statistical Office, KSH, allows at present only estimates of employment in environment-related activities (OECD 2012). For example, the share of employment in water collection, sewerage, waste collection, and remediation activities in Hungary was above 1% in 2011. The share of employment in the RE sector as % share of total employment was below 0,5% in 2010 (Green Jobs 2012). Additionally, according to a study conducted for DG Employment, two-hundred thousand jobs are expected to be created by policy measures of the new Széchenyi Plan by 2020 (OECD 2012). The new Széchenyi Plan is national investment plan to foster national economic and social development of Hungary. To this end, various subsidy programmes, including a broad number of programmes under the Environmental and Energy Operative Programme financed by the European Regional Development Fund (ERDF), will be launched on a regular basis.

Although the concept of green growth in particular is not discussed much in Hungarian society or politics, some energy policies hold job opportunities. This is particularly true in rural areas, where unemployment is highest and crop subsidies for plants used in biofuels and biomass electricity generation support agricultural incomes. Energy efficiency upgrades in buildings also create demand for skilled workers in the construction sector as well as appliance specialists and electricians.

2 GHG projections

Background information

In 2011, Hungary emitted 66.1 Mt CO₂eq, around one third less than in 1990 (UNFCCC inventory 2011). Energy industries, energy use, and transport are currently responsible for the highest shares of emissions. However, emissions from energy supply and use have been reduced significantly between 1990 and 2011 (by around 30 and 50%, respectively). This is the result of an increased share of renewable and nuclear power in energy supply, as well as efficiency measures in the residential sector and the shift from coal to gas. In contrast, emissions from transport have grown by more than a third between 1990 and 2011, resulting from a shift from public transport to private vehicles that accompanied improved living standards. Only a slight decline was observed in the last years. Emissions from industrial processes and agriculture each decreased by more than 40% between 1990 and 2011, due to the reduced economic activity following Hungary's transition to a market-economy (UNFCCC inventory 2011, UNFCCC 2012, EEA 2012c).

Progress on greenhouse gas targets

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

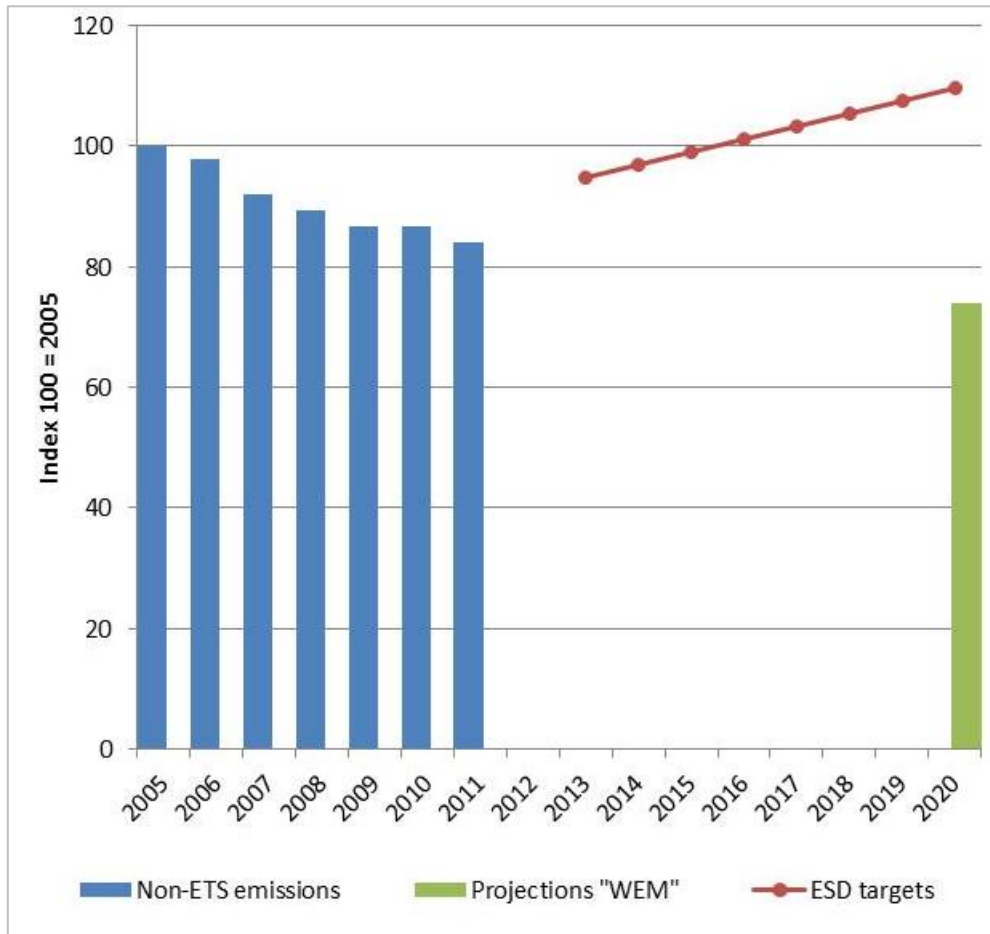
Under the Kyoto-Protocol the emission reduction target for Hungary for the period 2008-2012 has been set to minus 6 % based on 1985-87 for CO₂, CH₄ and N₂O and on 1995 for F-gases. An evaluation of the latest complete set of greenhouse gas data (for the year 2011) shows that Hungary's emissions have decreased on average by 42.7% against the Kyoto baseline (EEA 2013a). Hence, Hungary is expected to definitely meet its Kyoto target through domestic emissions reductions directly.

By 2020, Hungary can increase its emissions not covered by the EU ETS by 10% compared to 2005, according to the Effort Sharing Decision (ESD) ⁽¹⁾. The most recent data suggest that Hungary is currently on track to meeting that target. According to the 2011 inventory data, emissions in 2011 were 11% below the Annual Emissions Allocation (COM 2013) for 2013. National projections show that Hungary is expected to continue this trend and significantly overachieve its 2020 target. Emissions in a scenario with existing measures are projected to decrease by 2020 by 26% and in a scenario with additional measures by 30% ⁽²⁾ (EEA 2013b).

Figure 1 shows Hungary's non-ETS emissions until 2011, its targets under the ESD for the period 2013-2020 and the projections with existing measures for 2020.

¹ 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.

² Calculations are based on domestic emissions only, without accounting for possible use of flexibility options. The 2020 targets and 2005 non-ETS emissions are all consistent with 2013-2020 ETS scope, i.e. they take into account the extension of the ETS scope in 2013 and the unilateral inclusion of installation in 2008-2012.

Figure I: Non-ETS emission trends and projections compared to the ESD targets

Source: EEA. Projections are based on 15/04/2013 draft GHG inventory submissions under the UNFCCC and MS projections submitted

Table I: GHG emission developments, ESD-targets and projections (in Mt CO₂eq)

	1990	2005	2010	2011	ESD target*		2020 Projections**	
					2013	2020	WEM	WAM
Total	99.0	79.5	67.9	66.1				
Non-ETS emissions (% from 2005)		51.9	45.0	43.7 -16%	49.3 -5%	56.6 10%	38.3 -26%	36.1 -30%
Energy supply (% share of total)	22.7 23%	18.4 23%	16.7 25%	16.0 24%				
Energy use (w/o transport) (% share of total)	34.7 35%	24.5 31%	18.2 27%	17.6 27%				
Transport (% share of total)	8.3 8%	11.9 15%	11.8 17%	11.4 17%				
Industrial processes (% share of total)	11.6 12%	8.9 11%	6.4 9%	6.2 9%				
Agriculture (% share of total)	15.5 16%	9.2 12%	8.5 13%	8.8 13%				

Source: UNFCCC inventories 2011; EEA (2012c, 2013b); COM (2013), Calculations provided by the EEA and own calculations.

* The ESD target for 2013 and for 2020 refer to different scopes of the ETS: The 2013 target is compared with 2011 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

scope of the ETS from 2013-2020. Non-ETS emissions in 2005 for the scope of the ETS from 2013-2020 amounted to 51.1 Mt CO₂eq.

** 2011 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, summarised by the EEA, need to be prepared by the Member States in accordance with the EU Monitoring Mechanism ⁽³⁾ every two years, and the latest submission was in 2013. However, Hungary has not handed in 2013 projections so far and the latest data available is from 2011.

The projections need to be prepared reflecting a scenario that estimates 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 - as outlined by Hungary as basis for the projections as of April 2011 - have been summarised with a focus on national measures and those EU instruments expected to reduce emissions the most ⁽⁴⁾. An update on the status of the policies and measures is included in order to assess the validity of the scenarios. Below the tables, a summary assessment can be found.

Table 2: Existing and additional measures as stated in the 2011 GHG projections

Existing Measures (only important national measures; w/o EU legislation)		Status of policy in January 2013
Energy	KÁT subsidy for renewable power: electricity providers must purchase renewable power at subsidized prices	Ongoing, new tariffs adjusted to reflect level of inflation came into force on 01.01.2013
	Direct financial support for the preparation and construction of renewable power projects	Implemented under the New Széchenyi Plan; project applications for the subsidy can be handed in since January 2013. Specific programmes include: "meeting local heat and electricity demand with renewable energy sources" and "meeting the local heating and cooling demand with renewable energy sources"
	Crop subsidies for biofuel/biomass plants to ensure competitiveness with other agriculture	Ongoing, regulated by Ordinance no. 33/2007 (IV.26.) by the Ministry of Agriculture.
	KÁT subsidy for cogenerated power: electricity providers must purchase power from cogeneration at subsidized prices	Cancelled on 01.07.2011; cogenerated power is no longer eligible for subsidized prices
	KÁT subsidy for waste-generated power: electricity providers must	Ongoing, new tariffs adjusted to reflect the level of inflation came into force on 01.01.2013

³ 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.

⁴ The implementation of the EU-ETS has not been included. Other EU Directives have only been considered if they have been outlined in the projections as one of the main instruments to reduce GHG emissions.

	purchase power from waste projects at subsidized prices	
	Financing or co-financing modernization of district heating systems	Implementation ongoing under the New Széchenyi Plan; the specific programme is called "modernising the district heating sector by utilizing renewable energy sources" and project applications for the subsidy can be handed in since December 2012.
	Subsidy for demand-side energy efficiency improvements in district heating systems	Implementation ongoing under the New Széchenyi Plan; the specific programme is called "modernising the district heating sector by utilizing renewable energy sources" and project applications for the subsidy can be handed in since December 2012
	Regulation on energy performance and efficiency of buildings	Ongoing, based on Decree No. 7/2006. (V.24.) by the Ministry without Portfolio; the decree foresees for example to consider the use renewable energy sources in newly built buildings
	Energy certification of buildings	Ongoing, based on Decree No. 7/2006. (V.24.) by the Ministry without Portfolio and by Government Decree No. 176/2008 (VI.30.)
Energy Efficiency	Subsidy for energy efficiency improvement projects in residential building;	Implemented as subsidy programmes "Supporting the utilization of renewable energy sources by expanding the use of solar installations for heat generation" and "Heating refurbishment". Calls for project applications were accepted until May 2012 and September 2012 respectively; Implementation and financing of the winning projects is ongoing
	Subsidy for low-income households to replace inefficient equipment/appliances with more efficient models	Programme terminated and implementation of winning projects completed
	Subsidy for energy efficiency projects at public institutions via Regional Operative Programmes	Implementation and evaluation of the contracted winning projects ongoing
	Low interest loans for industrial energy efficiency projects via the Energy Efficiency Credit Fund	The fund has been terminated on 20.03.2012
	Minimum efficiency criteria and labelling of household appliances	No changes
Transport	Mandatory share of biofuels within the traded amount of fuels, heavy fines for non-compliance	Ongoing, for 2013 the quota amounts to 3.1% for petrol and 4.1% for diesel
	Road toll for heavy vehicles	Investment as well as income considered in the Hungarian state budget for 2013 by Law no. CCIV from 2012, according to the allocation of budget in 2013 for a road toll system for heavy vehicles, it seems that the implementation of these measures is assured; however, the infrastructure itself has not been put into place yet
Other non-ETS	Government investment in state-owned forests, subsidy for	Implementation ongoing within the National Reforestation Programme from 2008 and subsidy

sectors	afforestation projects by private entrepreneurs	programme by the "New Hungarian Rural Development Programme 2007-2013" including afforestation and reforestation measures
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Source: Reporting of MSin accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, April 2011

Additional Measures: Still to be implemented (only important national measures; w/o EU legislation)		Status of policy in January 2013
Energy	New nuclear units in the Paks NPP: Two new 1000 MW units from 2025 and 2030	Under preparation; first consultations with potential subcontractors have started
	Including energy efficiency principles in public procurement procedures	the Hungarian Public Procurement Institute has elaborated a draft for a decree on public procurement including energy efficiency principles and the possibility for ESCO-contracting; the draft is under revision at the Ministry of National Development and the Ministry of Rural Development; the decree is expected to enter into force by July 2013
Energy Efficiency	Minimum efficiency requirements for office equipment	The draft of the decree on public procurement will enforce the Ministry of Rural Development to adopt minimum efficiency requirements for office equipment
	Voluntary agreements in industry to reduce energy consumption and/or directly reduce emissions.	No policy developments
	Subsidy for industrial heat recovery projects	Subsidy programme available under the Environmental and Energy Operative Programme: "producing electricity and combined heat and power from renewable energy sources, as well as methane" available since January 2013
	Mandatory energy consumption labels for household boilers, air-conditioning equipment and water heaters	
Transport	Governmental/municipal investments in P+R (Park and Ride) facilities	Some investments planned by the BKK (Budapest Transport Centre) e.g. in the course of modernising the metro

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, April 2011

According to the current state of implementation, a large number of the policies listed as existing measures appear to have been realised or are in the process of being implemented, giving no significant indication as to a direct risk of them not providing their assumed emission reduction benefit. However, a detailed quantitative evaluation is not available at this point. Little progress has been made so far to advance those instruments listed as additional measures, which raises doubts over the likelihood of their emission reductions materialising. However, the additional reduction expected from these

measures was relatively insignificant in terms of their additional reductions making a difference towards target achievement.

In total, the assessment of the 2011 WEM/WAM scenarios indicates no obvious risk of the target not being met. Considering the fact that current emissions are well below the target and there is progress under the existing measures, there seems to be a high degree of certainty that the target will be met with a wide margin. The additional reductions possibly coming from the WAM scenario would strengthen this assessment.

3 Evaluation of National Reform Programme 2012 (NRP)

In April of each year, Member States are required to prepare their National Reform Programmes (NRPs), which outline the country's progress regarding the targets of the EU 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 ⁽⁵⁾.

In the following table, the main policies and measures as outlined in the NRP of April 2012 ⁽⁶⁾ have been summarised, and their current status (implemented, amended, abolished, or expired) is given, with specifics on latest developments.

Table 3: Main policies and measures as outlined in the NRP, April 2012

Update definition "green vehicle" as it applies to the existing 5-year initial vehicle tax exemption for green vehicles	
Status as stated in the NRP	New definitions being set, to apply starting 01.01.2013
Status as per Jan 2013	New definition in force as of 01.01.2013
Description of policy or measure	Eligibility for the tax exemption is based on the relative fuel efficiency of the respective car, truck, bus, van or camper in question – compared to others in its class. The equation used to calculate relative ranking that defines 'best in class' and thus exempts the vehicle from vehicle taxes for 5 years has been adjusted to reflect the more efficient state of current fleets, i.e. some vehicles that would have gotten the exemption by the 2012 definition now do not..

⁵ 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).

⁶ All NRPs are available at: http://ec.europa.eu/europe2020/documents/related-document-type/index_en.htm

Preparation of Hungarian Decarbonisation Schedule (HDS) 2050

Status as stated in the NRP	First six months of 2012: prepare background studies (in several steps). 2013: integration of HDS into the <i>National Climate Change Strategy</i> currently under revision
Status as per Jan 2013	Revision of the <i>National Climate Change Strategy</i> by the State Secretariat for Energy and Climate is ongoing
Description of policy or measure	Studies examine key sectors (energy, transport, built environment, industry, agriculture, etc.) under various scenarios: with what costs and what benefits can Hungarian emissions be reduced radically, in line with the European decarbonisation process?

Spreading of environmentally friendly transport modes: develop fixed-rail transportation and replace vehicles used in public transport (buses) with new, environmentally friendly vehicles

Status as stated in the NRP	During 2012: call for application, concluding contracts End of 2012/early 2013: launch procurement of CNG buses, start manufacturing, start establishing CNG infrastructure During 2013: CNG buses put into operation in public transportation
Status as per Jan 2013	In Szeged, 43 CNG busses are in place. In Budapest, the BKV (Budapest Transport Company) has bought two second-hand CNG busses from France. The Hungarian bus company Orangeways Dél-Alföld, Ltd. has started testing CNG buses in Baján in August 2012; in the beginning of 2013, nine buses running in Baján shall be replaced by CNG buses; later on, 50 buses on the other routes shall be replaced; a concrete timeline has not been elaborated
Description of policy or measure	Goal of the measures: reduce GHG emissions and particulate matter from old, inefficient buses. Some parts of the overall policy are already underway, financed by EU funds allocated to the Transport Operational Programme: tram project in Debrecen, Underground line No. 4 in Budapest.

Consultations with the European Commission and social partners regarding the regulatory environment of the renewable energy sources feed-in tariff system

Status as stated in the NRP	Renewables support schemes to be announced in 2012
Status as per Jan 2013	Various projects under the fourth priority axis of the Environment and Energy Operational Programme have been launched in January 2013 including the subsidy programmes "meeting local heat and electricity demand with renewable energy sources", "meeting the local heating and cooling demand with renewable energy sources" and "producing electricity and combined heat and power from renewable energy sources, as well as methane"; the overall subsidy budget of these programmes sums up to 35 billion HUF (app. € 121 million) for the period of 2012-2013.
Description of policy or measure	Approval of the EU Commission is necessary for ensuring that an amount of HUF 40 billion is available for supporting renewable energy sources within the frame of the fourth priority axis of the Environment and Energy Operational Programme (EEOP), financed by the European Regional Development Fund (ERDF).

Energy efficiency programmes in residential buildings: support budget of HUF 1.9 billion is planned for continuation of existing programs through 2020

Status as stated in the NRP	Estimated total funding needed is HUF 540 billion, programmes have existing budgets, Ministry of National Development will announce funding status in first six months of 2012 – financing depends in part on income from sales of Assigned Amount Units (AAUs) under green investment scheme.
Status as per Jan 2013	Calls for project applications in the subsidy programmes “Supporting the utilization of renewable energy sources by expanding the use of solar installations for heat generation” and “Heating refurbishment” ended in May 2012 and September 2012, respectively; Implementation and financing of the winning projects is ongoing; in total, approximately 3.8 billion HUF are available under these programmes; app. 5100 subsidy contracts have been settled.
Description of policy or measure	Existing programs are funded in part by proceeds from AAU sales and from Hungary’s national renewal fund (New Széchenyi Plan), which is financed by EU payments and other grants. These programmes include sub-programmes of the New Széchenyi Plan such as “Complex energy efficiency restoration of residential buildings having been built in the traditional way,” a “Climate Friendly Home,” the „Our Home” renovation, and the „Building New Home” sub-programmes. Green Investment Scheme sub-programmes include one for promotion of renewable energy usage, one for installation of multifunctional solar collector systems for residential hot water and heating, as well as a (planned) environmental awareness program targeting consumers.

Improving the energy efficiency of public services

Status as stated in the NRP	Continued implementation is foreseen through 2020
Status as per Jan 2013	the Hungarian Public Procurement Institute has elaborated a draft for a decree on public procurement including energy efficiency principles and the possibility for ESCO-contracting; the draft is under revision at the Ministry of National Development and the Ministry of Rural Development; the decree is expected to enter into force by July 2013
Description of policy or measure	<p>The measure includes several elements of sustainable energy management (energy management tools and complex energy efficiency restorations), and is aimed to ensure that the public tasks are performed with the least possible energy use. Specific measures planned in 2012 included:</p> <ul style="list-style-type: none"> - Modernizing buildings that house public institutions - Creating a survey of energy efficiency at public institutions - Examining and preparing the adaptation of energy management tools into the public sector

Improving the energy efficiency of businesses	
Status as stated in the NRP	Foresees continued implementation through 2020. The funding for those existing schemes (via the New Széchenyi Plan) extends through 2014, announcement of new funding schemes was planned for first six months of 2012.
Status as per Jan 2013	Implementation is ongoing; new calls for project applications started in December 2012 and January 2013, respectively
Description of policy or measure	The measure extends existing support for energy efficiency through programmes of the New Széchenyi Plan to businesses specifically. The programmes in question are the same ones listed under the measure "Energy efficiency programmes in residential buildings" above.

4 Policy development

This section covers significant developments made in key policy areas between May 2012 and January 2013. It does not attempt to describe every instrument in the given thematic area. The time-frame was chosen based upon the release of the National Reform Programmes (in the section above) in April 2012, which contain the status quo for policy on most topics.

Environmental Taxation

The implicit tax rate on energy in Hungary has been steady over the last 15 years: At 76.2 € per tonne oil equivalent, it was the fifth-lowest in the EU in 2009. Meanwhile, energy intensity was the ninth-highest in 2010 (Eurostat, 2013), meaning that revenues from energy taxes are actually relatively high as a proportion of GDP. In 2010, energy tax revenues were equivalent to 2% of GDP, the ninth-highest value in the EU. Overall environmental tax revenues were at 2.6% (11th in EU), and pollution tax revenues in Hungary were the eighth-highest (Eurostat, 2012).

Law No. LXXXV of 2011 introduces an environmental tax on environment damaging products like accumulators, packaging, electronic equipment, fossil oil products, paper advertisement, and tires. The tax falls due by those persons or legal entities that introduce the listed products on the national market or use it for further processing on the national market. The tax will be calculated on the basis of the product weight and differs according to the product. For example, for tires 52 HUF/kg is due (app. 0.18 €), while different forms of packaging are taxed varying between 17-1800 HUF/kg (app. 0.06 – 6.22 €). On 01.01.2013, minor amendments of Law No. LXXXV of 2011 entered into force referring to procedural changes, e.g. changing deadlines and time periods for declaring relevant products and paying the tax or reallocating the tasks between the different state authorities.

Energy Efficiency

The energy intensity of the Hungarian economy was, as mentioned above, one of the highest among EU member states in 2010, having declined at a rate below the EU average since 2005 (5.3% versus 7.7%). Final energy consumption was also lower in 2010 compared to the 2001-2005 average, mainly as a result of declining industrial

energy use. In contrast, energy use in the transportation sector increased over the same time period (Eurostat, 2013).

In recent years, Hungary has set up an impressive array of subsidy programmes aimed at improving the energy efficiency of buildings. The residential sector has a huge energy savings potential (and therefore greenhouse gas emission avoidance), as simple upgrades to old soviet-era housing complexes can decrease power and heat use significantly. Financing for the building energy efficiency programmes comes mainly from the EU via various funds, including the Environmental and Energy Operative Framework, but also from the money Hungary made selling its surplus Kyoto Protocol assigned amount units (AAUs) to countries like Austria and Spain that need such units to meet their Kyoto targets.

A new call for efficiency projects started in December 2012 for the two subsidy programmes "Buildings' energy development and public lighting transformation" and "Buildings' energy development combined with use of renewable energy sources". Both programmes are part of the Environmental and Energy Operative Framework, and they each have a budget of HUF 30 billion (app. € 104 million). The National Development Agency is in charge of implementing and administering them. The first programme aims to improve heating and cooling systems, heat retention, and lighting in buildings. The second programme also supports building energy efficiency but includes a renewable energy component by requiring that renewable energy use (in the form of solar thermal water heaters, for example) account for at least 5% of the funded project's eligible costs. In both programmes, eligible parties are businesses or non-profit organizations. The subsidy covers a minimum of 10% and a maximum of 60-100% of the eligible costs, depending on the type of applicant. For businesses, the subsidy may amount to HUF 1-500 million or HUF 1-50 million.

The call for projects for the subsidy programme on "Supporting the utilization of renewable energy sources by expanding the use of solar installations for heat generation" opened in October 2011 and ended in May 2012. For eligible project applications, a subsidy contract was concluded, the investment had to be realized afterwards, and the subsidy has been paid retroactively after realizing the investment. Currently, the subsidy for approximately 4/5 of the contracted projects has been paid out. In total, approximately 4000 projects are funded under this programme. The programme's budget was 2.97 billion HUF. The subsidy addressed natural persons owning real estate with 12 apartments maximum. The maximum amount of subsidy was 50% of the eligible costs, representing 800,000 HUF per apartment. The Non-Profit Limited Liability Company for Quality Control and Innovation in Building (ÉMI) is in charge of administering this programme. A new call for project for the subsidy programme "Heating refurbishment" was open from August – September 2012 . Project applications for this subsidy could be handed in during this period and are currently under evaluation. The next step will be the contract conclusion for the winning projects. The programme's budget amounted to 864.4 million HUF. Eligible parties were natural persons owning the real estate. The subsidy amounted to 40% of the eligible costs, meaning a maximum 850,000 HUF for new boilers and 1.5 million HUF for solar installations. The Non-Profit Limited Liability Company for Quality Control and Innovation in Building (ÉMI) is in charge of administering this programme.

In addition to the individual subsidies, Hungary's National Development Ministry and ÉMI are jointly working on a long-term national strategy for energy efficiency in buildings. To

be finalized in summer 2013, the plan aims to present a conceptual framework for upgrading Hungarian buildings to be more energy efficient, as well as for constructing new buildings. Having an overall concept in place allows for more effective incentive programmes in this area in the future, including further subsidies.

Regarding new energy efficiency policies, there has been a recent legislative change regarding Decree no. 7/2006 (V.24.) on the determination of the energy performance of buildings, which has been modified on 9 January 2013. Based on these changes, state-owned buildings, which are undergoing renovation or be extended, have to fulfil the prescriptions of annexe 1 part 1, which mandatory defines limits for heat losses for different parts of the building (Decree no. 7/2006). Before this modification, the decree prescribed the fulfilment of these limits for heat losses only in case that fulfilling them would be technically feasible and economically profitable. This had to be examined according to the prescription of annex 4. Thus, the prescriptions were not mandatory in practice (Decree no. 7/2006).

Renewable Energy

Between 2005 and 2010, Hungary managed to nearly double the share of renewable in overall energy consumption, which came in at 8.7% of the total. Though the rapidity of this growth is impressive, the country still has far to go to reach its 13% target by 2020. Electricity generation from renewable source as a percentage of the whole increased steadily over the same time period, reaching 7.09% in 2010 (Eurostat, 2013).

The primary renewable energy support measure in Hungary is a feed-in tariff for renewably generated electricity. All renewable technologies are eligible. Biomass currently accounts for the largest share, ahead of wind and solar. The current tariffs for 2013 were published in December 2012. A unique aspect of Hungary's feed in programme is that the tariffs, or guaranteed prices the producers are paid for renewably generated electricity, vary by time of day and day of the week depending on demand. The rate is higher for renewable power supplied during peak hours. This system helps to make generators sensitive to electricity demand and provides a market incentive to optimize power generation.

Even though they were announced in 2011, there have been no reforms of the feed-in tariff system in 2012. Suggestions for reforming the system have been made by the Hungarian Energy Office and transmitted to the Secretary of State for Climate and Energy Policy. There has been no feedback from the Secretary of State yet.

Aside from the feed-in tariff, renewable energy is a beneficiary of subsidy programmes under the same EU Environmental and Energy Operative Framework that funds the many energy efficiency initiatives described above. A new call for projects a programme called "meeting local heat and electricity demand with renewable energy sources" opened in January 2013. The National Development Agency (Nemzeti Fejlesztési Ügynökség) allocated a new budget to the programme, which amounts to HUF 7 billion for the years 2012-2013. Businesses and nonprofits can receive the subsidy, which covers at minimum 10% of the eligible costs and at maximum 30-100% depending on the type of eligible party and the region. The programme co-finances projects setting up solar water heaters, photovoltaic installations, or solid biomass boilers in the range of HUF 1-50 million. Another such programme reinitiated in January 2013 is called "meeting the local heating and cooling demand with renewable energy sources" and co-finances the use of solar energy, biomass, biogas, gas from waste, geothermal energy, heat pumps, or renewable

cooling technologies. The programme's conditions in terms of allowed participants as well as minimum and maximum coverage of eligible costs is the same as the previous subsidy, but its budget of HUF 11.5 billion for the years 2012-2013 is much larger. Finally, a third programme providing financing for renewables that was also re-launched in January 2013 is called "producing electricity and combined heat and power from renewable energy sources, as well as methane". With the same conditions as the other two and also administered by the National Development Agency, this program has the highest overall budget for 2012-2013 at HUF 16.5 billion. The following technologies are eligible:

- PV-installations up to 500 kWp connecting to the grid
- PV-installations not connecting to the grid
- Combined heat and power facilities that run on biomass
- Hydroelectric facilities up to 5 MW including grid connection
- Biogas production and utilization
- Geothermal plants
- Wind power facilities

Energy Networks

A subsidy for district heating infrastructure that incorporates renewables is called "modernising the district heating sector by utilizing renewable energy sources." A new call for projects opened in December 2012. The overall budget is HUF 4 billion HUF for 2012-2013, and financing covers expenses incurred in improvement of district heating infrastructure. The programme addresses different forms of enterprises like limited liability companies, stock companies or cooperatives.

Transport

While emissions in all other sectors were falling, the transport sector in Hungary saw a large increase in emissions in absolute terms between 2005 and 2010 – transport's share of total national emissions rose from 15 to 28% during this time. From 2010 to 2011 a slight decrease of emissions could be observed (see Table 1). Transport taxation revenues in Hungary (excluding fuel charges) were equivalent to 0.5% of GDP in 2010, the 14th-highest value in the EU (Eurostat, 2012). Newly registered cars in Hungary increased by 9% in emissions efficiency between 2005 and 2011, when they emitted on average 141.7 gCO₂/km driven or 2% above the EU average in 2011 (EEA 2012e).

In order to get a handle on this sector's emission trajectory, Hungary's Coordination Center for Transport Development (Közlekedésfejlesztési Koordinációs Központ) is elaborating a *National Transport Strategy* that first sets long-term goals for the years 2020, 2030, and 2050 and then works out an action plan for 2014-2020. Initial background studies have already been prepared. A draft of the National Transport Strategy is due to be finalized by October 2013, and legal adoption of the plan is estimated to be completed by July 2014. According to Hungary's Coordination Center for Transport Development, the process for elaborating the *National Transport Strategy* has been initiated in the first half of 2012 by the Ministry of National Development in order to provide a national strategy for the transport sector as foreseen by the European Commission.

Aside from this long-range vision, Hungary also has specific transportation policies in place. A biofuel quota promotes biofuels and hydrogen produced with energy from

biomass or other renewable sources. Only certified biofuels satisfying specific sustainability criteria and outlined by law count toward fulfilling the prescribed quota. In June 2012, there have been minor amendments to Law No. CXVII of 2010 on the promotion of renewable energy in the transport sector and the reduction of greenhouse gases in the transport sector, but the quota level was not affected. However, amendments referred to deleting articles which stipulated changes to the secondary legislation, like introducing new definitions, and which had been implemented in the meantime.

Waste

Yet another subsidy programme under the EU's Environmental and Energy Operative Framework, also administered by the National Development Agency, concerns the waste sector. On 19 November 2012, a new call for projects was initiated for „improvement of residual waste management”. The programme supports measures to prevent waste as well as increasing capacities for waste collection and disposal, including landfill capacities. The total programme budget is HUF 28.22 billion for the financing period 2011-2013. Depending on the type of project to be financed, the subsidy covers 95-100% of eligible costs and amounts to at least 100 million with a maximum of HUF 8.5 billion.

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 2012 are listed, and their progress towards their implementation is assessed.

Existing Country Specific Recommendations	Progress
shifting part of the tax burden to energy taxes and recurrent taxes on property	No reliable information on policy developments regarding this subject was available at this point.
increase the crossborder capacities of the electricity network	According to the Hungarian Energy Office, no investments in the cross-border capacities of the electricity network have been realized in Hungary in the period from April 2012 to February 2013.)
ensure the independence of the energy regulator	There have been no changes regarding the relation between the energy regulator (The Hungarian Energy Office) and the responsible ministry (Ministry of National Development); however, according to the Hungarian Energy Office, the Offices' incomes are mainly independent from state budget consisting mostly of various tariff incomes.
gradually abolish regulated energy prices	No changes regarding abolishing regulated energy prices; final consumer prices for electricity have been reduced by 10% by a government decision and entered into force on 01.01.2013

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