National Energy Efficiency Action Plan (NEEAP) Progress Reports: The Czech Republic and Slovenia

This progress report is presented by AGREE.NET and based on the screening of National Energy Efficiency Action Plans (NEEAPs) of the Czech Republic and Slovenia.

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1. INTRODUCTION

Due to the European Commission's Action Plan for Energy Efficiency[1] and its objective to reach 20% savings in EU energy consumption by 2020, energy efficiency has ultimately become an essential part of the comprehensive strategy on climate change and energy.

The Energy Efficiency and Energy Service Directive (ESD)[2] requires Member States (MSs) to achieve a reduction target in end-energy use of 9% by 2016. Starting from 2008, MSs need to achieve energy savings in their final energy consumption of 1% per year over a 9-year period. Hence each MS needs to submit three National Energy Efficiency Action Plans (NEEAPs), which are supposed to practically demonstrate the commitment of the MS on how they are planning to reach that goal. Energy efficiency measures apply to the residential, tertiary, industrial and transport sectors.

The reduction targets mentioned above are non-binding and only present an objective, not a legal target. Nevertheless, MSs have to prepare NEEAPs which have to be approved by the European Commission and will be reviewed every 3 years. The submission deadline of the first NEEAP was June 30th 2007 (the deadlines of the remaining two are: 30th June 2011 and 30th June 2014).

The quality and extent of the NEEAPs differ significantly between the MSs. The majority of the MSs submitted their reports considerably after the official deadline. Therefore the Commission could not address all NEEAPs in its first assessment report of national energy efficiency action plans as required by directive 2006/32/EC on energy end-use efficiency and energy services.

This progress report reviews the first NEEAPs of the Czech Republic and Slovenia to identify their key strengths and weaknesses and provide recommendations for improving NEEAP implementation and formation in the future. The four main areas that have been analyzed are **energy growth rate and energy consumption**, **general aspects and sectoral overview of the NEEAP**, **financial and legal aspects and strengths**, **weaknesses and potential discrepancies**.

2. ENERGY GROWTH RATE AND ENERGY CONSUMPTION

Despite the achieved energy efficiency improvements, final energy consumption has increased

Both gross domestic and final energy consumption of Czech Republic has grown between 2002 and 2006 by about 10%. The transport sector shows the (30%) highest growth of energy consumption, while the industry sector's consumption has remained on the same level. The growth of energy consumption in households and the tertiary sector corresponds to general growth of whole economy.

PJ		2002	2003	2004	2005	2006	2006/2002
gross domestic energy consumption		1 755.0	1 904.9	1 916.2	1 892.4	1 931.0	110.03%
final energy consumption		984.3	1 053.8	1 089.0	1 079.3	1 096.2	111.37%
among which:	industry	395.0	397.1	411.1	400.6	395.8	100.19%
	transport	201.7	228.6	241.8	257.4	263.8	130.78%
	services and households etc	387.5	428.2	436.1	421.3	436.6	112.66%

Table: energy consumption of Czech Republic 2002-2006 (Eurostat)

The final energy consumption in Slovenia increased by 49% in the period from 1992 to 2007. Most of this increase occurred before 1997, especially due to transport. The annual increase from 2000 to 2006 was 2%. The highest increase happened in 1997, especially because of the transport sector. In 2007 the consumption of final energy fell for 1,2% the first time after 1998. The biggest increase in final energy use was in the transport sector – in 2007 107.2% more energy was used in comparison with 1992.

[1] Action Plan for Energy Efficiency, COM (2006) 545
[2] Directive 2006/32/EC on Energy End-use Efficiency and Energy Services

In the period from 2000-2007 the increase in average annual consumption of energy was 5.3%. Consumption rose the most in 2007 – 12.8% annual growth (the highest increase after 2000). In 2007 the transport sector was the most important with 37% consumption of final energy. The consumption of final energy in households in Slovenia has decreased in the last 4 years, after the period of growth from 1998[3].

Both the Czech Republic and Slovenia show high energy efficiency potential

The Czech Republic

1. Energy efficiency in buildings (in the residential and tertiary sectors)[4]: The technical potential of energy savings in residential buildings and buildings of the tertiary sector is calculated to be 175 PJ by 2050, which is more than 60 % of current energy consumption of the sector. Over 80 % of total Energy Efficiency (EE) potential is represented by space and water heating.

2. Energy efficiency in the industry sector[5]: The potential of energy efficiency in the industry is calculated to be 23 % of final energy consumption, i.e. 95 PJ by 2050. Annual potential of Combined Heat and Power (CHP) electricity production is calculated to be 5.6 TWh_{el} till 2020.

3. Transport[6]: Estimations of energy savings in the transport sector are based an assumed increase of transport volume by 20 % in personal transport and by 31 % in cargo transport by 2050. By 2020/2050 the effectiveness of fuel consumption is estimated to increase by:

- road cargo transport may increase by 10/30 %
- rail transport by 10/20 %.

The total energy savings target for Czech Republic for 2016 is 19842 GWh.

Slovenia

1.The residential sector: Expected energy savings in the residential sector after implementation of the NEEAP are in total 1,165 GWh[7]. The expected savings do not refer to Energy advice network for residents, since the final energy savings are indirect and therefore not measurable.

2. The tertiary sector: The expected energy savings in the tertiary sector after implementation of the NEEAP are in total 804 GWh[8]. The expected savings do not refer to green public procurement measures. The expected energy savings in end-use energy for the tertiary sector will be evaluated when a methodology is drawn up by the EU and is therefore not included yet.

3. The industrial sector: The expected energy savings in the industrial sector after the implementation of the NEEAP are in total 840 GWh[9].

4. The transport sector: The expected energy savings in the transport sector after the implementation of the NEEAP are in total 721 GWh[10].

The total energy savings target for Slovenia for 2016 is 4261 GWh[11].

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[3] http://kazalci.arso.gov.si/kazalci/index_html?Kaz_id=164&Kaz_naziv=Raba%20kon%C4%8Dne%20energije%20po%20sektorjih&Sku_id=7&Sku_naziv=ENERGIJA&tip_kaz=1#KAZALEC_TOP

[4] Potenciál úspor energie v obytných a administrativních budovách do roku 2050. Porsenna 2007.

[5] Možností úspor energie v českém průmyslu. Ekowatt 2008.

[6] Zpráva o potenciálu snížení emisí skleníkových plynů v České republice. MŽP 2007

[7] National Energy Efficiency Action Plan 2008-2016, Republic of Slovenia (2008).

[8] National Energy Efficiency Action Plan 2008-2016, Republic of Slovenia (2008).

[9] National Energy Efficiency Action Plan 2008-2016, Republic of Slovenia (2008).

[10] National Energy Efficiency Action Plan 2008-2016, Republic of Slovenia (2008).

[11] Promoting Energy Efficiency in Europe – Insights, Experiences and Lessons learnt from the National Energy Efficiency Action Plans, Energy Efficiency Watch (2009).

3. GENERAL ASPECTS AND SECTROAL OVERVIEW OF THE NEEAP

Most Member States failed to submit their first NEEAP on time, leading to infringement procedures, but without any real consequences

The deadline set by the European Commission (EC) for Member States to submit their first NEEAP was 30th June 2007. Neither of the 2 observed MSs submitted their first NEEAP on time. The Slovenian NEEAP was finally published January 31st 2008, more than half a year too late. The Czech NEEAP was not submitted on time either, but before October 17th 2007. Infringement procedures for failure to notify the first NEEAP to the EC were launched on October 17th 2007 for the remaining MSs that had not yet submitted their NEEAPs on time, including Slovenia.

When infringement proceedings are launched, there are usually multiple steps in the procedure to provide the respondent with the opportunity to admit to or rectify the non-compliance, so as to avoid the costs and time of a legal trial. This was also the case in October 2007, when the EU Energy Commissioner announced the launch of the first stage of Commission proceedings against 12 states that had not submitted a NEEAP as required under the EU End-use efficiency and Energy Services Directive. This first stage consisted of a final warning, indicating that a full infringement procedure would be instituted if the relevant obligations were not met within a certain period. Fines for Slovenia were not introduced.

The Czech and Slovenian NEEAPs missed the chance to adopt energy saving targets that go beyond the minimum indicative target of 9%

The Energy Service Directive sets a minimum indicative saving target of 9% within the NEEAP that each MS needs to achieve over a nine-year period (2008-2016). Both, Slovenian and Czech NEEAPs complied with the requirement of setting up a 9% savings target. However, neither NEEAPs include any additional savings targets that go beyond the minimum target. Nevertheless, it is stated that Slovenia, with the number of instruments that are provided, will achieve savings in final energy consumption in the 2008-2016 period of at least 9% in comparison with the baseline final energy consumption. This could be an indicator, that savings targets would most likely be higher than the expected 9%, however, no specific numbers are given.

NEEAPs do not, or only sporadically, provide voluntary agreements to achieve energy savings

MSs are able to provide voluntary agreements between the national government and public and/or the private sector to achieve energy savings. Within the Czech NEEAP, such voluntary agreements are not mentioned. One of the instruments that has a voluntary character within the Slovenian NEEAP is the exemption from the payment of environmental taxes for air pollution from CO_2 emissions or a reduction in the amount payable. Combustion plant operators in the industry that are not included in the ETS, and combustion plan operators in the tertiary sector are able to sign of a voluntary agreement on reducing air pollution from CO2. Up to now, 155 companies have signed an agreement on the reduction of greenhouse gas emissions, binding them to perform the measures laid down in the agreement within a specified period. Thereby they will reduce their total specific annual emissions by at last 2.5% with regard to the specific annual emission of CO2 in the baseline year, in accordance with the Degree on the Environmental Tax on Air Pollution cause by Carbon Dioxide.

NEEAPs use spatial planning as a tool for reducing energy use only to a limited extent

Special measures concerning spatial planning aiming at reducing energy use, and as well as improving the quality and extent of transport infrastructure, are presented in the NEEAPs differently. In the Czech NEEAP, some of the measures are presented through planning of construction of new buildings, power plants and transport, but those can be considered rather indirect consequences. It cannot be said that some parts of the Czech NEEAP focus on spatial planning specially.

The Slovenian NEEAP addresses special measures within the transport sector that concern spatial planning aimed at reducing energy use and emissions, as well as improving the quality of the transport

infrastructure. Some of the instruments are: the promotion and competitiveness of public transport (e.g. the establishment of intermodal terminals, the establishment of information centres, selective car-park charging), promoting sustainable freight transport (e.g. the development of logistics centres, transhipment terminals and intermodal hubs and the use of piggyback trains), the construction of cycle paths and promotion of cycling (e.g. construction of 500 km of cycling paths and other cycling infrastructure - parking areas for cycles, etc.).

Czech and Slovenian NEEAPs do not, or just indirectly, promote change in driving behaviours

Changing driving behaviours through eco-driving initiatives can explicitly contribute to saving fuel. These kind of initiatives itself or similar solutions are not promoted within the Czech NEEAP.
The Slovenian NEEAP does promote changes in driving behaviours through eco-driving initiatives, but only indirectly. The only instrument for increasing the energy efficiency of road motor vehicles is to finance promotional and educational activities (e.g. safe-driving schools) that could be seen as a promotion of changing driving behaviours through eco-driving initiatives. Nevertheless, a lack of clear identification of measures can be identified since there is no detailed programme of activities.

The Public sector's exemplary role receives no attention in the Czech and rather limited financial support in the Slovenian NEEAP

The public sector shall play a leading role in the NEEAPs as demanded by the Energy Serving Directive. It would therefore be important if the NEEAPs adopt an ambitious public sector savings target or give special attention to the public sector. Within the Czech NEEAP, it is not very clear how big of a role the public sector shall play since the saving target accounts for the whole tertiary sector (the share of cuts of tertiary sector on whole cuts is about 16%). The fulfilment of the requirement of the public sector as a demonstration of the exemplary role is not mentioned. Due to this rather weak and immature approach, these targets cannot be considered as ambitious. With respect to providing energy efficiency advices, there are few similar measures just named in part of "supportive measures".

The Slovenian NEEAP has given special attention to the public sector. Several instruments have been introduced for the public sector (e.g. the energy-efficient renovation and sustainable construction of buildings, energy-efficient heating and ventilation systems and efficient electricity use). In addition to these instruments, green public procurement will be introduced for the public sector to highlight its exemplary role. The NEEAP will regulate green public procurement inter alia in the following areas: construction and reconstruction of buildings, the purchase of cars and public transport vehicles that use alternative types of fuel, the purchase of energy-efficient computers and other electrical and electronic office equipment, the purchase and rent of energy-efficient buildings, the purchase of energy produced from renewable energy sources. The monitoring of energy consumption (energy accounting) in public buildings will be a further important public sector instrument. Some of those targets can be considered ambitious but as long as not all financial prerequisites are met, it is rather questionable if those targets can be actually met.

A strategic approach to the effective implementation of energy efficiency measures is lacking in Czech NEEAP, while the Slovene one shows it to some extent

Within the Czech NEEAP no strategy description is included. Only a very vague (one short phrase) formulation can be found of one or two ways on how to decrease energy consumption for each kind of fuel (liquid, solid, gas, CHP, electricity). A list of measures in place and under preparation is included in the NEEAP, none of them are connected to show their potential synergies and none of them include best practices.

The Slovenian NEEAP implements 29 instruments to reach the energy saving targets. Since instruments that were already introduced in Slovenia where not implemented in the promised scale, additional measures were introduced and spread horizontally and multisectorally. The measures described in the NEEAP cover a wide range of instruments, each including the following information: instrument / type of instrument / target group / efficient energy use measures / effect /expected energy savings / public funding / status and timetable of implementation and institutions responsible for achieving saving target. Regarding the development of best practice and synergies the following measures in the NEEAP can be identified: awareness-raising; information; promotional and training

programmes; demonstration projects and educational programmes; presentation of activities in the area of efficient energy use in the public sector and exchange of best practices in the public sector. More detailed examples are not given.

Emission reduction effects are clearly shown in the Slovenian NEEAP whereas the Czech NEEAP is not mentioning the emission reduction effects

The equivalent of Green house gases (GHGs) saved by energy saving measures can be addressed in order to see the impact of the different measures and their contribution to greenhouse gas reductions. The Czech NEEAP does not mention anything connected to GHG at all.

The Slovenian NEEAP on the other hand, calculates the reduction of greenhouse gas emissions in kt of CO_2 per year in all the identified sectors within the expected energy savings.

The NEEAPs distinguish between measures already implemented and additional measures, showing that to consider additional measures is clearly questionable

The Czech NEEAP clearly distinguishes between measures that are implemented, measures that are under adjustment (modification) and those that are under preparation. It might seem that a lot of measures have already been implemented and lot of them are going to be implemented. The crucial problem is that the majority of these already implemented measures are not really effective. The same problem applies to measures that are under preparation.

The Slovenian NEEAP does distinguish between measures already implemented and additional measures. It illustrates a wide range of early activities that were implemented during 1995-2007. This includes financial incentives for investment, financial incentives for operations, innovative financial instruments, information provision, awareness-raising, energy advice as well as regulatory instruments. The additional measures cover a wide range of instruments and areas that had only partly been covered before. A good quantity of additional measures was introduced but not all of them are implemented yet.

The Czech NEEAP does not claim early savings, while Slovenia only claims early savings in case the target set in the NEEAP cannot be reached

EU Member States must set a framework target that leads, via energy services and other measures to improve energy efficiency, to a cumulative energy saving of 9% over a nine-year period (2008-2016). Measures initiated since 1995, and exceptionally from 1991, may also be taken into account.

The Czech NEEAP does not claim any early savings since the Action Plan envisages that it will be possible to achieve the targets by implementing the instruments it proposes. Within the Slovenian NEEAP energy savings resulting from the implementation of earlier activities in the period 1995-2007 will be taken into account only in the case the targets set out in the NEEAP are not reached. Measures carried out before 1995 cannot be claimed as early savings.

The role of energy suppliers in the implementation of measures remains unclear in the Czech NEEAP, while the Slovenian NEEAP introduces instruments for the energy suppliers

Czech energy suppliers are involved in the process of implementation of EE policies, but to which extent remains unclear. In Slovenia the implementation of energy use management programmes for end consumers as a public service obligation of public energy companies (distribution network system operator, transmission network system operator), of energy companies within the framework of implementation of energy consumption reduction programmes for end-consumers on the basis of market principles, are being introduced as new instruments. In accordance with the reformulation of legislation (transposition of Directive 2006/32/EC, Article 6, into Slovenian legislation), it is possible that energy companies will be obliged to ensure energy savings to a specified extent in relation to the sale of energy to end consumers or buyers. The requirement was already transposed in the Energy law (June 2008). Secondary legislation is under preparation and is expected to be adopted in first half of 2009.

The role of energy services is not sufficiently addressed in the NEEAPs and also often not efficiently implemented

Within the Czech NEEAP there are few measures that might be considered as a part of the energy service products (e.g. EE advisory centres already existing, while the obligation to offer energy services and to inform general public will be implemented in 2009 only), but these are actually very rare and have almost no measurable impact.

Within the Slovenian NEEAP, the role of Energy Services is addressed with a contractual reduction in energy costs (performance contracting), by the promotion of the energy services market (e.g. removing legal barriers to the use of these types of financial instruments, establishing a qualified energy service provider scheme, public sector support for project preparation and tendering). The aim of the instrument is to engage private money for measures in the public sector. The instrument has been implemented to a limited extent and the legal bases allow the implementation of the instrument, however, there is a lack of experience with these types of projects, primarily in the public sector. These circumstances lead to the conclusion that the role of energy services is not sufficiently addressed, or better, not yet efficiently implemented. The above listed promotion activities can lead to satisfactory energy savings, but due to absence of specific measures (e.g. demonstration projects) the effect of the instrument is still questionable.

The Commissions first assessment report on the NEEAPs did not include any suggestions or measurements of improvement for the Czech Republic nor Slovenia due to the late submission

Within the fist assessment report of the NEEAP by the European Commission, the Czech Republic was not mentioned among countries that should improve some parts of the NEEAP. On the other hand the Czech Republic was not mentioned among countries with some positive statements either. Due to the fact that the Slovenian NEEAP was not submitted on time and was submitted later than the Czech NEEAP, it could, compared to the Czech NEEAP, not be considered within the finalization of the first assessment report.

4. FINANCING AND LEGAL ASPECTS

The information on energy efficiency mechanisms and financial/legal frameworks is well disseminated to market actors in Slovenia, while this is not the case for the Czech Republic

Awareness of EE measures probably exists among experts, while a lack of the same awareness with the public can be detected in the Czech Republic. There is a general agreement that EE is an important tool for the future energy mix, but the problem is that there are not really effective tools in place in the Czech Republic.

Within the Slovenian NEEAP the information on energy efficiency mechanisms and financial and legal frameworks is transparent and widely disseminated to relevant market actors. The instruments introduced to promote savings in final energy consumption in the residential, tertiary, industrial and transport sector and market actors are identified for each instrument and given responsibility to. Increasing energy end-use efficiency in all sectors constitute an important potential factor in reducing GHG emissions. Despite the comprehensive information and division, the sufficient availability of financial resources is still uncertain.

The scope and availability of the introduced funds and funding mechanisms is not appropriate

There were several different financial mechanisms (support for CHP, support for regeneration of panel multi-flat houses) already formally introduced in the Czech Republic. The problem remains that it is very difficult to call them effective. Apart from the other problems mentioned above, they lack sufficient level of funds that might be used for such a purpose. Recently prepared support schemes for EE in private residential buildings (using revenues from the state from Green Investment Schemes) seem promising, however it is difficult to evaluate the program now when the conditions have not been published (the program is to be launched in spring 2009).

Public funds as well as private funds are introduced in the Slovenian NEEAP. Nevertheless, Slovenia is still missing funds for the full implementation of the NEEAP. The shortfall of public funds is around EUR188 million: EUR 40 million for 2008-2010 and EUR 148 million for 2011-2016. Most of the money is supposed to come from the structural funds; the money was approved in National reference

document, but so far nothing was realised yet. The scope of measures and the volume of funds available are too limited and it is therefore imperative that Slovenia provides additional financial resources so that 9% energy savings can be achieved

Insufficient financial resources result in insufficient implementation of energy efficiency measures

The lack of sufficient financial sources within the Czech NEEAP has been the most important reason why there has not been significant level of EE measures applied in the Czech Republic (as for example the state program for reconstruction of prefabricated blocks or flats was stopped). If the technical potential of EE in residential buildings shall be realised, investments between 2007 and 2050 of EUR 1.88 billion annually[12] will lead to reaching the technical potential and to decreasing energy consumption of buildings in the Czech Republic by 60%. For such an investment, an incentive of a significantly lower amount is required and the government should profit from this unique occasion and allocate significant parts of incomes from the European Emission trading scheme to the sector of residential EE since the cost of EE measures in buildings are one of the most cost-effective measures for emissions reduction.

The Slovenian NEEAP provides financial resources only to some extent and a funding shortfall can be detected. The funding shortfall is suppose to compensated from the state budget and from funds collected on the basis of the supplement to network charges of the promotion of efficient energy use and renewable energy sources. For ensuring the remaining funds required for the implementation of investments (85 to 60% of investments), funds are also planned to come from private sources, the state budget and local community budgets, earmarked for the construction of public buildings and investment of the existing housing stock. In the 2008-2016 period, these funds amount to around EUR 717 million. It is unclear to which extent it will be possible to stimulate the private investment needed and it can be stated that sufficient financial resources are not available yet in order to achieve the desired energy savings.

Regarding financial incentives for efficient electricity use in Slovenia, only loans for the purchase of energy-efficient household appliances are currently available (in the past tax cuts were also in place). Co-financing and promotion of the purchase of energy-saving light bulbs have been only introduced on a low scale yet (a country wide promotion of one light bulb per household was implemented last year). Due to the phase out of inefficient light bulbs at the EU level a redesign of activities are most likely. The implementation of several instruments is either underway (e.g. further implantation of Energy labelling of household and other appliances will follow the EU dynamic) or not yet commenced (e.g. Efficient energy use for low-income households scheme). Due to those reasons, the full exploitation of those instruments cannot be guaranteed.

The absence of quantified financial and fiscal incentives will make it difficult to achieve energy efficiency improvements in many sectors

Within the Czech NEEAP there are financial incentives for CHP, for education on EE in general, for EE in buildings of the tertiary sector as well as other sectors. But the problem arises between the official introduction of such support schemes and their actual functioning.

The Slovenian NEEAP addresses financial and fiscal incentives for the residential, tertiary, industrial and transport sector. These are primarily financial incentives in which determination of energy savings are the most straightforward. For all these sectors several fiscal instruments have been introduced. In addition, the NEEAP also defines multisectoral and horizontal instruments, which affect a variety of areas or sectors. These include financial instruments (environmental tax, excise duty and electricity feed in tariffs) as well as exemption from the payment of the environmental tax (voluntary agreement). Concerning the implementation of several measures (e.g. financial incentives for the energy-efficient renovation and sustainable construction of buildings or financial incentives for energy-efficient heating systems due to investment subsidies financed from the budget fund, loans with a subsidised interest rate), it is stated that overhauled instruments will be implemented to a significantly greater scope than has been the case before. This statement is too vague since it does not quantify the scope of the instrument. Fast improvements in energy efficiency in these sectors are still to be questioned. Only if financial incentives are provided, will the planned savings be achieved.

[12] Potenciál úspor energie v obytných budovách do roku 2050. Porsenna, Praha 2007.

5. STRENGTHS, WEAKNESSES AND POTENTIAL DISCREPANCIES

The key strength of the Slovene NEEAPs lies in the calculations of emission reductions and comprehensiveness

The Czech NEEAP is in total only 13 pages long and this does not sufficiently provide enough information and measures to achieve the desired energy savings. Therefore no key strengths could be identified.

One of the strengths of the Slovenian NEEAP are its explicit calculations of GHG effects on EE measures, which are stated in kt CO_2 next to the amount of electricity saved (GWh). As another strength of the Slovenian NEEAP, the extent and the relative preciseness of measures can be identified. The report is very detailed and gives the reader a broad overview about existing regulations, different barriers and financial mechanisms. The presentation of each of the envisaged instruments comprises the type of instrument and the target group at which the instrument is aimed. Besides, it describes in detail the efficient energy use measure or the activity envisaged within the instrument. The expected effects, the savings in final energy consumption, the reduction in greenhouse gas emissions, the public funds required, the status and timetable of implementation, the ministry responsible for the instrument and the instrument implementer are also given for each instrument. It is transparent in terms of financial needs.

The residential sector has the best potential for reaching its energy saving target, provided that there is sufficient funding available

Within the Czech Republic, households and the tertiary sector seem to be the sectors, which would most likely reach its energy saving targets in case effective incentives are in place. Slight improvements can be seen within incentives for public buildings that are obtained through EU funds.

Since the NEEAP came into force beginning of January 2008 and hence not all instruments are implemented yet in Slovenia, it is too early to detect improvements in certain sectors. Additionally, due to the lack of current available data for the statistical year, a precise monitoring of certain sectors is not yet possible. Therefore it is too early to say which sectors will most likely reach their energy saving target. The available data on public spending indicates for this purpose a very slow start. However, the residential sector has enormous energy saving potentials and the use of energy in households in Slovenia is declining. The success of NEEAPs strongly depends on the availability of sufficient funding (state and private) and if all instruments are implemented to 100%.

The key weakness of both NEEAPs lies in the lack of financial resources for the instruments

The Czech NEEAP, consisting of 13 pages in total is already quite self-explanatory. However, it can be stated that the expectation in energy savings are unrealistic. The 9% saving target set up in the NEEAP cannot be reached if the current implementation progress continues the same way, since there will not be significant changes in the approach of the NEEAP as such. Another weakness is seen within the targets set up in the NEEAP since they are not calculated with an annual economic growth of 4 percentage points, but rather 6 percentage points annually, which from current perspective is clearly unrealistic.

Weaknesses in the Slovenian NEEAP are definitely seen within the part of financial resources that are not yet provided to all introduced instruments. Regarding economic instruments, the NEEAP misses to introduce income tax relief for the purchase of energy-saving appliances. Within certain instruments, the introduced measures are not specific enough, especially in the transport sector (e.g. promotion and education activities for increasing the energy efficiency of road motor vehicles). When looking at savings in final energy consumption in the transport sector, they are estimated, with the implementation of the measures described for the entire 2008-2016 period, as being 721 GWh. The NEEAP expects greater realisation of the estimated potential at the end of the period, when the construction of the necessary infrastructure will establish the conditions for the implementation of the

proposed measures. For this reason, the estimate of the savings made in the first three years (2008-2012) represents only 16.7% of the total estimated potential. It is questionable if the remaining 83.3% can be achieved in only a year longer timeframe than the first 16.7%. Since the majority of the energy saving potentials are planned more towards the end of the whole time period (2008-2016) it is questionable whether it is a smart strategy to postpone the biggest savings towards the 2nd half of the time period, even considering preparation and necessary time for start up. Nevertheless, certain technological developments will be supporting this strategy, but a more balanced strategy is recommendable.

The transport sector is most likely to have difficulties with reaching its energy saving target

Due to the limited information provided and measures proposed by the Czech NEEAP, probably all sectors will have difficulties reaching their energy saving targets.

Since energy savings only relate to savings achieved by active policy and do not relate to energy growth, increasing energy demand is decoupled from introduced measures. Relating to the available data and the lack of visible changes in Slovenia, the transport sector will most likely have big difficulties reaching its energy savings. The planned energy savings in industry are low relative to demand.

A gap is detected between the political commitment to energy efficiency and the adopted or planned measures and the allocated resources

Most likely the above mentioned gap is the biggest reason why there has not been significant decrease of energy consumption in Czech Republic and very likely will not be in the future either.

One of the economic instruments introduced in the Slovenian NEEAP that is supposed to work towards energy efficient measures in the transport sector are higher taxation of fossil fuels for motor vehicles (rise in tax on air pollution caused by CO2 emissions) and the level of tax on motor vehicles, brought in line with reimbursements for the use of roads with regard to the level of environmental burden imposed. Due to the introduction of the toll-road sticker in Slovenia, the level of environmental burden for each car cannot be identified. The former toll system provided measures, where the toll charge (and therefore the environmental pollution) was directly connected to the amount of travelling (distance based charging) to some extent or better for some parts of the highways only. The more you drove, the more you paid (polluter pays principle). With the introduction of the new toll-road sticker (time based charging), this mechanism is suspended and does not give direct incentives to reduce travelling nor does it burden individuals who pollute the environment to a much greater extent (the polluter pays principle is out of order). The reduced congestion does not outweigh this effect.

6. CONCLUSION AND RECOMMENDATIONS

This progress report reveals the different provisions of practical demonstrations of commitments of the Czech Republic and Slovenia on how they are planning to reach the set goal of 9% energy savings over a 9 year period. The Czech Republic has not been able to significantly decouple economic growth and energy consumption over the past decades, which appears as an additional challenge to achieve the desired energy saving target. Slovenia has decoupled economic growth and energy demand growth to some extent. Energy intensity is decreasing 2.8% per year (1995-2007) and 6.1% in the last year (in the last year over 6% GDP growth was achieved at 0.25% energy demand growth).

Czech and Slovenian NEEAPs missed the opportunity for harvesting the full efficiency potential

Furthermore, Slovenia and the Czech Republic were not able to submit their NEEAPs on time and due to the delay, the European Commission was not able to examine all NEEAPs comprehensively in their first assessment report. The minimum indicative saving targets of 9% was set within both NEEAPs but both reports missed the opportunity to show stronger signals by including saving targets that go beyond the minimum requirement.

Voluntary agreements between national governments and public and/or private sector to achieve energy savings were not mentioned in the Czech NEEAP. Slovenia introduced some instruments, which had voluntary characters.

Measures concerning spatial planning are not given special attention in the Czech NEEAP, whereas Slovenia addressed some measures within the transport sector aiming at reducing energy use and emissions. Changing driving behaviours through eco-driving initiatives were not considered in the Czech NEEAP. Slovenia is promoting such initiative only indirectly and clear identifications of measures cannot be identified.

The leading role of the public sector in the Czech NEEAP was not given special attention as demanded by the ESD, whereas Slovenia supports the exemplary role of the public sector. It is still unclear if financial prerequisites are met in order to fulfil the targets of the Slovenian public sector.

Early savings that could be claimed in order to meet the demanded energy saving target are not considered in the Czech NEEAP. In case Slovenia does not reach their energy saving targets set out in the NEEAP, Slovenia can claim earlier savings achieved in the 1995-2007 period.

Financial backup for the measures remains the key challenge in both countries

Regarding energy efficiency mechanisms and financial and legal frameworks and their dissemination to relevant market actors it can be expressed that within the Czech Republic no effective tools are in place. Recently prepared support schemes for EE in private residential buildings seem promising, however it is difficult to evaluate the program now when the conditions have not been published (program to be launched in spring 2009). Slovenia has introduced a variety of instruments for relevant market actors and provides comprehensive information about the instruments, but the availability of sufficient financial resources are still uncertain.

Different financial mechanisms in the Czech Republic were already and formally introduced but the financial mechanisms lack of sufficient level of funds. Despite of the introduction of private and public funds in the Slovenian NEEAP, a shortfall in availability of those funds could be discovered and measures and the volume of funds available are too limited. In order to achieve a 9% energy saving, Slovenia needs to guarantee financial resources. The volume of the funds tends to be adequate. In terms of the financial crisis higher intensity of public support might be needed in order to stimulate private investment.

The successes of NEEAPs strongly depend on the availability of sufficient funding.

Slovene NEEAP could serve as a role model for the Czech one

Both National Energy Efficiency Action Plans provide an overview of policy packages and measures on how to reach energy savings targets. The quality and quantity of these two Action Plans differ significantly. In order to reach the overall energy saving target of 9%, all measures announced need to be implemented and sufficient financial resources need to be provided. Moreover, the NEEAPs need continuous updating and strengthening in order to encourage further innovation towards a more energy efficient environment and to ensure compliance.

Due to the short length of only 13 pages and the insufficient provision of profound information and measures on how to achieve the desired energy savings, no key strengths could be identified in the Czech NEEAP.

For the Slovenian NEEAP the explicit calculations of GHG effects on EE measures, the extent and relatively preciseness of measures presented in the NEEAP could be identified as key strengths. The sectors, which seem most likely to reach the energy saving targets in the Czech Republic are households and the tertiary sector in case effective incentives are in place. Improvements within incentives for public buildings can be already seen. For Slovenia it is still too early to detect which sectors will most likely reach their energy saving targets, but the residential sector seems to be very promising due to the enormous energy saving potential.

Key open challenges and recommendations to address them

Regarding the weaknesses of the Czech NEEAP, its briefness is an obvious point. Also the estimation of the annual economic growth is from the current perspective clearly unrealistic. The weaknesses within the Slovenian NEEAP are certainly seen within the part of financial resources that are not provided to all introduced instruments. The instruments introduced in the transport sector are also not specific enough and do not provide concrete measures. Another weakness can be seen by postponing the majority of energy savings to the 2nd half of the 9-year time period. Certain technological developments will support this strategy but a more balanced strategy is absolutely recommendable. For the Czech Republic probably all sectors will most likely have difficulties reaching their energy targets. In Slovenia, the transport sector is likely to have big difficulties reaching its energy savings. For the Czech Republic it will be challenging to achieve energy savings in the industrial sector.

The lack of knowledge on energy efficient equipment and behaviour among private households, companies and public authorities remain as a major obstacle to energy efficiency improvements. For that reason, Agree.net urges Member States to provide educational material that provides sufficient and detailed information for the various market actors, assure education and training of key actors (designers, engineers, traders, decision makers in the public sector, officials in public sectors and the general public) and demonstration projects. Also energy audits particularly combined with advisory services play an important role when promoting investment related decisions. Independent audits offer necessary energy information and data basis for efficiency-related investments, which also might trigger additional activities and energy-saving investments that go beyond the standard. Member States need to ensure topical performance of energy audits in combination of comprehensive advisory services.

Besides broad information and advice, sufficient financial incentives like soft loans, grants, tax reductions or direct subsidy schemes must be given to all the relevant market actors (e.g. industry, the tertiary sector, the residential sector) to assure finances for high upfront costs for energy efficient technologies, to improve the energy performance of residential buildings as well as electricity use in households. Despite the increase of the development in the transport sector and the rather minor role it had been adjudged in the NEEAPs, the transport sector needs to be given special attention. The main focus should be on optimising energy use in vehicles, optimising the mobility management and modal split (e.g. information campaigns, expansion of public transport, support of cycle transport and pedestrians) [13].

The exemplary role of the public sector needs to be strengthened by early adoption of public procurement programmes, provide sufficient information and advice services. In order to achieve the committed energy savings, Member States need to make additional efforts. This begins by simply implementing all of the measures announced in the NEEAPs (in case they are sufficient enough), which represents a key factor for the success of national policies.

Solution to the downturn of EU's economy and the financial crisis

Especially when facing the downturn of the EU's economy in the wake of the financial crisis and to the shortcomings in the EU's security of energy supply, as well as facing serious threats of climate change, investments in energy efficiency is to the most suitable solution to tackling these problems. Energy efficiency is a vital component to achieve energy security, reduce energy consumption as well as GHG emissions. Furthermore ambitious investments in energy efficiency will stimulate economic growth, create jobs and encourage carbon productivity. As an important economic indicator, which supports ambitious energy efficiency deployments, energy efficiency measures have one of the lowest abatement costs for greenhouse gas reductions[14]. Energy Efficiency is a key player within the EU's Energy Policy and should consequently be given sufficient financial, political and legal support.

In order to react to the financial crises, MSs might be asked to redesign their measures in NEEAP devoted to industry by increased financial incentives intensity up to the level 60-70-80% (large, medium, small enterprises) as EU state aid rules allow such intensity.

[13] Promoting Energy Efficiency in Europe – Insight, Experience and Lessons learnt from the National Energy Efficient Action Plans, Energy Efficient Watch, 2009.
[14] McKinsey for Vattenfall 2007.

Priority measures/polices that need to be taken up
Supply of sufficient financial resources as planned
Make energy efficiency targets mandatory with substantial compliance regulations
Provide profound information and measures on how to achieve energy savings in NEEAPs
Raise awareness of energy efficiency potential among different stakeholders (households, industry, other relevant market actors)
Regular reviews of the NEEAPs on national level

Measures that should be included
Additional and concrete measures for the transport sector (e.g. optimising energy use in vehicles, optimising mobility management)
Balanced strategy for implementing energy savings over the whole time period