COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 23.6.2009
SEC(2009)889 final

COMMISSION STAFF WORKING DOCUMENT

Synthesis of the complete assessment of all 27 National Energy Efficiency Action Plans as required by Directive 2006/32/EC on energy end-use efficiency and energy services

MOVING FORWARD TOGETHER ON SAVING ENERGY

TABLE OF CONTENTS

1. Introduction 3

1.1. NEEAPs: purpose and scope 4

1.2. NEEAPs: the assessment process 5

2. Level of ambition: A cross-country comparison 6

2.1. National indicative energy saving targets 7

2.2. Difficulties with savings targets and periods covered 7

2.3. Cross-country comparison of NEEAP measures 9

2.4. Sectoral coverage in NEEAPs 12

3. Good practices by end-use sector 13

3.1. Good practices in buildings 13

3.2. Good practices in appliances and lighting 17

3.3. Good practices in the transport sector 21

3.4. Good practices in industry 25

3.5. Good practices in agriculture 27

3.6. Good practices: horizontal measures 27

3.7. Further observations on the measures in the NEEAPs 31

4. The exemplary role of the public sector 34

4.1. Best practices and innovative measures in the public sector 37

4.2. Weaknesses in the public sector 40

5. Information to end-users 41

5.1. Best practices and innovative measures in information provision 42

5.2. Weaknesses in information provision 44

6. Strengths and weaknesses and lessons learnt 44

6.1. Lessons learnt: sectoral issues 44

6.2. Lessons learnt: horizontal issues 46

7. Summary of assessments and lessons for the future 48

7.1. Summary on NEEAP assessments 48

7.2. Lessons for the future 50

8. Conclusions 51

COMMISSION STAFF WORKING DOCUMENT

Synthesis of the complete assessments of all 27 National Energy Efficiency Action Plans as required by Directive 2006/32/EC on energy end-use efficiency and energy services

1. INTRODUCTION

With this report, the Commission services provide a synthesis of its assessments of all 27 National Energy Efficiency Action Plans (NEEAPs). The synthesis report concludes the Commission's assessment and reporting on the first NEEAPs in response to its obligation under the Directive on energy end-use efficiency and energy services[1] (Energy Services Directive).[2] This synthesis report complements the partial response provided by the Commission in January 2008[3], the individual NEEAP assessments communicated to Member States by Commission services in the period July to December 2008, and the summary of this synthesis annexed to the Communication from the Commission on energy efficiency[4] adopted as part of the Second Strategic Energy Review on 13 November 2008. In January 2008, the response was partial because only a limited number of Member States had submitted their NEEAPs and few submitted Action Plans in time to allow for sufficient assessment in accordance with the Energy Services Directive's Article 14(5). Thus, although the Commission is under no legal obligation to do so, more comprehensive reporting on the NEEAPs was foreseen once all the NEEAPs had been notified by Member States to the Commission.

In accordance with Article 14(2) of the Energy Services Directive (ESD), the Member States were required to prepare a first National Energy Efficiency Action Plan (NEEAP) and to notify it to the Commission by 30 June 2007. NEEAPs are intended to stimulate the translation of energy savings objectives into concrete measures and actions at the level of each Member State, create dialogue between the Commission and Member States and set implementation milestones. As such the Action Plans provide practical demonstration of the commitments of Member States and should not be viewed as a bureaucratic exercise. The drafting of a strategy in the NEEAP, charting the way forward, is fundamental to our moving forward on energy efficiency and to creating the market conditions necessary to make sound consumer choices possible and energy efficient technologies and solutions available and affordable. Subsequent implementation, monitoring and evaluation of the strategies and measures identified, complemented by bench-marking and a 'peer review' process by the Commission services at European level, should help Member States to learn from the successes and mistakes of others and facilitate the diffusion of good practices throughout the Community. The Commission services will play an active role in widely disseminating these good practices in and between Member States and will also make sure that the contents of the

---

1 Directive 2006/32/EC, Art 14(5)

2 The ESD reporting requirements for the first NEEAP are set out in Article 14(2) and outlined in Annex II of this report, which describes the evaluation framework used for the purpose of the assessment presented in this synthesis report.

3 Communication from the Commission to the Council and the European Parliament on a first assessment of national energy efficiency action plans as required by Directive 2006/32/EC on energy end-use efficiency and energy services - Moving forward together on energy efficiency, COM(2008) 11 final

4 Communication from the Commission to the Council and the European Parliament on Energy efficiency: delivering the 20% target COM(2008) 772 final

Action Plans are communicated to a wider public of stakeholders and that the best examples are given prominence in the Commission services work.[5]

As stressed in the Communication on the first assessment of NEEAPs, the relevance of effective strategies to improve energy efficiency to the Community's integrated climate and energy policy cannot be overstated. The technical and economic potential for cost-effective energy efficiency improvements is well-researched and widely recognised now[6], as are the obstacles which need to be overcome[7]. With effective implementation of policies to overcome these barriers, energy efficiency improvements can make a very substantial contribution to achieving the Community's objectives. Importantly, the Plans provide a means for sharing of best practices among the many players in energy efficiency, at every level, and for developing synergies among the strategies and measures adopted. Commission services have established a Concerted Action on the Energy Services Directive (CA ESD) as a platform for Member State to facilitate such sharing and exchanges of good practices and lessons learnt. The Commission services intend to make active use of the National Energy Efficiency Action Plans for the purpose of policy development and the CA will be an important forum within which to facilitate the exchange between the Commission services and the Member States. The Commission services will also encourage Member States to integrate and coordinate the reporting required under the ESD with that provided for by the recast of the Energy Performance of Buildings Directive, the new Renewable Energy Directive, and the National Action Plans on Green public procurement, which Member States have or are in the process of adopting under the Commission's overall Green Public Procurement policy[8].

The Commission's responses and actions taken to meet the energy challenges facing the Community and how it is contributing to the achievement of Community energy savings targets is outlined in the Communication on "Energy efficiency: delivering the 20% target", mentioned above.

This report is limited to the evaluation of the Member States' NEEAPs, as required by the Energy Services Directive. The Commission services have therefore not analysed whether certain measures described constitute state aid and whether in this case the prescribed procedures have been respected. The findings in this report therefore do not restrain the right of the Commission to do a proper state aid assessment if deemed necessary. Within such an assessment the Commission would apply the Community Guidelines on State Aid for Environmental Protection[9] in order to decide whether a given state aid could be declared compatible. The Commission services would recall that any state aid must be notified before it is applied.

---

5 E.g. to this end an International joint-workshop on National Energy Efficiency Action Plans and Strategies was held by the International Energy Agency, the European Commission and the European Energy Network in Paris in October 2008.

6 See Study on Energy Savings Potentials in EU Member States, Candidate Countries and EEA countries, Fraunhofer ISI (forthcoming June 2009), for example

7 See Impact Assessment for Communication from the Commission on Action Plan for Energy Efficiency: Realising the Potential, COM(2006) 545 final of 19 October 2006, for example

8 http://ec.europa.eu/environment/gpp/index_en.htm

9 OJ 01.04.2008 C 82/1

1.1. NEEAPs: purpose and scope

For the purpose of the first NEEAP, each Member State should have adopted an overall national indicative savings target of 9% or higher, to be achieved and measured in 2016, and an intermediate national indicative savings target to be achieved in 2010.[10] [11] According to Annex 1 of the Directive, the national indicative savings target should be calculated using the annual *final inland energy consumption* of all energy users within the scope of the Directive. Consumption data for the most recent five-year period previous to the implementation of the Directive for which official data are available should be used to calculate an annual average amount of consumption. On the basis of this annual average amount of consumption, the national indicative energy savings target should be calculated and expressed as an absolute amount of energy. Hereafter the savings target, or the ESD target, if not otherwise stated is always relative to final inland energy consumption.

The Energy Services Directive also requires Member States to put in place institutional and legal frameworks and measures needed to remove barriers to efficient end-use of energy. As such the Directive is intended to act as a catalyst for renewed and more ambitious energy efficiency initiatives at all levels of European society – local, regional, national and Community. It should, when implemented, create the necessary conditions for the development and promotion of a market for energy services and the delivery of energy efficiency to end-users – the two main objectives of the Directive.

NEEAPs are intended to set out the national strategies of Member States towards the overall and intermediate national indicative targets, reflecting the spirit of the Directive and its overall objectives. Member States should show, in particular, how they intend to comply with the provisions on the exemplary role of the public sector and the provision of information and advice on energy efficiency to end-users.[12]

Member States must notify the second and third NEEAPs to the Commission by 30 June, 2011 and 30 June 2014 respectively.

1.2. NEEAPs: the assessment process

This report provides a synthesis of the assessments of the strategies and measures adopted by each Member State and presented in their first NEEAP. When the notification deadline expired, the Commission had received NEEAPs from only two Member States – Finland and the UK. Another fifteen Member State Plans were notified and included in the first assessment - Austria, Bulgaria, the Czech Republic, Cyprus, Denmark, Estonia, Germany, Ireland, Italy, Lithuania, Malta, the Netherlands, Poland, Romania, and Spain. The 27th NEEAP was notified on 6 June 2008, almost a year after the initial transposition deadline. Due to considerable delays in translation, the individual assessments of all the 27 NEEAPs were concluded only in early December 2008. Lithuania has since the conclusion of the

[10] According to Directive 2006/32/EC Art 2(b) undertakings covered by Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community (Emissions Trading Scheme) fall outside the scope of the Directive

[11] According to paragraph 2 of Article 4 of the Directive, the national energy savings in relation to the national indicative energy savings target shall be measured as from 1 January 2008

[12] Art 5(1) and Art 7 of Directive 2006/32/EC

assessment of the first NEEAPs adopted and submitted a revised Action Plan[13]. The Commission services welcome Lithuania's revised NEEAP and are also aware that several other Member States are currently taking efforts to improve and strengthen their NEEAPs. Lithuania's revised NEEAP has not been included in the present assessment, and the Commission is under no legal obligation to assess or comment on revised NEEAPs.

To ensure fair and equal treatment of all Member States, it should be noted that the assessment has been limited *only* to what is presented and put forward in the NEEAPs themselves. In particular the assessment focuses on identifying measures that appear to be examples of good practice with particular emphasis on the exemplary role of the public sector and the provision of information to end-users, which the Member States were required by the Directive to report on in their first NEEAP. The assessments were carried out between January and November 2008. A common evaluation framework has been used. It addresses the minimum reporting requirements set out in the Directive and covers six key areas: the targets; the measures and their estimated impacts in terms of savings; the public sector coverage; the provision of information; other observations of interest; and conclusions. Annex I includes short summaries of each of the 27 NEEAP assessments. Annex II provides a brief outline of the evaluation framework and the minimum reporting requirements for the first NEEAP.

A few difficulties affected and hampered the evaluation process. First and foremost, there were major delays by Member States in the submission of the NEEAPs. The lack of detailed information provided on measures and instruments, the absence or sporadic indication of saving estimates and underlying assumptions impeded the assessment of many NEEAPs. The Commission services have been unable to conclude concerning the realism of the strategies presented in several Member State NEEAPs, which it according to Article 14(5) of the Directive is expected to do. Some NEEAPs also fail to meet one or more of the minimum reporting requirements provided for by the ESD adding to the weakness of certain NEEAPs and the difficulty of conducting a proper assessment. In the future, non-compliance with reporting requirements for the second and third NEEAP, as set out in Article 14(2) of the ESD, may result in the Commission services recommending that an infringement procedure is started.

A uniform reporting template and common guidelines on the level of detail and type of data required in the NEEAPs are not provided for by the Directive.[14] The Commission services are currently drafting proposals for a template and common guidelines on reporting for the second and third NEEAP, but their adoption will require a positive opinion on the part of the Regulatory Committee.[15]

2. LEVEL OF AMBITION: A CROSS-COUNTRY COMPARISON

The Directive states that Member States are to adopt and aim to achieve the ESD-target for the ninth year of application of the Directive and establish, in the first NEEAP, an

---

13 Lithuania's revised NEEAP was adopted by the Lithuanian Government on 4 December, 2008, and received by the relevant Commission service on 3 February, 2009.

14 A provisional template was developed by the EMEEES project, co-funded by the Intelligent Energy-Europe Programme. However, the template was only made available to Member States 1 ½ month prior to the NEEAP submission deadline. Some Member States have nevertheless used it.

15 'Energy Services Formation' of the Energy Demand Management Committee

intermediate national indicative savings target for the third year of application of the Directive. The target calculation methodology is set in Annex I of the Directive.

2.1. National indicative energy saving targets

Almost all Member States have introduced an ESD-target of 9% for 2016 and calculated it in line with the methodology outlined in Annex I. Some Member States have committed to a national indicative target that exceeds the 9% in 2016. Italy has adopted a 9.6% target, Cyprus has introduced a 10% target[16], Lithuania has set an 11% target, and Romania has established a 13.5% target[17]. Some Member States expect to exceed the 9% target with savings from measures included in the NEEAPs, but do not explicitly commit to a higher target. Ireland indicates expected savings that equal 12.5% in 2016 and Luxembourg specifies expected savings that amount to 10.4% in 2016. The Netherlands indicates high and low estimates for expected savings for 2016, which equal 9.4 and 14.7% in 2016, respectively. The UK expects savings to equal 18% in 2016. While these statements of ambition are welcome, it is to be noted that the lack of formal commitment may not convey the right signal to market actors about the actual political will to act on energy efficiency.

Almost all Member States set intermediate national indicative energy saving targets for 2010 with targets ranging between 1.5% and 9%. Austria, the Czech Republic, Latvia, Lithuania, the Netherlands and Poland have set intermediate targets at or below 2%. Bulgaria, Cyprus, Finland[18], Italy, Luxembourg, Malta and the Slovak Republic have set intermediate targets at 3%, while Slovenia has set an intermediate target at 2.5% and Greece one at 2.8%. Ireland and Romania have set their intermediate targets at 4.5%, while Sweden has set its target at 6.5%. The most ambitious and clearly committed intermediate target is the one set by the UK, which equals 9% in 2010. The NEEAPs of Germany and Hungary include contradicting statements about the size of the intermediate target. The NEEAPs of Denmark, Estonia, Portugal, Spain, as well as the EEAPs of the federal government of Belgium and the Walloon and Brussels-Capital regions contain no intermediate targets.

A number of Member States indicate that the NEEAPs form part of their strategy to reach the 20% reduction in primary energy demand by 2020, among these are Austria, Ireland and Sweden, while Estonia annexes a list of actions relevant in the context of the Commission's Action Plan for Energy Efficiency and includes a measure on the support of the implementation of the Action Plan. In its NEEAP, the UK includes saving estimates for all measures until 2020.

2.2. Difficulties with savings targets and periods covered

A few Member States have had some difficulties with certain provisions in setting national indicative savings targets. More attention should be paid in particular to the calculation methodology set out in Annex I and to the 2008-2016 timeframe of the Directive.

Denmark introduces an annual target of 7.5 PJ of final energy savings for the period 2006-2013, which would equal a reduction in final energy demand of approximately 1.15% per

---

16 Saving estimates equal double the adopted 10% target and savings have not been estimated for all measures.

17 Portugal, Spain and probably Denmark introduce targets higher than 9%, but fail to comply with some other provisions for the NEEAP: see next section.

18 The expected savings from the Finish NEEAP exceed the intermediate target.

year. While this appears to be an ambitious goal, the Danish target – and the NEEAP as a whole – only covers the period 2006-2013. Similarly, the NEEAP of Estonia only covers the period 2007-2013. It introduces a national savings target for 2013 and excludes energy used for transport from the final inland energy consumption.

The NEEAP of Spain covers the period 2008-2012 and introduces 11% of final energy savings as a target for 2012. Similarly, the NEEAP of Portugal introduces a 9.8% target, but this target is to be reached in 2015, since the NEEAP only covers the period 2008-2015[19]. The NEEAP of France introduces a 9% target and an intermediate target, but only presents the absolute values of savings to be achieved, without specifying the reference consumption according to which the targets have been calculated. The NEEAP of Slovakia is not specific about the reference final energy consumption either. In the absence of indications about the reference consumption and/or reference period used for calculating the targets, it may be difficult to conclude if the consumption in undertakings covered by Directive 2003/87/EC and international transport has been excluded from the calculation of the target.

Belgium has not formally adopted a single target at the national level, but three regional targets for the main regions of Belgium have been adopted. These regional targets are expressed in different energy units (final energy in the case of Wallonia and the Flemish region; primary energy in the case of Brussels-Capital region)[20].

In the calculation of the overall savings target, Germany does not exclude the energy consumption in undertakings covered by Directive 2003/87/EC from the calculation of the target. Estonian NEEAP excludes energy consumption in the transport sector from the calculation of the target. However, calculating the target based on a higher reference consumption effectively results in a higher national energy savings target, especially if no implementing measures aimed at the Emission Trading Scheme undertakings exist[21]. It should also be acknowledged that at the time of writing the NEEAPs, there were ambiguities as to the definition of undertakings under Directive 2003/87/EC and that official historical data that would enable the exclusion of energy consumption from such undertakings may not exist or be difficult to obtain.

Some NEEAPs indicate that only the period of 2008-2010 is covered, even if a savings target for 2016 is included. This applies to the Plans of the federal government of Belgium and the Flemish region, and those of Bulgaria, Finland, Latvia, Romania and Slovakia, all of which indicate the period 2008-2010 on their title pages, while establishing an overall savings target[22]. Nevertheless, in most NEEAPs the indication of the period of 2008-2010 appears not to be a matter of misinterpretation of the role of the first NEEAP. The Plans of the federal government of Belgium and the Flemish region, the NEEAPs of Finland and Latvia indicate 2008-2010 on their title pages, but do provide measures that appear set to reach the 2016 target. In contrast, the NEEAPs of Bulgaria, Romania and Slovakia introduce 2016 targets, but the (large) majority of measures refer to the period 2008-2010. The Bulgarian Plan even indicates that this is a 3-year plan to reach the 3% target intermediate target set for 2010. As

---

19 It should be noted that the NEEAPs of Denmark, Portugal and Spain are based on existing (revised) national action plans. In the case of Denmark and Spain, the Plans were formally adopted prior to the adoption of Directive 2006/32/EC.

20 The expected savings from the Flemish EEAP equal 9.6% in 2016.

21 Some Member States introduce electricity saving measures in ETS undertakings thus only excluding fuel use in ETS installations.

22 Romania indicates coverage of the period 2007-2010 in its NEEAP.

the Plans are not always explicit about the entire nine-year period covered by the Directive, and do not always describe all the measures foreseen throughout this period, the assessment of the national strategies to achieve 2016 targets is difficult. On the other hand, having a strong focus on measures and programmes, put into action in the early years of implementation of the Directive, appears to be a more solid strategy than relying on measures to be introduced further into the future, provided, of course, that the measures introduced early on are maintained throughout the entire 2008-2016 period.

Table 1 below provides an overview of Member States with regard to the savings targets and period to be covered by the NEEAP.

2.3. Cross-country comparison of NEEAP measures

The following section provides an overview of the sectoral coverage of measures included in the NEEAPs, pointing at good practices, and identifying the share of various types of measures in each sector. It also addresses the availability of implementing provisions and indentifies areas where Member States appear to be lagging behind in terms of policies and measures to realise potentials.

It should be emphasized that the complete absence or sporadic indication of savings estimates in general or per measure in some Action Plans, combined with the limited degree of detail in most Plans about the assumptions underlying the savings estimates for the various measures, have been a major hurdle in the process of assessing the NEEAPs. Of the 27 NEEAPs[23], seven include saving estimates for all or almost all measures[24], ten include saving estimates for a subset of measures[25], two provide a star-rated ranking of the importance of individual measures[26] and two include sectoral-level savings estimates only[27]. Five NEEAPs do not include any savings estimates[28]. Finally, the EEAP of the Flemish region includes saving estimates for all measures, but the other three EEAPs submitted by Belgium do not provide such estimates. Of the NEEAPs that specify savings estimates, only a few present the assumptions made when estimating savings and explain the methods used to allow for a proper analysis of the measures: in this respect the NEEAPs of Finland, Italy, Luxembourg, Portugal and Slovenia set good examples for excellence in reporting. While providing less detail on underlying assumptions, the plans of Cyprus, Greece and Ireland also represent good reporting practices.

---

23 The four Plans submitted by the Federal Government and the three regions of Belgium are considered as one Action Plan.

24 Hungary, Ireland, Italy, Luxembourg, Portugal, Spain and the UK: the estimates of Luxembourg are only for 2016. In the case of Portugal, only a few information and behavioural measures do not have savings estimates.

25 Bulgaria, Cyprus, Germany, Greece, Finland, Latvia, Malta, Romania, Slovenia, and Sweden: in the case of Finland, savings estimates are available for measures that are projected to bring savings equal to 71% of the 2016 target. In the case of Greece, the large majority of measures have savings estimates.

26 Austria and Slovakia

27 The Netherlands and the Czech Republic

28 Denmark, Estonia, France, Lithuania, and Poland: France only provides estimated savings stemming from its white certificate scheme, but in terms of 'cumulative discounted kWh'

Table 1. National energy savings targets and period covered by NEEAPs

	National energy savings target in 2016	Intermediate energy savings target in 2010	Target calculation in line with Annex I	Period covered by NEEAP*	Other comments on targets
AT	**9%**	**2%**	**Y**	**2008-2016**	
BE	**No national target**	**No national target**	**No national target**	**2008-2010**	Federal EEAP - no targets. Flemish - 3% and 9% targets, expected savings 9.6% for 2016 and 4.9% for 2010. Walloon EEAP - 9% target for 2016. Brussels EEAP - 9% target for 2016. The targets and the measures of the federal and Flemish EEAPs cover 2008-2016.
BG	**9%**	**3%**	**Y**	**2008-2010**	While a target for 2016 is identified, the strategy is only drawn up for the period 2008-2010.
CY	**10%**	**3.25%**	**Y**	**2008-2016**	Savings estimates for 2016 are double the national energy savings target.
CZ	**9%**	**1.6%**	**Y**	**2008-2016**	
DK	**N**	**N**	**N**	**2006-2013**	Annual savings target of 7.5 PJ committed to between 2006-2013 (approx. 1.15% of final energy consumption annually)
EE	**9%** **(4.6% in 2013)**	**N**	**N**	**2007-2013**	Target calculation is not exactly in line with ESD definitions. The consumption by transport is not included. When the target is calculated based on all ESD energy consumption, it appears to be only ca. 7%
FI	**9%**	**3%**	**Y**	**2008-2010**	2010 savings estimates exceed the intermediate target. The target and the measures cover the period 2008-2016, although the title of the NEEAP indicates 2008-2010.
FR	**9%**	**Unclear** **(5 mtoe)**	**?**	**2008-2016**	Only absolute value of intermediate target indicated. Reference consumption not stated. The targets when expressed in absolute energy units are presented as approximations, e.g. approx. 5 mtoe.
DE	**9%**	**5.5 % (?)**	**N**	**2008-2016**	ETS consumption not excluded. Energy consumption data is provisional and the national indicative saving target is provisional.
GR	**9%**	**2.8%**	**Y**	**2008-2016**	
HU	**9%**	**Unclear**	**Y**	**2008-2016**	
IE	**9%**	**4.46%**	**Y**	**2008-2016**	Expected savings equal 12.5% in 2016. Target goes to 2020.
IT	**9.6%**	**3%**	**Y**	**2008-2016**	

Table 1. National energy savings targets and period covered by NEEAPs (continued)

	National energy savings target in 2016	Intermediate energy savings target in 2010	Target calculation in line with Annex I	Period covered by NEEAP*	Other comments on targets
LV	**9%**	**0.17%**	**Y**	**2008-2016**	Target and measures cover the period 2008-2016, although the title of the NEEAP indicates 2008-2010.
LT	**11%**	**1.5%**	**Y**	**2008-2016**	
LU	**9%**	**3%**	**Y**	**2008-2016**	Expected savings equal 10.4% in 2016.
MT	**9%**	**3%**	**Y**	**2008-2016**	
NL	**9%**	**2%**	**Y**	**2008-2016**	Expected savings equal 9.4 to 14.7 % (high and low estimates)
PL	**9%**	**2%**	**Y**	**2008-2016**	
PT	**9.8% (2015)**	**N**	**N**	**2008-2015**	
RO	**13.5%**	**4.5%**	**Y**	**2007-2010**	Most of the measures are until 2010: While a target for 2016 is identified, the strategy is only drawn for the period 2008-2010
SK	**9%**	**3%**	**?**	**2008-2010**	While a target for 2016 is identified, the strategy is only drawn for the period 2008-2010.
SI	**9%**	**2.5%**	**Y**	**2008-2016**	
ES	**11% (2012)**	**N**	**N**	**2008-2012**	It is unclear from the NEEAP whether the reference consumption is considered according to the Directive.
SE	**9%**	**6.5% (proposal)**	**Y**	**2008-2016**	Target calculation not fully in line with ESD definitions. Energy use in international (air and marine) transport is included.
UK	**9%**	**9%**	**Y**	**2008-2016**	Expected savings equal 18% in 2016.

While the lack of sufficient quantitative data about savings estimates has impeded the assessment of NEEAPs, a few Member States that provide no savings estimates indicate that the absence of a common framework for calculating savings[29] at the time of writing of the first NEEAPs made the provision of estimates difficult. Annex IV of the ESD already provides for a general framework for measurement and verification of energy savings.

[29] As set out in Article 15(2) of the Energy Services Directive

2.4. Sectoral coverage in NEEAPs

Energy savings and measures in residential buildings stand out in the majority of the NEEAPs[30]. With varying degrees of detail, almost all NEEAPs also include measures aimed at the tertiary sector, transport and industry in the scope of the ESD. Only a few NEEAPs have measures that address energy efficiency in agriculture.

The majority of Member States have put a particular emphasis on measures in *residential buildings*. A balanced coverage of both the thermal envelope and building equipment has been noted, for example in the NEEAPs of Cyprus, Finland, France, Ireland, Italy, Portugal and Slovenia. In their NEEAPs, Denmark, Latvia and Sweden place specific emphasis on heat savings. The NEEAPs of Germany, France, Ireland, Italy, Lithuania, the Netherlands and the UK feature many measures related to the refurbishment of existing buildings.

A few NEEAPs indicate a leading role for *transport* sector measures in contributing to the savings target. The NEEAPs of Bulgaria, Greece, Portugal, Spain, and Romania show the highest share of saving estimates from measures in the transport sector[31]. While the Austrian Action Plan provides no saving estimates, it includes a large number of transport measures too, including integration of these measures into its spatial planning. On the other hand the NEEAPs of Denmark, Estonia and Lithuania include no measures at all aimed at saving energy in the transport sector.

The NEEAP of Romania places a strong emphasis on transport energy savings, but these are primarily related to bio-fuel promotion, which is a fuel switching measure. Fuel-switching in transport fall outside the scope of the Directive and savings from such measures cannot be credited toward the target. The Bulgarian NEEAP provides a sectoral allocation of its intermediate target with the highest share of savings estimated from the transport sector. However, the transport measures Bulgaria introduces - audits in municipal and state transport companies, speed limits, taxes, and mandatory technical checks – seem to fall short of this level of ambition.

Three Member States, Hungary, Malta and the Slovak Republic, place a strong focus on energy efficiency in *industry,* and expect the highest share of savings to come from industry measures. In the case of Hungary, a number of measures in the industrial sector are entirely or partially outside the scope of the Directive, which may in fact compromise the attainment of the target given the importance of contributions of savings from measures that our outside the scope of the Directive. Similarly, the Portuguese NEEAP outlines two comprehensive programmes in industry, both of which cover a number of industrial branches that fall under the Emission Trading System. Malta introduces a measure in government-owned industry, namely the Water Services Corporation and Malta Shipyards, as well as in SMEs.

Measures to save energy in *agriculture* are absent in most Action Plans. Exceptions are the Dutch and Spanish NEEAPs which present promising measures in agriculture. A long list of

---

30 The expected amount of energy savings per sector has been used. In the absence of savings estimates, where possible the number of measures in each sector has been used as a proxy to state which is the 'leading' sector in each NEEAP.

31 In the Bulgarian NEEAP this applies to the intermediate target. In the Greek NEEAP, much of the energy savings in buildings are accounted for by cross-sectoral measures. Therefore, while the NEEAP reports the highest expected savings in the transport sector, it is possible that the tertiary and/or residential sectors can be expected to deliver the same or more savings in 2016. However, it is not possible to assess this based on the data provided in the Greek NEEAP.

new measures in agriculture can be found in Bulgaria's NEEEAP, but it includes virtually no implementation details concerning these making it difficult to assess their potential impacts.

Finally, Member States have occasionally introduced measures that fall outside the scope of the Directive. Most commonly these include fuel switching and energy efficiency improvements in power generation, including large CHP, central biomass plants, reductions in network losses, bio-fuels, measures in international transport, aimed at aviation and shipping, and measures that have some impact on ETS installations[32].

3. GOOD PRACTICES BY END-USE SECTOR

The first NEEAPs present many good practices in all end-use sectors and related to various policy tools. In the following sections, good practices as well as weaknesses and gaps are identified and discussed.

3.1. Good practices in buildings

Many NEEAPs include promising regulatory, financial and information tools and initiatives for refurbishment of *existing buildings*. Austria and Denmark, for example, requires stricter provisions than those of Directive 2002/91/EC on energy performance of buildings (EPBD). Denmark wants to limit the validity of energy performance certificates of buildings to 5 years instead of up to 10 years, as provided for by the EPBD. Austria introduces renovation requirements irrespective of the 1,000 m^2 threshold set by the EPBD currently in force, which means it is in line with the provision of the proposed recast of the EPBD[33]. For renovation of buildings below 1,000 m^2 and for minor renovations, France is adopting a modular approach, by equipment, for components demonstrating minimum energy performance. Denmark, France and Sweden indicate a strong role for building certification by mandating concrete proposals for cost effective savings measures to be put forward as part of the certification process and/or include financing proposals on energy labels or making certification a precondition for ownership of buildings[34].

France has a programme for modernising buildings and cities which aims for office buildings in both the private and public sectors - and public facilities to comply with low energy consumption or positive energy standards from 2010 onwards. Portugal sets minimum quotas by efficiency classes in new buildings.

Long-term, low-interest loans for refurbishing existing buildings have been in place in Germany for a number of years: Germany will now expand its CO_2 Building Retrofit Programme with the goal of doubling its annual rate of thermal retrofit of buildings to 2.6%

---

32 Fuel substitution (Belgian Federal Government); renewable electricity quotas and green certificates, as well as power generation (Walloon region); a technical standard for sites that generate, transmit and distribute heat (Bulgaria); energy production and transfer (Estonia); fuel switching to RES, bio-fuel taxation and biogas (Finland); parts of some measures expected to cover ETS industry (Hungary and Portugal); promotion of the integration of natural gas and LPG (Greece); network losses (Ireland and Poland); power generation losses and grid-connected renewables (Ireland); raising fuel prices (Luxembourg); biofuels (Romania); energy conversion and distribution in industry (Slovak Republic); international transport (Spain and Sweden); the UK Emission Trading System (the UK).

33 Commission proposal for a Directive on the energy performance of buildings, COM(2008) 780 final, 13.11.2008

34 Sweden mandates building certification for all multiple-unit buildings, not only when buildings are constructed, sold or rented.

by 2016. In addition, Germany indicates that the introduction of building certificates is to be accompanied by an information campaign. Austria has a similar buildings programme targeting both the private and public sector. The Greek Action Plan puts forward promotion of voluntary agreements for energy upgrading interventions as one element in its strategy aimed at commercial buildings.

Italy provides numerous large tax incentives for building refurbishment, including replacement of building equipment[35], and intends to encourage and promote the involvement of energy services companies (ESCOs) in the residential sector. Portugal indicates a progressive alignment of taxation with energy classes of buildings. Luxembourg and Finland demonstrate well integrated subsidy schemes, whereby thermal envelope refurbishment is integrated with building equipment measures. Austria awards additional subsidy points in its residential building subsidy scheme for thermal insulation and renewable energy. Slovenia offers financial incentives for energy efficient renovation and for energy-efficient heating systems. In the Netherlands a covenant with housing corporations, that own about a third of all buildings in the Netherlands, is projected to save 20% on energy use in existing dwellings before 2018. The UK and France place a strong emphasis on existing buildings, primarily via supplier savings obligations. Sweden has ambitious plans for renovation of its existing multi-family dwellings with a proposal to renovate 60% of the existing stock.

Almost all new Member States introduce measures related to refurbishment of multi-storey residential buildings, mostly ones constructed with pre-fabricated panel technology. An ambitious target is declared by Lithuania. It intends to refurbish 70% of its pre-93 multi-unit residential buildings. No details are provided however as to how this target will be attained. Slovenia's residential energy audit programme aims to carry out 90,000 audits by 2016. Since 1998, Poland supports the improvement in energy efficiency of existing residential buildings and energy saving technology in house construction via its Thermo modernisation fund.

Some NEEAPs establish a link between energy efficiency support and social policy (e.g. the EEAPs of the Walloon and Brussels-Capital regions, the NEEAPs of Greece, Slovenia and the UK).

Many NEEAPs make reference to planned strengthening of building codes (*new buildings*) and some include provisions for moving towards passive or low-energy standards. The Austrian NEEAP includes standards for low-energy and passive houses, incentive programmes for passive houses and integration of passive heating and cooling systems in public sector buildings. Austria specifies a number of measures to promote and achieve low-energy and passive-house standards. For example, 50% of new buildings should meet the "klima-active" standard by 2010, and it intends to realise an increasing number of ultra-low energy and passive house standard demonstration projects through building contractor competitions for large-scale residential developments. After 2015, only large-scale residential development projects that meet the "klima-active" or passive-house standards will receive financial incentives. The Belgian EEAPs introduce various measures targeting passive houses, including tax deductions at federal level and subsidies in Wallonia and Brussels-Capital. Denmark has a progressive target and intends to achieve passive house standard in 2015 for all new buildings and already has two energy performance classes in its 2006 building code for low-energy buildings, where the requirement is for buildings to use 25 and 50% less energy respectively than the 2006 building code requirement.

[35] Income tax deduction corresponding to up to 55% of the investment cost

Since 2005 low-interest, long-term loans for passive houses have been available to end-users in Germany. Ireland foresees a revision of it building regulations in 2010 requiring a further 20% efficiency gain for new dwellings beyond the requirements of the 2008 regulations. This strengthening is equivalent to a 60% improvement on current building regulations. The building code improvement is supported by the House of Tomorrow Programme, which offers support to developers to build housing with an energy performance standard of at least 60% above what is currently required. France announces the strengthening of the energy performance requirement of its codes for new buildings by 40% by 2020 and a ban on single glazing. France also indicates its intention to build to a new energy efficient housing standard in 2010, to a green buildings standard in 2012 and achieve passive or positive-energy buildings in 2020. The Dutch NEEAP indicates that the building code will continue to be tightened and that the energy performance requirement should decrease by 50 percent compared to its 2007 level by 2015, reaching passive house standard. Luxembourg will also progressively strengthen its buildings codes and provide subsidies for low-energy and passive houses. In the UK NEEAP, it is announced that England and Wales aim for zero-carbon new residential buildings by 2016. An inspirational target is declared for Wales of all new buildings to be built to a zero-carbon standard from 2011. Slovenia has a measure that integrates financial incentives and promotion for low-energy and passive residential buildings.

The Slovak NEEAP briefly indicates a short-term programme starting in 2009 for support of low-energy passive houses via grants, but provides no further details. The NEEAP of Estonia also indicates that it intends to develop the concept of low-energy houses, without providing further specifications.

Tables 2 and 3 below provide an overview of good practices in the building sector, for existing and new buildings respectively. The comprehensive strategies in buildings listed in first column encompass both strategies and/or grant schemes that comprise of measures covering both the thermal envelope and building equipment.

Table 2. Good practices existing buildings

EXISTING BUILDINGS						
	Comprehensive strategies in buildings	Going beyond EPBD	Tax incentives for building refurbishment	Soft loans for building refurbishment	Integrated grant schemes*	Other measures
AT	X	X[1]	X		X	
BE			X (F)	X (F)		X[7] (W and BXL), X[8] (all)
BG						X[6, 8]
CY	X				X	
CZ				X (?)		X[6,8]
DK		X[1,2,3]				
EE						X[8]
FI	X		X		X	X[8]
FR	X	X[1,3]	X	X		X[5], X[8] (?)
DE				X		X[7, 8]
GR	X		X	X		X[4, 8]
HU						X[6, 8]
IE	X					
IT	X		X			X[5]
LV						X[6, 8]

Table 2. Good practices existing buildings (continued)

Legend:

EXISTING BUILDINGS						
	Comprehensive strategies in buildings*	Going beyond EPBD	Tax incentives for building refurbishment	Soft loans for building refurbishment	Integrated grant schemes*	Other measures
LT						X[6, 7, 8]
LU					X	
MT						X[8]
NL			X			X[4]
PL					X	X[6, 8]
PT	X		X	X		X[8]
RO			X			X[6, 8]
SK				X		X[8]
SI	X			X	X	X[7, 8]
ES	X		X		X (?)	X[8]
SE		X[3]				X[6]
UK	X		X	X		X[5]

(1) Mandatory minimum requirements for the overall energy efficiency in major renovation, irrespective of the usable area

(2) Shorter validity of energy performance certificates than allowed for in the EPBD

(3) Mandating cost-effective requirements in certificates.

(4) Voluntary agreements in the buildings sector

(5) Supplier obligations, buildings focus reported.

(6) Extensive building renovation programs (planned or implemented)

(7) Financial support for building renovation based on social grounds

(8) Energy audits

Table 3. Good practices in the building sector: new buildings

	Significant strengthening of building codes/passive or low-energy houses	Financial support for passive or low-energy houses			Significant strengthening of building codes/passive or low-energy houses	Financial support for passive or low-energy houses
AT	**X[1]**	**X**		**LV**		
BE	**X[1]**	**X**		**LT**		
BG				**LU**	**X[1]**	
CY				**MT**		
CZ				**NL**	**X[1]**	
DK	**X[1]**			**PL**		
EE	**X**			**PT**		
FI				**RO**		
FR	**X[1]**			**SK**		**X**
DE		**X**		**SI**		**X**
GR				**ES**		**X**
HU				**SE**	**X**	
IE	**X[1]**	**X**		**UK**	**X[1]**	
IT						

Legend:

1. Provisions for low-energy/passive houses

3.2. Good practices in appliances and lighting

Good practices with regard to **appliances** and **lighting** include the indication by France to ban incandescent light bulbs in 2010 and UK's aim to be the first Member State to phase out incandescent light bulbs for domestic use, where an efficient alternative exists, by 2011. Portugal also indicates phasing-out of incandescent lighting and substitution of 22.6 million incandescent lamps. Spain has a measure to exchange obsolete lighting systems with energy efficient ones; financial support is envisaged and public buildings should play an exemplary role in this respect.

Slovenia has an ambitious investment subsidy programme for household appliance replacement and CFL promotion. Germany and Portugal combine the financial support for household appliances with the return of old inefficient ones to get them off the market. Ireland has introduced a levy on incandescent lamps. Existing supplier obligations and white certificate schemes are also expected to trigger the deployment of large numbers of CFLs. By setting up an incentive programme for enterprises involving a system of accelerated depreciation for the acquisition of high efficiency equipment, Portugal supports accelerated depreciation of office equipment, for example through substitution of desktop computers for portable computers.

Table 4 below provides an overview of good practices regarding appliances, heating, cooling and lighting.

Table 4. Good practices: appliances, heating and cooling, lighting

APPLIANCES, HEATING AND COOLING, LIGHTING				
	Phase-out of incandescent light bulbs (before EuP), massive substitution (incandescent to CFL)	Subsidies for efficient appliances, heating and cooling and lighting	Other forms of financial support for appliances*	Other tools
AT		X	X	
BE		X (W)		
BG				
CY			X	
CZ				
DK				
EE				
FI				

Table 4. Good practices: appliances, heating and cooling, lighting (continued)

APPLIANCES, HEATING AND COOLING, LIGHTING				
	Phase-out of incandescent light bulbs (before EuP), and substitution (incandescent to CFL)	Subsidies for efficient appliances, heating and cooling and lighting	Other forms of financial support for appliances*	Other tools
FR	X			X[1]
DE		X	X	
GR				
HU		X		
IE	X			
IT			X	X[1, 2]
LV				
LT				
LU		X		
MT		X		
NL				
PL				
PT	X	X	X	
RO		X		
SK		X		
SI	X	X	X	
ES	X	X	X	
SE				
UK	X			X[1]

* These include soft loans and tax incentives, e.g. for efficient appliances

Legend: 1. Supplier obligations with focus on appliances, 2. Lighting system certification

3.3. Good practices in the transport sector

A large number of NEEAPs include technology improvement measures in the transport sector. After power generation, road transport is the second biggest source of greenhouse gas emissions in the Community. It contributes about one-fifth of the Community's total emissions of carbon dioxide (CO_2), the main greenhouse gas. Road transport is one of the few sectors where emissions are still rising rapidly, so at present it is undermining rather than helping the Community's efforts to tackle climate change. Passenger cars alone are responsible for around 12% of EU CO_2 emissions. Although there have been significant improvements over recent years in vehicle technology - particularly in **fuel efficiency**, which translates into lower CO_2 emissions – these have not been sufficient to neutralise the effect of increases in traffic and car size. CO_2 emissions from road transport rose by 26% between 1990 and 2004. This increase acted as a brake on the Community's progress in cutting overall emissions of greenhouse gases, which fell by just under 5% in the EU-25[36]. For this reason, the modest number of NEEAPs with a clear and consistent strategy for modal shifts towards more environmentally friendly and energy saving modes of transport has been disappointing. Next to technological measures for improved vehicle efficiency, **fiscal incentives** and subsidies to encourage fuel efficient or low-emission vehicles and shift to public transport are common types of measures in transport.

Some Member States present **comprehensive packages** of measures addressing energy efficient transport and mobility, including a set of complementary instruments (regulations, fiscal measures, education and information measures) targeting vehicle efficiency, modal split towards efficient forms of transportation, transport logistics and infrastructure, and behaviour.

France has a comprehensive programme on mobility and transport, which combines encouraging public transport use (especially railways), eco-taxes for trucks, eco-labelling and tax credits for efficient private cars, and clean vehicle development. Finland has introduced a traffic system planning measure combining efficiency of vehicles with behavioural action and modal splits. Slovenia has an ambitious public transport measure, including the objectives of returning to 1990 levels of public transport. As a supplement to public transport it would like to see 10% of commuters in the summer on bicycles. The latter is to be achieved through constructing cycle paths and support facilities and providing cyclists with a suitable level of safety. By providing links to the international cycling network, these measures are also expected to contribute to the development of tourism and thereby jobs. The Austrian NEEAP also features a number of promising transport measures, such as inter-modal transport initiatives, logistics, car-sharing and the establishment of car cooperatives, and measures on parking with the identified objective to shift travellers from individual to public transport. The NEEAP of Slovakia includes inter-modal transport initiatives too. The four EEAPs of Belgium all place a strong focus on behavioural change in transport to be achieved through information and awareness-raising activities. Malta has a set of complementary transport measures, including promotion of modal shift, improvement of public transport in combination with congestion fees, subsidy for electric/hybrid cars and information campaigns. The NEEAP of Portugal features a very comprehensive set of measures in the

[36] Questions and answers on the proposed regulation to reduce CO_2 emissions from cars, European Commission Memo/07/597, 19 December, 2007, http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/597

transport sector, including technical and fiscal measures, mobility planning and logistics, covering both passenger and freight transport and including strong measures to promote the use of public transport.

The UK NEEAP presents a well balanced strategy of mostly ongoing measures aimed at cleaner and more energy efficient transport, related to investment in public transport, behavioural programmes, an integrated package of technological improvements and taxation measures, along with a set of local transport policies. The UK and Ireland both ensure the involvement of local authorities in transport measures, primarily through the land-use planning system and numerous local initiatives.

Spain introduces a large number of transport initiatives, including integrated measures such as Urban Mobility and Transport Plans in Business and Activity Centres, whose implementation is assigned to the autonomous communities. Transport measures cover a variety of aspects, including modal shift, more efficient use of transport means and energy efficiency of vehicles, and make use of a number of regulatory, fiscal and information measures.

A number of NEEAPs include good integrated packages aimed at increasing the use of **public transport**, consisting of support measures to modernise public transport infrastructures and vehicle fleets, improved logistics, education and awareness-raising campaigns, and enhanced spatial and town planning aimed at reduced energy use. The NEEAPs of Austria, Finland, France, Greece, Ireland, Malta, Portugal, Slovenia, Spain and the UK all present integrated packages aimed at increased public transportation use. Latvia, Romania and Slovakia introduce specific but fragmented measures, mostly investment programmes for improvements in urban transport infrastructure or fleet replacement. Hungary introduces park-and-ride facilities. The NEEAPs of Bulgaria, the Czech Republic, Denmark, Estonia, Italy, Lithuania, Luxembourg, the Netherlands and Poland introduce no or extremely vaguely described measures targeting public transport. It is rather alarming that many of the EU-12 introduce no clear measures related to public transport. Historically the shares of public passenger transport have been higher in these countries, but the share of public transport has been decreasing over recent years with growing car ownership and deteriorating public transport systems. The NEEAPs thus could have been an opportunity to target public transport shares.

Eco-driving measures, in various forms, are included in the NEEAPs of Austria, Finland, Germany, Greece, Ireland, the Netherlands, Portugal, Slovakia, Slovenia, Spain, Sweden, and the UK. They range from information campaigns on eco-driving principles and their benefits and tools that enable you to test how energy efficient your driving habits are to introducing eco driving as part of the driving test. **Tele commuting** and a range of initiatives for **car sharing,** form part of the NEEAPs of Austria, Malta, Spain, and the EEAP of the Walloon region. **Spatial planning** considerations for achieving savings from transport are reported in the NEEAPs of Austria, Ireland, Sweden and the UK. **Mobility management** in the public and private sectors is included in the NEEAPs of Austria, Spain, Poland and Portugal. Support to encourage **cycling** and **pedestrians** is included in the NEEAPs of Austria, Finland, Germany, Slovenia, Spain and the UK. Portugal has a very comprehensive set of programmes aimed at modal shift in freight transport.

A number of Member States refer to infrastructure projects, which are expected to contribute to meeting the national saving targets. These include a number of large infrastructure projects in the Walloon region, urban public transport developments in Latvia (Riga subway system),

Romania (railway and metro system), Ireland (road transport infrastructure in Dublin) and Portugal (logistic platforms and cargo centres, metro and railway expansions).

The assessment shows that Member States seem to treat the car manufacturers' voluntary commitment to reducing CO_2 emissions from new cars sold in Europe[37] and the recently adopted regulation[38] on emission performance standards, which was at the proposal stage while the NEEAPs were being elaborated, differently. About one third of the NEEAPs mention both as measures – often as their biggest transport measure. This obviously has an impact on the comparability of NEEAPs in terms of their efforts in the transport sector.

Table 5 below gives an overview of good practices in transport.

Table 5. Good practices in transport

TRANSPORT										
	Comprehensive strategies in transport*	**Spatial planning provisions**	**Support for public transport**	**Mobility management**	**Eco-driving**	**Tele-commuting**	**Car-sharing**	**Modal shift**	**Tax incentives and disincentives: passenger vehicles**	**Tax incentives and disincentives: freight vehicles**
AT	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**		
BE						**X_W**	**X_W**	**X**	**X_{all}**	**X_{FI}**
BG										
CY									**X**	
CZ										
DK										
EE										
FI	**X**		**X**		**X**			**X**		
FR	**X**		**X**						X	X

37 A voluntary agreement between European Automobile Manufacturers Association (ACEA) and European Commission to limit carbon dioxide (CO_2) emission by passenger cars sold in Europe. It seeks to achieve an average of 140 g/km of CO_2 by 2008 for new cars. ACEA accounts for 86.4% of car sales in Europe; see Impact Assessment at: http://ec.europa.eu/environment/air/transport/co2/co2_home.htm.

38 Regulation of the European Parliament and of the Council setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO_2 emissions from light-duty vehicles COM(2007)0856 – C6-0022/2008 – 2007/0297(COD)

DE					**X**				**X**	**X**

Table 5. TRANSPORT (continued)

	Comprehensive strategies in transport*	Spatial planning provisions	Support for public transport	Mobility management	Eco-driving	Tele-commuting	Car-sharing	Modal shift	Tax incentives and disincentives: passenger vehicles	Tax incentives and disincentives: freight vehicles
GR	**X**		**X**	**X**	**X**				**X**	**X**
HU										**X**
IE	**X**	**X**	**X**		**X**			**X**	**X**	**X**
IT										
LV			**X**						**X**	
LT										
LU									**X**	**X**
MT			**X**	**X**		**X**		**X**	**X**	
NL					**X**				**X**	**X**
PL				**X**						
PT	**X**		**X**	**X**	**X**			**X**	**X**	**X**
RO			**X**							
SK			**X**		**X**			**X**	**X**	**X**
SI			**X**		**X**			X		
ES	**X**		**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
SE				**X**	**X**				**X**	**X**
UK	**X**		**X**		**X**				**X**	**X**

* Sets of complementing instruments (regulations, fiscal measures, information provisions) targeting vehicle efficiency, modal split towards efficient forms of transportation, transport logistics and infrastructure, and behaviour.

3.4. Good practices in industry

A number of NEEAPs introduce subsidised **energy audit** schemes in the industrial sector, including Bulgaria, the region of Flanders (audit covenant scheme), Finland, Germany (SMEs), Portugal (mandatory audits for large users) and Slovakia (SMEs). In the Czech Republic, mandatory audits combined with support for the preparation of projects that lead to energy services is an example of a well integrated initiative in the industrial sector. Mandatory energy audits are also featured in Portugal where they are related to a plan for rational use of energy where biannual implementation and progress reports are required. Measures with very short payback periods require mandatory implementation[39]. A penalty for non-compliance for each toe not avoided or repayment of the subsidy is also enforced. The progress reports must provide data relative to the targets on energy and carbon intensity.

Voluntary agreements (VAs) with industries are a key policy instrument used in Denmark, Finland, Greece, the Netherlands, Portugal, Slovenia, Sweden, and the UK. Both Finland and the Netherlands have long tradition in the use of VAs and have gradually been extending their coverage. In Finland VAs currently cover 60% of the total final energy use in the eight sectors where they are applied with the aim of achieving 90% coverage by 2011. The Danish "A-Club" is a form of VA. It brings together public and private organisations that commit to using energy efficiency criteria in procurement. The Portuguese NEEAP indicates that enterprises using less than 500 toes per annum may sign up for the voluntary Energy Consumption-Intensive Management System, a measure that targets horizontal technologies in the industrial sector. Hungary, Poland and Romania indicate their intention to also introduce VAs, but details about their plans are scarce.

Some Member States make use of **energy management measures**, energy management standards and energy reporting and benchmarking in industry (e.g. Ireland, Denmark, Greece and Hungary).

The UK combines **VAs and tax breaks** in its Climate Change Agreements (CCAs) introduced as part of the Climate Change Levy package. Similarly, Slovenia grants exemptions from its CO_2 tax to industrial installations that enter into Voluntary Agreements to reduce their total specific annual emissions. Portugal provides tax incentives and audit subsidies for industrial operators under VAs.

The UK has notified a so-called Carbon Reduction Commitment – a mandatory emission trading scheme for the large non-energy intensive sectors, covering both the private and the public sector. France has introduced an innovative system of state-issued carbon credits to encourage the reduction of greenhouse gas emissions, particularly through reducing the domestic use of fossil fuels. Any project in the non-ETS sectors that saves carbon compared with a reference baseline may benefit from credit system.

Table 6 below shows good practices in the industry sector.

[39] Measures with a payback of less than 5 years (for enterprises with consumption above 1,000 toe/annum) and less than 3 years (for other enterprises) must be realised.

Table 6. Good practices in industry

INDUSTRY				
	Voluntary agreements	Energy audit schemes	Energy management, energy standards, energy reporting	Other measures
AT				
BE	X (W and F)	X (F)		
BG		X		
CY				
CZ		X		
DK	X		X	
EE				
FI	X	X		
FR				X[1]
DE		X		
GR	X		X	
HU	X*		X	
IE			X	
IT				
LV		X		
LT				
LU	X (?)			
MT		X		
NL	X			
PL	X*	X		

INDUSTRY				
	Voluntary agreements	Energy audit schemes	Energy management, energy standards, energy reporting	Other measures
PT	X	X		X[2]
RO	X*	X	X	
SK		X	X	
SI	X	X		X[2]
ES	X	X		
SE	X			X[2]
UK	X			X[1, 2]

* Intentions to introduce VAs

Legend:

1. Domestic carbon trading
2. Tax incentives in industry

3.5. Good practices in agriculture

A few Member States report interesting measures and packages in the agricultural sector. The Netherlands plans an internal **emission trading scheme** for its greenhouse sector, while Latvia has two measures for **modernisation** of agricultural machinery and equipment, as well as for agricultural production buildings and purchase of necessary building materials using the SAPARD program and rural development programmes. Spain has a number of measures targeting agriculture, including fisheries, irrigation, machinery, and **environmentally friendly agricultural practices**. Sweden also has an integrated initiative in agriculture, which targets energy use in **agricultural processes, agricultural transport, cultivation customs and machinery**.

3.6. Good practices: horizontal measures

The NEEAPs present a large number of promising horizontal measures. Good practices include white certificate schemes, energy performance contracting and other innovative financing schemes, metering and billing provisions, and the involvement of energy market actors in delivering energy efficiency. Other measures that can be implemented either on a sectoral or a cross-sectoral level – such as subsidies, fiscal measures, voluntary agreements and energy audits – have been discussed under the particular subsections above.

The NEEAPs of Austria, Cyprus, Denmark, Finland, Germany, Greece, Ireland, Slovenia, the Netherlands and the UK specify advanced **metering** and/or informative **billing** initiatives. In their NEEAPs, Bulgaria, Estonia, Lithuania and Slovakia refer to metering of individual energy consumption, mostly applied to district heating.

A number of Member States intend to introduce or have already introduced measures intended to foster energy performance contracting and energy service companies (**ESCOs**). Some specifically refer to the promotion of contracting in the public sector. Austria, Denmark, Germany, Greece, Hungary, Ireland, Portugal, Sweden, Slovenia, the Flemish region and the Federal government of Belgium all make reference to the use of ESCOs in the public sector, though with various degrees of detail and apparent levels of commitment. The activities of Austria, Germany, Portugal, Slovenia and the Federal government of Belgium for promoting contracting and ESCOs in the public sector appear particularly strong. These are mostly related to aggregating public buildings in contracting pools and/or using model contracts to increase acceptance and enhance trust in the measure (for example, Austria, Germany, Ireland, Romania, and Slovenia), establishing a governmental agency to be in charge of contracting in federal buildings (Fedesco in Belgium) and/or mandating efficiency contracts for state establishments (Portugal).

Apart from these 'strong' measures supporting ESCOs, there are 'softer' ones such as support for the preparation of projects for the provision of energy services (Czech Republic), determining the legal foundations for energy service provision and improving the regulatory framework, along with promotion of the ESCO concept and advice to end-users (Estonia, Romania, Hungary, Slovenia, Finland, Germany, Sweden). Finland commits to increased investment subsidies to promote ESCO operation. Unfortunately many of the ESCO-related measures contain little detail about the actions to be undertaken. The Slovak NEEAP has a vague indication about support for ESCO development. The NEEAPs of Hungary and Poland also have vague descriptions of their ESCO-related measures.

Some Member States have introduced **obligations on energy suppliers** and distributors to achieve energy savings. The longest standing such obligation can be found in the UK. It will be in place at least until 2020. The obligation on suppliers in the Flemish region of Belgium requires actions to always include a financial contribution and awareness–raising activities. Other countries with supplier obligations include France and Italy, where these are coupled with **white certificates** as part of suppliers' obligations. In its NEEAP Poland has declared its intention to introduce a white certificate scheme, while Bulgaria and Romania intend to study this instrument. Denmark indicates that electricity, natural gas, district-heating and oil grid and distribution companies must deliver a considerable part of the increased savings. In this context, they are expected to enter into agreements with the construction sector on package- and standard solutions.

Finland indicates the involvement of energy suppliers in the provision of information and advice, metering, billing, training and auditing. The Czech Republic lists a duty for utilities to offer energy services and information to end users, but provides no further details.

A number of promising **financing tools** have been identified across the NEEAPs. These include innovative schemes, such as revolving funds in a number of countries, Fedesco in federal buildings in Belgium, along with the alternative financing scheme for new school infrastructure in the Flemish region, and carbon crediting for domestic energy reduction

projects in France. Portugal presents the 'Efficiency Cheque' to be awarded to domestic end-users who, in two consecutive years, show effective reductions in electricity consumption[40].

'Traditional' financial tools range from grants and soft loans to tax rebates and other allowances. For example, the Dutch Energy Investment Deduction allows additional deductions on taxable profit after investments in energy efficiency. The Enhanced Capital Allowances scheme in the UK provides businesses with a first year 100% tax allowance on designated energy efficient equipment investments. Italy, France and Portugal also provide tax allowances for a wide range of equipment. The NEEAPs of Bulgaria and Romania include measures that build on existing credit lines for energy efficiency projects from international financing institutions (IFIs). Almost all Member States[41] plan direct investment for a broad range of energy efficiency improvements under Community **Cohesion Policy**. Most new Member States, along with Portugal and Greece, refer to such measures in their NEEAPs Member States are encouraged to ensure that all investments falling under the scope of the Directive and backed by support from the **Cohesion Policy** Funds are fully integrated and detailed in the NEEAPs. In many cases this will allow for more complete reporting of actions undertaken also at regional and local levels. Table 7 below provides an overview of good practices for horizontal measures.

[40] The value of the cheque equals 10% of the preceding year's annual electricity costs if a 10% reduction in electricity use is demonstrated over the subsequent two-year period, and 20% of the preceding year's annual electricity costs if a 20% reduction is achieved over the subsequent two-year period.

[41] Except Denmark and Cyprus

Table 7. Good practices: horizontal measures

	Energy supplier savings obligations, white certificate schemes	Promotion of energy services, ESCOs, TPF	Metering and billing	Financing tools			
				Grants	Soft loans	Tax incentives	Cohesion Policy funds
AT	X (F)	X[1, 2]	X	X		X	
BE		X[1] (F/Fl), X[3](F)		X (all)	X	X (fed)	
BG			X[5]	X	X		X (?)
CY			X	X		X	
CZ		X[4]		X (?)			
DK	X	X[1]	X				
EE		X[4]	X[5]				X
FI		X [1, 4]	X	X	X	X	
FR	X				X	X	
DE		X[1, 2, 4]	X	X	X	X	
GR		X[1]	X	X	X	X	X
HU		X[1, 4]		X	X		X
IE		X[1, 2]	X	X		X	
IT	X	X[4]				X	
LV							X
LT			X[5]	X			
LU				X		X	
MT			X**	X			

	Energy supplier savings obligations, white certificate schemes	Promotion of energy services, ESCOs, TPF	Metering and billing	Financing tools			
				Grants	Soft loans	Tax incentives	Cohesion Policy funds
PL	**X***	**X[4]**		**X**	**X**		**X**
PT		**X[1]**		**X**	**X**	**X**	**X**
RO		**X[2, 4]**		**X**		**X**	**X**
SK		**X[4]**	**X[5]**	**X**	**X**	**X**	**X**
SI		**X[1, 2, 4]**	**X**	**X**	**X**	**X**	**X**
ES				**X (?)**		**X**	**X**
SE		**X[1, 4]**		**X**		**X**	
UK	**X**		**X**	**X**	**X**	**X**	

Table 7. Good practices: horizontal measures (continued)

* planned
** feasibility study

Legend:

1. EPC, esp. in the public sector (PT mandates EPC in state establishments, FI includes ESCO provisions in the new energy-efficiency agreements and in the absence of other funding for implementing cost-effective measures)
2. Model energy performance contracts/contracting pools
3. Other measures (State agency in charge of contracting in governmental buildings in BE, ESCOs in residential in IT)
4. Soft promotional measures for ESCOs.
5. Individual metering

3.7. Further observations on the measures in the NEEAPs

The NEEAPs appear fairly well balanced when it comes to the share of efforts related to compliance with Community legislation and of national measures. While many NEEAPs include more national measures than measures related to implementing Community legislation, national measures often implicitly support the implementation of Community legislation in the national contexts even if not explicitly called for in Community legislation. The implementation of the ESD may be seen as consolidating the implementation of existing Community legislation at national level.

Measures related to the implementation of the EPBD for example play a prominent role in the majority of NEEAPs. Some Member States have chosen to go beyond several of the EPBD provisions, most notably the 1,000 m^2 threshold for major renovations. Others provide financial incentives only for projects that go beyond the minimum energy performance requirements set in national building codes (e.g. requesting that passive and low-energy standards are applied in the case of new buildings). Some NEEAPs take account of measures related to the car manufacturers' agreement and/or on minimum energy performance requirements for appliances and equipment provided for by the Ecodesign Directive, while others do not. While Member States are free to choose whether to include measures provided for by Community legislation, this differentiated treatment in the NEEAPs has implications for the degree of effort Member States have to put into additional measures. Some NEEAPs also include explanatory notes related to the transposition and implementation of other requirements of the ESD, for example related to energy distributors and individual metering.

Ongoing measures that qualify as 'early action'[42] under the ESD dominate the majority of NEEAPs. Some Member States indicate stricter interpretation of early action – for example the UK which only takes into consideration savings in 2016 from measures implemented since 2000, while the Netherlands, Slovenia and Sweden indicate that savings from early actions are not included[43]. Some Member States explicitly indicate the share of savings that are expected from early action. For example, Finland specifies that 71% of its expected savings in 2016 would stem from "actions currently known", while Germany indicates that 45% of its estimated savings will come from early action.

In contrast the NEEAPs of Estonia, Greece, Latvia and Poland rely extensively on savings from new measures to reach their targets. The ability of Estonia and Poland to deliver in accordance with their strategies could not be assessed given the brief descriptions of measures and the total absence of saving estimates. The Hungarian NEEAP introduces many small-scale, new measures. While the NEEAP of Germany relies on savings from early actions for meeting the intermediate target, its strategy will be reinforced by new measures to meet the 2016 target. The NEEAPs of Cyprus and Malta both include numerous early actions introduced as recently as 2005-2007. The majority of measures in the Greek NEEAP are new; although measures that qualify as ‘early actions’ also form part of the Greek strategy.

---

42 Energy efficiency improvement measures implemented by Member States not earlier than 1995 (in limited cases not before 1991) that still continue to deliver measurable energy savings in 2016, Directive 2006/32/EC, Annex I .

43 It is inferred that there might have been a misinterpretation of the eligibility of savings from early action in the case of the Netherlands, Sweden and Slovenia, which would invalidate these claims. The Dutch NEEAP includes early action. The statement may reflect the fact that only savings from early action that can be measured and verified in 2016 have been accounted for, which is the right interpretation. However, this understanding would invalidate the statement made about non-inclusion of early action. Sweden lists early action despite this statement, but probably only for information purposes, though this is unclear. Furthermore, some of the proposed measures in the Swedish NEEAP are in fact early actions and there are no savings estimates for new measures. Like Sweden, Slovenia claims that it excludes savings from early actions for now with the condition that these might be considered if there are indications that new measures seem unable to deliver the necessary level of savings in 2016. Nevertheless, about half of the savings calculated in the Slovenian NEEAP come from measures that were put in place before 2008. All these demonstrate possible misinterpretation of how to deal with savings from early action in these three NEEAPs.

Overall, NEEAPs introduce a balanced portfolio of policies, instruments and programmes: combining regulation, voluntary agreements, market-based instruments, financing and fiscal tools, and information measures.

Most NEEAPs identify the administrative body/bodies responsible for implementing either the entire NEEAPs or on a measure-by-measure basis. For example, the NEEAPs of Denmark and Slovakia demonstrate a strong institutional set-up and Bulgaria's Plan states that the institution that will be charged with controlling and monitoring the compliance with the Directive will be strengthened. Finland has established an ESD Implementation Group, and France has set up an Environmental Round Table. The round table brings together state and regional authorities and civil society representatives to define and elaborate a roadmap for sustainable development. Sweden has set up a Commission of Inquiry to coordinate the work and develop proposals. The NEEAPs of Estonia, Ireland, Latvia, Netherlands, Portugal, Slovenia, Spain, and Sweden point at different institutions as responsible for implementing different measures. The NEEAP of the UK states that the delivery of policies and measures in the NEEAP will be reported annually to the Parliament, but gives no concrete information on implementing bodies. Some NEEAPs do not identify implementing bodies or provide a vague indication of supervisory bodies (Austria, Cyprus, Germany, Hungary, Italy, Luxembourg, Poland, Sweden, and the UK).

Most NEEAPs specify legislative acts, on which early measures are based. However, occasionally there is only an indication of the legal act, without any clarification as to the content of the relevant provisions (e.g. the NEEAPs of the Czech Republic, Slovakia, Bulgaria and Lithuania). In other cases Member States have indicated studies or planning processes as measures (e.g. Cyprus and Estonia).

A few NEEAPs contain detailed indications of budgetary and other financial requirements needed to implement the adopted measures. Estonia indicates budgetary requirements by measure, breaking these down into state budget, municipal budget, resources from the Cohesion Policy Funds and estimates for the private investments that will be required. Slovakia too shows very detailed financial figures, also presented by source, including both the public funds and private investments required for the implementation of the NEEAP, for the period 2008-2010. Spain provides an overview of public spending and overall investment estimates, and Latvia gives precise budgetary provisions and sources of financing. Portugal indicates precise budgetary requirements and specifies the financing sources.

The NEEAP of Germany contains a statement that all measures that will require financial expenditures by public authorities will receive it. The NEEAP of Italy, which relies strongly on tax incentives, indicates financial backup in its 2007 Finance Act and the intention stated in the 2008-2011 Economic and Financial Programming document to ensure continuity of fiscal measures for energy efficiency measures in buildings and equipment.

Some Member States include concrete performance indicators, for example the NEEAPs of Cyprus, Estonia and Italy. The NEEAPs of Spain and the UK include CO_2 emission mitigation estimates for all measures, while the NEEAPs of Bulgaria, Malta and Romania contain CO_2 estimates for some measures. The majority of Member States include extensive background analysis on sectoral energy consumption and some also include analysis of barriers to energy efficiency.

4. THE EXAMPLARY ROLE OF THE PUBLIC SECTOR

The large majority of NEEAPs have introduced a range of measures to fulfil the Directive's provisions on the exemplary role of the public sector. The NEEAPs of Austria, Cyprus, Denmark, Finland, France, Germany, Ireland, Luxembourg, Malta, Portugal, the Netherlands and the UK all present good public sector measures in an attempt to comply with the exemplary role provisions. On the other hand the NEEAPs of the Czech Republic, Italy, Slovakia and Romania have no or very weak provisions for the public sector. The Lithuanian NEEAP only states that two measures from Annex VI will be implemented, without giving further details, while the Romanian NEEAP points to the future selection of two measures from the shortlist of three measures of Annex VI. Spain in its NEEAP indicates that the implementation of two measures required from Annex VI is to take place at decentralized level. Latvia points to two measures from Annex VI, but does not provide any implementation details. While paraphrasing the provisions of the Directive[44], outlining the six possible measures, of which two must be adopted/implemented, the Swedish NEEAP provides estimates for public sector savings potentials, mentions that at least two of the six must be chosen, and simply proposes a range of measures that could be adopted to meet the public sector provisions without indicating which ones will actually be adopted.

Public procurement is a key element in harnessing the power of the public purse to achieve cost effective energy savings, and the large majority of NEEAPs contain public procurement measures. Among the strongest provisions are those indicated by Denmark to implement energy efficient procurement in its governmental institutions, by Germany to establish technical guidelines to be used when federal government is making procurement decisions, and by Portugal to have 50% of public tenders be carried out using environmental criteria by 2010. Slovenia intends to gradually establish energy efficiency procurement criteria for products and vehicles, including public transport vehicles, and during construction, reconstruction, purchase and renting of buildings. In Sweden, local authorities will be involved in agreements concerning energy efficiency and be expected to lay down requirements for the purchase of energy efficient equipment and vehicles. The NEEAP of Latvia indicates upcoming mandatory inclusion of energy efficiency criteria in the procurement of equipment.

Some Member States have adopted concrete procurement targets, fund allocations for green procurement, training for public servants and support in tendering. The Netherlands has adopted a target for 100% of central government and at least 50% of regional and local government procurement to take sustainability criteria into account by 2010. In addition, the Netherlands declares its intention to have all central government buildings be climate neutral in 2012; 19 local governments have ambitious plans to become climate neutral cities between 2015-2020 - apart from addressing energy issues in its own building stock, mobility and operational management, it will stimulate energy efficiency and renewables in households and commercial companies. Portugal aims for 50% of its public tenders to be based on environmental criteria in the context of measures for energy efficiency and decentralised production of energy by 2010. The French NEEAP refers to ambitious targets in its National Action Plan for Sustainable Public Procurement. When renewing its fleet the state and certain public sector entities should acquire or use a minimum proportion of 20% electric, NGV or LPG vehicles under 3.5 tonnes, if they have a fleet of more than 20 vehicles. Ireland allocates

[44] Article 5

10 billion Euro per year for green procurement. Ireland and Estonia mention training for public servants and support to improve tendering in their NEEAPs.

Many Member States, among them Cyprus, France, Malta, Portugal, Romania and the UK indicate that green public policy and/or action plans have been or will be established. Some Member States state that development of energy efficiency criteria and/or guidelines for green public procurement is underway or planned (Belgium, Estonia, Finland, France, Germany, Hungary, Ireland, Luxembourg, Malta, and the Netherlands). However, explicit mention of whether guidelines and procurement action plans will become an obligation on public authorities is not made. Thus it is not clear whether energy efficiency criteria and lifecycle costing in procurement will be required, or if public authorities will be informed about the benefits and simply be encouraged to take advantage of them.

A number of NEEAPs contain provisions related to the purchase, replacement and retrofitting of **equipment** and **vehicles**[45]**.** Portugal indicates that from 2010 vehicles are to be acquired subject to existing short lists of efficient vehicles with an emissions index of less than 110g/km with the intention to phase out vehicles with CO_2 emissions in excess of 200g/km by 2015. Portugal further introduces procurement measures that target efficient lighting, office equipment and equipment and materials used in the design and construction of public works. France and the UK set car procurement targets for new cars[46], while Luxembourg states its intention to gradually replace governmental vehicles with lower emission or hybrid ones. The Flemish EEAP indicates that by 2010 80% of new vehicles will have an Ecoscore of more than 65. The EEAP of Wallonia and the federal EEAP of Belgium point to modernisation of the rolling stock of public transport companies. Finland refers to its Voluntary Agreements with local authorities, in which they will introduce all requirements listed in Annex VI.

The French NEEAP states that all office equipment to be purchased must be energy efficient, but gives no further details. The UK NEEAP indicates that minimum environmental requirements will be applied to an increasing range of energy-using products, while the NEEAP of Hungary only mentions minimum energy performance requirements for office equipment. Slovakia indicates that it might impose an age limit on public service vehicles in operation to improve the energy efficiency of its fleet more rapidly.

Cyprus indicates that lifecycle cost analysis is to be undertaken, while Malta states that a review is planned for ICT equipment with the intention to explore energy efficiency requirements in a cost-effective manner. Latvia in its NEEAP singles out two measures from Annex VI – i) requirements to purchase efficient equipment and ii) to use energy audits and implement resulting cost-effective recommendations – but does not provide any implementation details.

With regard to new and existing **public buildings**[47], various measures are introduced, ranging from building certification at regular intervals for reconstruction programmes and investment subsidies. The UK NEEAP indicates a very comprehensive set of measures for central government buildings, as well as in the health and education sector buildings. The German

---

45 Directive 2006/32/EC, Annex VI, points (b), (c) and (d)

46 In the UK, 130 g/km set as procurement target by 2010/11 for new cars purchased by the Government and used in administrative operations. In France, there is an obligation to renew state car pool with vehicles below 140 g/km. Luxembourg intends to gradually replace governmental vehicles with lower emission or hybrid ones (200 g/km)

47 Directive 2006/32/EC, Annex VI, point (f)

NEEAP indicates guidelines on sustainable building on federal government properties. Denmark goes beyond the provisions of the EPBD requiring energy certification and labelling of all public buildings regardless of their size. France sets energy performance requirements for full or partial renovation or construction of public buildings, together with optimisation of heating equipment. In addition, the French NEEAP indicates that buildings and public facilities will comply with low-energy or positive energy standards from 2010 and envisages thermal renovation of public buildings within the next 5 years. Portugal aims at having 20% of state buildings be class B or higher and aims for all public pools and changing rooms to have solar thermal installations, to have renewables installations in half of its schools and cogeneration installations in a quarter of the hospitals.

Malta states that it intends for all government ministry buildings to be fitted with PV panels as a demonstration project. The NEEAP of Slovakia has a set of measures for improving the buildings serving as civil infrastructure facilities, healthcare and educational premises. Spain and Lithuania also introduce measures aimed at reconstruction of publicly owned buildings. The NEEAP of Latvia states its intention to use the upgraded buildings as demonstration projects for the private sector. Sweden, in addition to having strong requirements and incentives for buildings, including public buildings, is establishing a web portal, where citizens will be informed about the performance of the buildings of the local authorities. Denmark already has such an online information tool for benchmarking the energy performance of public buildings.

A number of Member States introduce **energy audits** in the public sector. However, few specify requirements to implement the cost-effective recommendations identified in the audit[48]. Audits are referred to in the context of the public sector in the NEEAPs of Bulgaria, Malta, Poland, Portugal and Spain. The EEAP of the Flemish region stipulates that all investments with a payback of 7 years or less should be implemented within a 2 year period in the first phase of the programme, increasing the payback time of investments to be implemented to 10 years within a 5 year period. The government institutions in Denmark are required to implement energy savings measures with payback times of up to 5 years; the requirement may be extended to municipalities and regions. Cyprus indicates that all new or substantially renovated government buildings should be subject to an energy audit and intends to provide financing for the realisation of investments according to such energy inspections. The NEEAP of Romania features subsidised audits for various actors, including public buildings with a surface area greater than 1,000 m2 with state support contingent upon the implementation of cost-effective measures identified as part of the audit. The NEEAP of Latvia indicates that energy audits and implementing cost-effective recommendations are one of the Annex VI measures that is has selected.

Few NEEAPs introduce **financial instruments** for energy savings in the public sector[49]. Exceptions include Germany with its emphasis on contracting in federal buildings, combined with a programme for refurbishment of federal buildings; the Federal government of Belgium with its Fedesco agency that promotes third-party financing in federal buildings; and the UK with a revolving fund in the public sector and the London ESCO joint venture energy service company. The NEEAP of Slovenia mentions energy performance contracting as an instrument in the public sector. The NEEAP of Portugal states that efficiency contracts shall be mandatory for the state – this obligation is combined with an extensive auditing and building

[48] Directive 2006/32/EC, Annex VI, point (e)

[49] Point (a) of Annex VI

certification effort. The NEEAPs of Poland and Hungary include measures related to third-party financing and/or ESCOs in the public sector, but without providing clear implementation details. There are a number of actions in the NEEAP of Austria to support contracting relating to federal and public properties. In the Czech Republic support will be given to projects that will promote ESCOs and the market for energy services, but no additional information is provided on what types of projects would qualify or how the support will contribute to ESCO sector development.

As discussed above, measures intended to foster energy contracting in the public sector feature in the NEEAPs of Austria, Denmark, Germany, Greece, Hungary, Ireland, Portugal, Romania, Slovenia, and Sweden, as well as in the EEAPs of Flanders and the Federal Government of Belgium. The activities of Austria, Germany, Portugal, Slovenia and the Federal government of Belgium for promoting contracting and ESCOs in the public sector appear particularly strong.

The NEEAPs of Denmark, Estonia, Ireland, Poland, Slovenia, Spain, the UK have strong provisions for **exchange of good practices** and a number of Member States indicate that they intend to organise trainings for its civile servants. In terms of **communicating the exemplary role** of the public sector, few NEEAPs clearly address this provision. These include Cyprus, Denmark, Estonia, Finland, Ireland, Malta, Slovenia, and Sweden. Lithuania mentions this provision, without providing further details. The Swedish NEEAP describes a system for benchmarking within the Forum for Energy Efficiency Improvement, whereby the general public through an online service can compare the energy use and efficiency of their local authorities. Denmark requires public institutions to regularly register their energy use online. This enables benchmarking between institutions and allows energy-efficient equipment suppliers and providers of energy services to acquire information on market opportunities.

Table 8 below provides an overview of public sector provisions in the first NEEAP.

4.1. Best practices and innovative measures in the public sector

A few Member States have introduced concrete **quantitative targets** covering different aspects of the performance of their public sectors. Ireland has introduced a 33% energy demand reduction target for the public sector by 2020. The Finish NEEAP states that municipalities are to join a VA setting a 9% saving target and mandating all measures from Annex VI of the Directive. Spain also has an objective to reach 9% energy saving from the public sector by 2012.

The UK NEEAP shows that a broad range of targets has been adopted for the central government. The UK aims to reduce carbon emissions from office buildings by 12.5% by 2010-11 and by 30% by 2020, relative to 1999/2000 levels. It further aims to reduce carbon emissions from road vehicles used in its government's administrative operations by 15% by 2010/11, relative to 2005/2006 levels. More importantly, the government of the UK wants its Central Government’s office estate to be carbon neutral by 2012, by 2015 for Northern Ireland and by 2011 for Wales. With respect to energy efficiency, the UK's departments are to increase their energy efficiency per m² by 15% by 2010 and by 30% by 2020, relative to 1999/2000 levels.

The Federal German Government is under obligation to reduce the output of CO_2 emissions within its area of responsibility by 30% by 2008-2012, compared with 1990 levels. The

Flemish EEAP indicates that in 2007 a target percentage of energy efficient purchasing was to be set, but it is not specified and no details are provided to confirm whether a target has indeed been fixed. Portugal aims for 20% of its state buildings to be certified as energy class B- or higher.

The NEEAPs of Cyprus, Denmark, Germany, Finland, France, Ireland, Latvia, Malta, Portugal, and Slovenia have good public procurement provisions. Another example of a good practice in this area include mandating the implementation of all savings projects identified in audits that have a payback period categorised as short, as is the case in Denmark and the Flemish region of Belgium. Austria intends for new builds in the public sector to comply with

Table 8. Public sector provisions in the first NEEAPs

	Measures from Annex VI	Effective communication of the exemplary role and actions of the public sector	Exchange of best practices in the public sector			Measures from Annex VI	Effective communication of the exemplary role and actions of the public sector	Exchange of best practices in the public sector
AT	**Y**	**0**	**0**		**LV**	**0**	**N**	**N**
BE	**0**	**0**	**Y**		**LT**	**0**	**0**	**0**
BG	**0**	**0**	**Y**		**LU**	**0**	**0**	**N**
CY	**Y**	**Y**	**Y**		**MT**	**Y**	**N**	**N**
CZ	**N**	**N**	**N**		**NL**	**Y**	**N**	**N**
DK	**0**	**Y**	**Y**		**PL**	**0**	**0**	**Y**
EE	**N**	**Y**	**Y**		**PT**	**Y**	**0**	**Y**
FI	**Y**	**Y**	**N**		**RO**	**Y**	**N**	**N**
FR	**Y**	**Y**	**N**		**SK**	**0**	**N**	**0**
DE	**0**	**N**	**Y**		**SI**	**Y**	**Y**	**Y**
GR	**0**	**0**	**0**		**ES**	**0**	**0**	**0**
HU	**0**	**N**	**N**		**SE**	**0**	**Y**	**Y**
IE	**Y**	**Y**	**Y**		**UK**	**0**	**0**	**Y**
IT	**N**	**N**	**N**					

Legend:

Y Clear compliance with at least two measures from Annex VI
0 Indication of the exemplary role of the public sector, but unclear whether necessary measures from Annex VI have been committed to or other ambiguities, which preclude the assessment of whether NEEAP meets the public sector provisions of the Directive
N No indication of the role of the public sector

low-energy or passive house standards. It is also undertaking extensive programmes for reducing energy consumption in the public sector and supports third-party financing. The French NEEAP stipulates thermal renovation of public buildings within the next 5 years. The NEEAP of the UK provides extensive coverage of the public sector with measures covering almost every aspect of it (e.g. administrative buildings, social housing, health care, and so on) and a set of complementary measures (e.g. standards, assessments and ratings, financial support including the SALIX fund and the LAEF Scheme, a fund applied in Scotland). Portugal in its NEEAP pronounces that by 2010 half of public contracts for the purchase of goods or services should be covered by the National Strategy for Ecological Public Procurement.

A number of **innovative approaches** have been introduced, including energy audits linked to implementation provisions, joint-venture ESCO schemes, voluntary agreements in the public sector, green leaders, tailor-made training for public sector bodies, and providing support for public sector bodies in tendering. A number of NEEAPs include training schemes for public sector employees.

4.2. Weaknesses in the public sector

Many Member States do not provide clear statements in their NEEAPs as to which of the two required Annex VI measures it has adopted or will implement. Most Member States have adopted or are planning to introduce promising measures in the public sector. It is less clear, however, if these measures contain requirements, as provided for in Annex VI, or if they contain alternative measures only, such as guidebooks, training, and investment support. For example, some NEEAPs refer to various public sector programmes, including investment subsidies, but do not seem to introduce specific requirements as provided for by the Directive. On the other hand, some NEEAPs simply mention that measures from Annex VI will be selected, without giving details on implementation or estimated impact.

NEEAPs refer to public procurement action plans, energy efficiency criteria for various products and services and guidelines on how to use them. All of these can be powerful tools to reach end-users and save energy in the public sector. Nevertheless, the lack of clearly stated obligations on energy efficiency as a procurement criterion, or the requirement for lifecycle cost analysis, may result in the energy efficiency potential inherent in public procurement not being captured by regional and local authorities. These authorities are often cash-constrained in their investment budgets and may not have sufficient incentive to exploit the energy efficiency options open to them, resulting in them opting for short-term rather than long-term savings. Moreover, the lack of clearly stated requirements is not in line with the provisions of Article 5, in particular its reference to a selection of two measures from Annex VI. On some occasions it has been established that the criteria and guidelines will have an information and advisory role only. For example, the NEEAP of France indicates that environmental requirements *may* be integrated in award criteria, and the Lithuanian NEEAP states that recommendations will be made for public authorities to endeavour to use energy efficiency criteria. Sweden simply includes proposals to the Government to design a scheme, but it is not clear if and how such a scheme would be implemented. An additional weakness in fulfilling the public sector provisions is the general lack of strategies aimed at effectively communicating the exemplary role of the public sector to citizens and/or companies, which is essential if this sector is to fulfil its role as provided for by the Directive. In this regard, local and regional authorities should play an important role.

5. INFORMATION TO END-USERS

The Energy Services Directive provisions with regard to the availability of information for energy end-users are three-fold: i) Member States shall ensure that information on energy efficiency mechanisms and financial and legal frameworks adopted to achieve energy savings are transparent and widely disseminated to relevant actors; ii) Member States shall also ensure that greater efforts are made to promote energy end-use efficiency and iii) The Commission shall ensure that information on best energy-saving practices in Member States is exchanged and widely disseminated.[50] The availability of information provisions are included as part of the minimum reporting requirements for the first NEEAP.

Member States have introduced an impressive array of information measures. These range from measures aimed at raising awareness and altering behaviour among the general public, such as advertising campaigns, educational material and initiatives, advice on how to save energy and web-based energy savings tools and information materials, to measures that target businesses, such as sector-focussed information campaigns, trainings for professionals, energy audits and management schemes to energy efficiency publications for professional stakeholders. Another important group of information measures involve tools that support purchasing decisions, such as energy and environmental labelling and benchmarking to identify the 'best' or most cost-effective solutions.

Some Member States place their main focus on information measures that target the general public, while others introduce more targeted information measures aimed at various commercial sectors (e.g. Estonia, Germany, Ireland, Malta, and Poland). Apart from mandatory appliance energy labelling, the most common information measure indicated in the NEEAPs are **public awareness campaigns** that target the society as a whole, and general **information sources**, such as printed materials, networks of energy agencies, information centres, websites, seminars and exhibitions. Such measures are present to various degrees in all NEEAPs.

The majority of Member States have introduced or are planning to introduce information measures that target businesses, such as **sector-focussed awareness raising campaigns, specialised energy efficiency information materials** for professional actors and building owners, and energy audits for private premises. Mandatory energy efficiency **trainings for professional stakeholders**, such as energy managers, architects and building sector professionals, and tailored **advice on energy use** for the general public are mentioned in about half the NEEAPs. Fewer NEEAPs include measures related to the mandatory provision of trainings for the general public (such as eco-driving) and/or integrating energy efficiency related issues in school and university curricula. Only a few NEEAPs include provisions for internet-based information on benchmarking of different products to support purchase decisions for the general public. On the other hand, as indicated in the previous section, many NEEAPs indicate that the development of energy efficiency criteria and/or guidelines for green public procurement is underway or planned. These are tools to support the purchasing decisions of public authorities.

Few Member States meet the requirement for establishing conditions and incentives for market operators to provide more information and advice to final consumers on energy end-use efficiency. Some Member States refer to individual metering and/or have advanced

[50] Article 7 of the Energy Services Directive on Availability of information

metering provisions. While others have or plan white certificate schemes that also encompass providing information (see section above on cross-sectoral measures).

The energy conservation agreements in the energy sector indicated in the NEEAP of Finland have had a strong information element. The NEEAP of Austria indicates a planned VA with energy distributors and retail energy sales companies. The NEEAP of Slovenia refers to a provision for companies supplying grid-bound energy to carry out projects for final users to improve energy end-use efficiency, particularly in the residential and tertiary sectors and in SMEs. Germany envisages that energy providers shall inform final consumers of electricity and gas on energy saving installations and behaviour. France mandates energy companies or energy services companies to include a mandatory phrase on energy savings promotion in all publicity. The Czech NEEAP mentions the duty of utilities to offer energy services and information to end users, but provides no further details as to how this is to be achieved. Similarly, the NEEAP of Estonia indicates the enforcement of the energy savings responsibility placed upon the energy companies, without giving any further details. The NEEAP of Bulgaria indicates an intention to allow energy traders to offer extended energy services with a guaranteed service quality, but provides no further specification. The NEEAP of Cyprus indicates that informative energy bills will include inserts on energy savings measures that could be undertaken.

5.1. Best practices and innovative measures in information provision

A number of NEEAPs provide good examples with a strong set of diverse information measures that target both the general public and the business and industry sectors. The NEEAPs of Austria, Finland, Germany, Greece, Ireland, Portugal and Malta, along with the EEAPs of Belgium all include numerous measures that target various actors. These NEEAPs, along with the NEEAPs of Bulgaria, Poland, and Slovenia contain a wide diversity of information measures. Diversity can be considered a good practice in the context of information measures provided the efforts are well coordinated and the messages are consistent and properly tailored to the end-users being targeted. Using different channels of distribution also increases the outreach of separate information measures.

A wide diversity of promising information measures have been identified in the NEEAPs. Ireland and the UK present sizable and fairly comprehensive energy efficiency campaigns, with strong outreach potentials: the Power of One campaign and the Climate Change Communication Initiative in Ireland and the UK, respectively. The UK also has various networks of local advisory centres. Similarly, the Dutch NEEAP presents a number of information campaigns: MilieuCentraal, COEN, HIER – a combination of tools that add up to a well-structured delivery of information to end-users. The Portuguese NEEAP presents the More Programme (Programa Mais) that aims at 'popularising' energy efficient technologies and bringing about behavioural change in various end-use sectors. Its Operation E programme targets school children and young people.

Austria, Bulgaria, Cyprus, the Czech Republic, Hungary, Luxembourg and the UK all establish or maintain energy efficiency networks of agencies, experts, or local authorities. In Austria good practices include establishing an energy efficiency focus in youth educational forums and Internet tools (e.g. a platform for purchasing of efficient appliances and an online tool enabling monitoring and management of household energy use). Austria also integrates information activities in its financial measures and thereby strengthening them. Similarly, all or most of the measures in the NEEAPs of Estonia, Greece and Spain have an information element. The Belgian region of Brussels-Capital provides energy guidance to low income

households on how to lower bills without sacrificing comfort and support for major real estate managers. It has also launched competitions – the Energy Challenge and the Mobility Challenge – to challenge Brussels households to save energy through changing everyday practices. All are expected to have far-reaching impacts. Although the challenges focus on what can be done in terms of behaviour without making investments, evaluations of the programme have shown that participants have made investments to make further savings as a result of their participation and that they are also actively passing their experiences on to neighbours and friends. Cyprus has an ambitious CFL give-away programme. Cyprus, Malta and Slovakia have promising measures in education, while Denmark has strong provisions on advanced energy metering. Finland's VAs provides clear guidelines on information and its national energy agency also plays an important role in the information delivery to end-users. Technology competitions to promote the development and use of more energy efficient products and solutions, as presented in the NEEAPs of Finland – where more energy efficient windows were sought - and Germany – where competitors where challenged to achieve energy savings through better use of e-business solutions and systems combining smart meters, tariffs and consumer information – are an innovative, small-scale information measure with significant replication potential. France has a 'high energy performance' label for new construction with consumption considerably lower than the 2005 building codes and that use renewable energy and heat pumps. Currently a voluntary programme that allows for solutions to be included in the 2010 revision of the building codes is to be tested. France is also advancing on a reference system for good energy management. The NEEAP of Germany involves many information measures dividing the focus on sectors and concrete technologies. A strong measure in Germany is the *Zukunft Haus* campaign that provides information on energy efficient renovation and building modernisation. Slovenia has a set of measures that cover training for energy service providers and for journalists, as well as various competitions. The NEEAP of Sweden refers to a forum that is engaged in disseminating knowledge through a web-based information centre on best practices and life-cycle cost analysis for various users. The NEEAP of Sweden also places a considerable emphasis on information measures in the transport sector.

The Hungarian NEEAP mentions mandatory energy management for large energy consumers, as well as mandatory reporting on energy use as an information measure in industry. Luxembourg focuses on energy management, while Latvia plans to carry out analysis of available technical solutions in various industrial areas and to encourage implementation of the most cost effective (and where possible innovative) ones.

Providing the incentives and creating the conditions for market operators to provide more information and advice to final consumers on energy end-use efficiency are provided for by the Directive[51]. Good practices in this respect are found in the NEEAPs of Member States that impose energy saving obligations on energy suppliers, which may be combined with white certificates. The UK NEEAP indicates that it energy supplier obligation will be in place at least until 2020. The NEEAPs of France and Italy refer to their existing energy supplier obligation schemes. Poland declares its intention to introduce a white certificate scheme, while Bulgaria and Romania intend to study these tools. Denmark indicates that electricity, natural gas, district-heating and oil grid and distribution companies must deliver a considerable part of the increased savings. The requirements for meeting energy saving obligations tend to have a strong information provision element. This is explicitly stated in the case of the REG public service obligation in the Flemish region of Belgium, whereby

[51] Articles 7(2)

electricity distribution companies are to meet energy saving obligations by combining financing incentives with awareness raising activities.

5.2. Weaknesses in information provision

A few general weaknesses have been identified during the review of information measures. First, often it is difficult to establish the exact degree of commitment to the information measures that are described based on the information available in the NEEAPs. While some NEEAPs describe information measures that are ongoing or at an advanced planning stage and how they are/will be implemented, other NEEAPs give only vague ideas or general declarations about these measures and how they will contribute toward the achievement of the overall savings target.

Second, and related to the previous point, there is a general lack of indications of performance indicators that will enable the assessment of effectiveness and impact of information measures. It is difficult to evaluate the potential effectiveness and impact of information measures in the absence of a clearly specified target audience, target channels, content of promotional materials and other important details, including contextual. In some cases these deficiencies make information measures appear rather unfocussed and out of context.

6. STRENGTHS AND WEAKNESSES AND LESSONS LEARNT

The following section summarises the strengths and weaknesses by sector and highlights some of the lessons that can be learnt from the NEEAPs.

6.1. Lessons learnt: sectoral issues

The NEEAPs have introduced an impressive diversity of policy packages and measures targeting all end-use sectors, although the relatively weak focus on the transport sector in the majority of the NEEAPs is disappointing given its continued growth, its relative contribution to emissions of greenhouse gas and the considerable potential for savings that exists in this sector.

Some Member States have devoted extra efforts to preparing high quality NEEAPs, which present coherent and comprehensive strategies, backed by institutional and financial provisions. They often demonstrate a holistic view with regard to the scope and actions of individual measures, and introduce comprehensive packages of such measures applied across many end-use sectors, adopting a portfolio approach combining a mix of instruments and delivery mechanisms to achieve targets and bring about market transformation. Many NEEAPs clearly identify their priority end-use sectors or policy tools. Member States, whose NEEAPs present coordinated and comprehensive strategies, include **Finland, Germany, Greece, Ireland, Luxembourg, the Netherlands, Portugal**[52]**, Slovenia** and **the UK**. In contrast, some NEEAPs show a piecemeal approach characterised by fragmented and stand-alone energy efficiency measures targeting a sector or an end-use.

Measures aimed at saving energy in the residential sector, including buildings, equipment and behaviour, have been a key feature at the heart of most NEEAPs. Early action that is ongoing prevails in the NEEAPs, with many of the measures introduced over the last 5 years. While

[52] It should be noted that the Portuguese NEEAP fails to cover the entire period.

many NEEAPs include more national measures and/or expect a larger share of savings to come from national measures[53] than from measures related to the implementation of Community legislation, national measures often implicitly support the implementation of Community legislation in the national contexts even if not explicitly called for in Community legislation. The majority of NEEAPs build on early actions and national measures supporting the implementation of Community legislation. On the one hand this trend can be interpreted as consolidating the implementation of existing national and Community legislation. On the other hand the majority of Member States do not demonstrate a real ambition to introduce additional measures above and beyond what is required to transpose and implement existing Community legislation.

Almost all new Member States undertake refurbishment of residential panel buildings with various degrees of ambition. Given the overall low efficiency of such buildings, this is a very positive trend. Some Member States have declared ambitious targets towards low-energy, passive or carbon-neutral new buildings and support these primarily with financial means, but also by public sector leadership. On the other hand, fewer NEEAPs include measures that target building equipment: exceptions are Italy and France which have strong measures related to boilers. Measures related to household appliances and lighting technologies are less common. This is thought to be due to the success of existing Community policies, such as energy labelling, that have already brought about market transformation. A small subset of NEEAPs includes no measures aimed at improving the energy performance of new buildings. Measures in industry and especially agriculture have received little attention. Occasionally energy efficiency improvement measures in industry reported in the NEEAPs have been found to be outside the scope of the Directive.

Many Member States introduce and strengthen measures that target refurbishment of existing buildings. These include various 'traditional' financial tools, such as grants, soft loans, tax breaks and other allowances for owners and landlords or operators, as well as more innovative ones such as performance contracting and domestic carbon offsets. Some Member States integrate horizontal measures in actions in existing buildings, such as information campaigns and advisory networks and services.

A few Member States only present clear and consistent strategies in transport. The increasing importance of energy use in the transport sector calls for a more comprehensive and strategic approach that captures technological, infrastructural, financial, behavioural and spatial planning measures. However, it is acknowledged that this is a complex sector, with many interconnected issues (technology, infrastructure and spatial planning, behaviour, etc.), which at national level are often decided at different levels of government (central, regional and local) and fall within the competence of a number of departments and ministries. In transport the majority of the NEEAPs focus on technology and fiscal measures. A couple of Member States also include large ongoing infrastructure projects, while some support and promote public transport or introduce e.g. bicycle lanes and bicycle infrastructure to reduce the carbon intensity in this sector. While transport infrastructure can be a powerful driver towards achieving energy saving transport modes, it appears that some projects of this type – such as metro and railway refurbishment – will be concluded as part of general infrastructure upgrade packages and it is sometimes very unclear how they in themselves will contribute to energy savings.

---

[53] I.e. measures that are not provided for by Community legislation, or that go above and beyond its provisions

Well-described and sound packages of transport measures targeting behaviour change, including modal shift towards environmentally friendly and energy saving modes of transport, have been rare and/or have been introduced as separate fragments that do not seem to form part of a coherent strategy encompassing other measures aimed at the transport sector. Very few Member States include spatial planning aspect into their transport packages. Austria is one notable exception. However, spatial and urban planning measures are related to local policies and hence may be only broadly sketched out at central level.

NEEAPs introduce various measures and policy packages in the public sector too. However, it has been less clear if these measures contain requirements, as called for in Annex VI, or contain alternative measures only. Similarly, NEEAPs often refer to public procurement action plans, energy efficiency criteria for various products and services and guidelines on how to use them, but it is unclear if these would introduce obligations on energy efficiency as a procurement criterion or require the application of lifecycle cost analysis. Few NEEAPs demonstrate good strategies for communicating the exemplary role of the public sector.

Member States introduce an impressive range of information measures in their NEEAPs, targeting both the general public and businesses. However, it has often been difficult to establish the exact degree of commitment to information measures and their possible effectiveness and impact due to the scarcity of detail on measures and their implementation. Furthermore, few countries clearly specify how they shall meet the requirement for establishing conditions and incentives for market operators to provide more information and advice to final consumers on energy end-use efficiency.

6.2. Lessons learnt: horizontal issues

The first NEEAPs are very heterogeneous in terms of types of measures and policy packages, as well as in terms of content and degree of detail in describing separate measures.

The absence or sporadic indication of saving estimates in some NEEAPs, along with the mostly limited degree of detail about assumptions made in estimating savings from different measures, have impeded the assessment of the NEEAPs and of how realistic they are. In some cases even the qualitative description of the scope and concrete actions involved in measures has been very vague. All these reporting deficiencies have made it hard to assess if some Member States can deliver in accordance with their strategy and targets.

Some NEEAPs include a consolidated set of well-described measures, while others provide extremely long lists of measures with virtually no details as to their content or implementation. The EEAP of Wallonia with almost 140 actions and – the most extreme case – the Austrian NEEAP which includes a list that features more than 450 actions divided among approximately 90 measures belong to the latter category. This suggests an unnecessary drive for artificial disaggregation of measures: for example, horizontal measures are listed separately in each end-use sector and/or subsidy schemes are broken down into separate measures each of which reflects grants for a particular type of technology. The adoption of a Commission proposal for a common reporting template, together with clear guidelines on the required level of detail in reporting, can be expected to tackle this shortcoming.

Some NEEAPs demonstrate Member State experience with designing, introducing and monitoring energy efficiency policies. The NEEAPs of Germany, Luxembourg, Sweden, and UK, for example, demonstrate promising policy packages and show a drive towards consolidating the implementation of existing policies. On the other hand, many new Member

States introduce sets of rather fragmented measures that do not amount to a strategy capable of realising the potentials and achieving the savings target.

Furthermore, the assessment has revealed that new Member States in particular seem to have striven to 'invent' and introduce new measures, mostly so called soft measures. While this, in principle, should be considered a laudable effort, the vague manner in which these new efforts are described indicate that they may not be very well thought out or in deed an integral part of a national strategy designed to improve efficiency and save energy over time. There also seem to be confusion about the role of savings from early actions in achieving the 2016 savings target. For example, not all NEEAPs appear to be based on the understanding that only savings from early actions that can be measured and verified in 2016 are eligible toward the target. In the absence of detailed savings estimates, including the assumptions and methodological explanations for the large majority of NEEAPs, it has been virtually impossible to conclude whether NEEAPs (a) only include early action that will still continue to generate savings in 2016; and (b) only account for those savings from early action that will accrue in the period 2008-2016. It may be the case that some Member States have counted savings that accrued prior to 2008 toward the target or have included measures that may not continue to generate savings in 2016[54].

Member States have taken one of two approaches towards the NEEAP. Some Member States have considered the NEEAPs as an ‘inventory’ of all, or the large majority, of energy efficiency measures in place. Other Member States have indicated that they only present measures sufficient for them to meet the national saving target and not all measures in place in the country.

Many NEEAPs, especially but not only the ones of new Member States, misinterpret what a 'measure' constitutes and list legal acts and/or strategic or programme documents as measures with little detail as to the exact policy actions that these are to trigger. For example, some new Member States list whole Operational Programmes under Cohesion Policy or legal acts as 'measures'. Cohesion Policy funds can support implementation of the NEEAPs and enable investments in a wide range of areas encouraging end-use energy efficiency, including building refurbishment, energy audits, information measures and training. Relevant investments falling under the scope of the Directive will therefore often be included in a number of Operational Programmes simultaneously. In the absence of details about the (expected) share of different project types, it has been difficult to assess the eligibility and role of concrete national Operational Programmes as measures in the NEEAPs. In the future, Member States are encouraged to ensure that relevant investments under Cohesion Policy are fully integrated into national energy efficiency strategies and as appropriate to consult Cohesion Policy Managing Authorities on relevant actions, particularly at regional and local level, for inclusion in the NEEAPS.

Local and regional authorities are key players promoting end-use energy efficiency, including through public procurement and provision of public services. Depending on their competencies local and regional authorities may be responsible for local regulations, spatial planning, approval of planning applications and provision of grants. It has been challenging to evaluate and put in a comparative context the NEEAPs of federal states and/or states with a strong role of the regional authorities. In countries with a high level of decentralisation many

[54] For example, in the case of the UK it has been noted that part of the savings from EEC-1 may probably not be alive in 2016, e.g. CFLs installed in 2002-2005.

measures are expected to be introduced at regional or local level, while fewer measures come from central or federal governments. Central measures have to be of a more general nature in order to apply to the specifics of diverse regions in a country. The case of transport measures indeed illustrates the impact of the statutory powers of local authorities.

In the absence of a clear interpretation of undertakings under Directive 2003/87/EC, the exclusion of the Emission Trading sector has been treated in different ways: for example some Member States introduce electricity saving measures in ETS installations thus only excluding fuel use in ETS.

Many Member States place a very strong focus on state subsidies: while for some sectors and technologies these may be justified, extensive reliance on subsidies may alter market signals and discourage the formation of a market for energy services. Nevertheless, some NEEAPs do rely on harnessing market forces for delivering on their commitments. However, little action has been identified to create innovative market-based financing vehicles for end-use energy efficiency, even less so with the involvement of financial institutions. Notable exceptions are a few revolving funds (e.g. the UK, Italy), the domestic carbon credits in France, and the Estonian measure for energy efficiency investment scheme for low-income households. Some Member States refer to various measures backed by support from the Cohesion Policy Funds.

NEEAPs refer to a wide range of national regulations. It is noted that while most measures build on existing legislation, little has been committed on monitoring the implementation and enforcing legislation. Limited introduction of new legislation has been reported, mostly related to continuing and/or strengthening existing regulatory provisions (e.g. building codes) and/or introducing new Community legislation (e.g. the Ecodesign requirements).

On a few occasions savings overestimates have been inferred, primarily concerning transport measures, information measures and savings expected from the implementation of the Ecodesign Directive. Due to the fact that implementing measures setting minimum energy efficiency performance requirements for products under the Ecodesign Directive are still in preparation, measures building on them are expected to bring limited amount of savings towards the intermediate target. Similarly, recently adopted legislation on CO_2 emissions from light duty vehicles is expected to bring limited amount of savings towards the intermediate target.

7. SUMMARY OF ASSESSMENTS AND LESSONS FOR THE FUTURE

A first preliminary take on the Plans submitted gave some encouragement, but also indicated a considerable gap in several Member States between the political commitment to energy efficiency and the measures adopted or planned and the resources allocated. This concern was reaffirmed once all Member States NEEAPs had been assessment. Several NEEAPs present comprehensive strategies and plans, that if implemented are likely to meet the ESD-target. However, many also seem to present a business-as-usual approach that may fall short of the target.

7.1. Summary on NEEAP assessments

The first NEEAPs propose a wide diversity of policy packages and measures targeting different end-use sectors. Many NEEAPs demonstrate coherent and comprehensive strategies towards the intermediate and overall targets, backed by institutional and financial provisions. A number of NEEAPs clearly identify their priority end-use sectors or policy tools.

In contrast, some NEEAPs show piecemeal thinking with a scattering of fragmented energy efficiency measures. The absence, or sporadic indication of savings estimates in the majority of NEEAPs, along with the mostly limited degree of detail about assumptions made in estimating savings from different measures, have impeded the quantitative assessment of the NEEAPs and how realistic they are. In addition, for several Member States there is a considerable gap between the political commitment to energy efficiency and the measures adopted or planned, as reported in the NEEAPs, and the resources attributed to preparing it.

Almost all Member States have introduced a 9% national indicative energy savings target for 2016 calculated in line with Annex I of the Directive. Some Member States have committed to targets that exceed 9%: Italy 9.6%, Cyprus 10%, Lithuania 11%, and Romania 13.5%. This is very positive. Other Member States have indicated that they expect savings from measures to go beyond 9% without committing to or formally adopting a higher target (Luxembourg 10.4%, Ireland 12.5% and the United Kingdom 18%). A number of Member States indicate that the NEEAPs form part of their strategy to reach the 20% reduction in energy demand by 2020, among them Austria, Ireland and Sweden. A few NEEAPs do not entirely follow the provisions related to the setting of national indicative savings targets. More attention should be paid in particular to the calculation methodology set out in Annex I and to the 2008-2016 timeframe.

Ongoing measures that qualify as 'early actions'[55] dominate the majority of NEEAPs, and some Member States indicate stricter interpretation of such early actions. Some Member States explicitly indicate the share of savings from early action. In contrast, the NEEAPs of some Member States, such as Estonia, Latvia and Poland, rely extensively on new measures. Thus it is difficult to assess whether certain Member States will be able to deliver in accordance with their strategies and targets given the brief descriptions of measures and the absence of saving estimates.

Measures in the buildings sector, especially residential buildings, have been at the heart of most NEEAPs. Numerous measures target refurbishment of existing buildings. Some Member States declare ambitious strengthening of building codes and support passive or low-energy house buildings. With varying degrees of detail, almost all NEEAPs also include measures in the tertiary, transport and industrial sectors However, as regards agriculture, the only NEEAPs to include measures specific to this sector are from Latvia, the Netherlands, Spain and Sweden. Some NEEAPs have included measures that fall outside the scope of the Directive. Most commonly these include fuel switching and power generation, including large Combined Heat and Power installations, biomass district heating, network loss reductions, biofuels, measures in international transport, and measures that have some impact on the Emission Trading Scheme.

In addition, many of the NEEAPs include a number of promising horizontal measures. The majority of the NEEAPs propose a range of measures to fulfil the provisions regarding the exemplary role to be played by the public sector, but some Plans contain little or no information in this regard. However, few NEEAPs demonstrate good strategies for communicating the exemplary role of the public sector. Public procurement is a key element in capturing the power of the public purse for energy efficiency and the majority of NEEAPs

[55] Energy efficiency improvement measures implemented by Member States not earlier than 1995 (in limited cases not before 1991) that still continue to deliver measurable energy savings in 2016, Directive 2006/32/EC, Annex I .

contain public procurement measures. However, it is not always clear if these measures contain concrete requirements, as called for in Annex VI of the Directive, and exactly how these would be met. In most cases, the link is lacking between the public procurement measures reported in the NEEAPs under the Energy Services Directive and those reported under the Commission's Green Public Procurement policy.[56] The Commission has strongly recommended that Member States adopt green public procurement policies and action plans. Many Member States have adopted or are in the process of adopting such action plans describing how public authorities will or should include energy efficiency requirements in their tendering procedures.

Most Member States have introduced a variety of information measures. These range from measures aimed at altering general public behaviour, such as public awareness raising campaigns, public training and education, advice on energy use and general information sources like web tools and publications, to measures that target business entities. The latter comprise sector-focussed information campaigns, trainings for professionals, energy audits and energy efficiency publications for professional stakeholders.

A number of NEEAPs provide good examples of best practices and innovative measures with a strong set of diverse information measures that target the general public and businesses.

7.2. Lessons for the future

In order to become an effective and key policy tool that will support the development, planning, implementation and follow up of energy efficiency policy and measures to save energy on a Member State level, the NEEAPs should provide enough information to demonstrate whether and how Member States can reach the savings target. To address the deficiencies identified during the assessment of the first NEEAP harmonisation of the following is recommended by Commission services: (a) NEEAP reporting format; (b) the level of detail required when describing measures and estimated or measured savings; (c) reporting of energy savings according to harmonised measurement principles. The Commission services will in turn assess the second and third NEEAPs using the refined harmonised measurement principles, energy efficiency indicators, and benchmarks foreseen by Article 15(2) and 15(4) of the Directive. Common guidelines that outline the typical information to be supplied for the various elements of the plan and for certain types of measures are also recommended. A proposal for a Commission Decision on harmonised savings measurement principles is currently being drafted by Commission services, assisted by the Regulatory Committee as required by Article 15(2). Furthermore, Commission services has also drafted a template and common guidelines for reporting, which will be discussed with Member States both within the framework of the Concerted Action on the ESD and the Regulatory Committee.

A move away from NEEAPs characterised by fragmented, stand-alone measures towards coherent packages of policies and measures aimed at the various end-use sectors is needed. Numerous good practices have been identified in the first NEEAPs. Member States should take advantage of the strong learning potential inherent in the first NEEAPs and exchange good practices. It was found that in general comprehensive coverage of the transport sector is

---

[56] Communication from the Commission on Integrated Product Policy: Building on Environmental Life-Cycle Thinking COM(2003) 302 final of 18 June 2003, and Communication from the Commission on Public procurement for a better environment COM(2008) 400 final of 16 July 2008

still largely lacking, though a few notable exceptions where identified. Member States should adopt a more strategic approach to achieve integration of energy efficiency and transport policies.

Regional and local administrations have an important role to play. Member States should scale up their efforts to capture the energy saving potential at local level in their NEEAPs by involving authorities and market actors at local level in dialogue and practical elaboration and implementation of measures.

Also ideally, the Commisson's Energy Efficiency Action Plan could be linked more closely to the national efficiency action plans and the latter could take into account longer term time horizons (e.g. 2030, 2050) and more ambitious targets that are agreed to by the Member States at Community level. Integration with other reporting obligations, especially those related to specific energy efficiency policy measures such as the proposed EPBD recast and measures to reduce green house gas emissions, e.g. alignment of reporting periods, streamlined methodologies on calculation of energy savings and reduction of green house gas emissions, would reduce the current reporting burden already imposed upon Member States.

The Commission services are committed to facilitating further development and improvement of the NEEAPs, and have provided bilateral feedback on each Member State's NEEAP and will continue to do so in the future. The Commission services has also put in place a Concerted Action on the Energy Services Directive, a Member State platform for exchange of experiences and good practices, where one of the five core themes focuses on the National Energy Efficiency Action Plans and how to improve them and establish their strategic role in the future. The Intelligent Energy Europe Programme also supports implementation of the Energy Services Directive through the funding of a number of projects aimed at improving and facilitating its implementation. As mentioned above, the Commission services are currently drafting proposals for a harmonised template and reporting guidelines for the second and third NEEAPs, as well as harmonised principles for measuring and verifying energy savings, energy efficiency indicators and benchmarks for the use in the subsequent monitoring, assessment and follow-up of NEEAP implementation.

8. CONCLUSIONS

The NEEAPs could play a more important role in the future. The Action Plans essentially represent a practical demonstration of the commitment of Member States to energy efficiency. They will however only be effective if they are translated into real action on the ground. The analysis of the NEEAPs has shown that some Member States have already recognised that with a holistic and integrated approach these national plans can become a key policy tool that go well beyond the implementation of the Energy Services Directive.

The Commission services recognises the great potential that NEEAPs could play in improving the focus on energy efficiency and in streamlining Member States' efforts supporting citizens, by empowering them as consumers to make well-informed energy choices, and market actors, including those at local level, in saving energy in a cost-effective manner, thus reducing emissions of greenhouse gases, increasing the competitiveness of European businesses, creating jobs and retaining jobs and improving the energy security of the Community. Equally important, the NEEAPs provide a means for sharing of best practices among Member States, and the various players in energy efficiency, as well as for developing synergies among the strategies and measures adopted. Currently one reporting obligation under one single

directive, the National Energy Efficiency Action Plan could play a much more important role if Member States come to see it as an essential strategic policy tool, one that is used to coordinate efforts in the complex field of energy efficiency charting the way ahead, one that could help the Community move forward together on saving energy. The current climate seems to provide the perfect opportunity to bring together all energy efficiency reporting requirements – existing and new – into one Action Plan, providing one single reporting system for monitoring and evaluation of progress. Such a coordinated approach will also greatly assist Member States in fulfilling their reporting obligations concerning greenhouse gas emissions. Furthermore it will benefit the Member States and improve implementation of measures, while providing the Commission with a better understanding of how and what Member States are doing to realise their energy efficiency strategies.

A successful Action Plan would place energy efficiency policy firmly within the broader policy context, it would prioritise resource allocation across the entire energy efficiency portfolio, it would ensure that synergies between policies are captured and duplication avoided, and that clear responsibilities for implementation is allocated. A successful Action Plan would also place consumers at the heart of the proposed policies since only consumers who are aware of the benefits of energy efficiency and are empowered to make informed choices can be drivers for change. Considering its great potential for stimulating market uptake and development of more energy efficient products and services, the exemplary role of public procurement should also be considerably strengthened in the NEEAPs Relevant public procurement measures included in the NEEAPs should therefore be fully coordinated with the broader GPP Policy and National GPP Action Plans and possible synergies should be highlighted. Whilst Green public procurement addresses a broad range of environmental impacts, the focus is often on energy use and energy efficiency.[57].

Few, if any, of the Action Plans delivered by Member States fit this description. Given the growing importance of energy savings to energy security and sustainable development of the Community, the Commission services urge Member States to act quickly – especially given the recent economic downturn and notably concerning investments in energy efficiency which is set to retain and create jobs in a local context – and would welcome Member States taking the initiative to further improve their NEEAPs and their implementation.

[57] A recent Commission study on the implementation of Green Public Procurement has furthermore shown that buying green can also lead to an average reduction of 25% of CO_2 emissions and to an average decrease in costs of 1%, taking into account life cycle costs. See: http://ec.europa.eu/environment/gpp/index_en.htm

Annex 1: Summary of assessments of the first National Energy Efficiency Action Plans by Member State

AUSTRIA

General evaluation

The National Energy Efficiency Action Plan of Austria commits to a 9% energy savings target for 2016 and a 2% intermediate target for 2010. The target has been calculated in accordance with Annex I of the Directive, and the timeframe of the NEEAP corresponds to the requirements set by the Directive.

- The NEEAP includes more than 450 actions listed within almost 90 measures covering a broad range of areas. Measures are disaggregated into unnecessarily small units of actions and include only very brief descriptions. The measures constitute a list of actions that lacks indications of their relative role and value. Due to this, the content of the NEEAP is not always clear, it appears very fragmented and difficult to grasp. Based on the scarce information provided, a lot of overlap is anticipated.
- The NEEAP includes a qualitative (star-rated) evaluation of the measures in terms of importance of the actions for the attainment of the savings target. It is unclear whether this refers to the contribution to the overall or to the intermediate targets of the actions.
- The contribution of measures by end-use sector cannot be established due to the lack of quantitative savings estimates. With regard to the number of measures, there are 9 measures in the residential sector (of which 1 seems to be a repetition), 18 measures in the public sector, 10 in tertiary, 14 in industry, 22 measures in transport, and 14 cross sectoral measures.
- The NEEAP builds on 258 early actions (about one third of these has been completed before 2008 or continues without change) and 201 new actions eligible under the Directive.
- There are 31 eligible actions that transpose Community directives/legislation on national level.
- The list of measures presented in the NEEAP of Austria is a credible one. However, due to the very brief description of the measures, it has been impossible to evaluate whether the individual measures are realistic.
- The measures are assigned a qualitative indication of the budget. This suggests that the Member State has planned the financial background of the NEEAP, but no clear commitment or estimate of the necessary resources has been made.
- A large number of the measures in the Austrian NEEAP would qualify as innovative and/or best practice. The NEEAP is exemplary in applying more stringent measures than those required by Community legislation (mainly EPBD). Many of the transport measures could be considered best practice, e.g. energy efficiency considerations are integrated into spatial planning - this appears both in relation to transport and to buildings.

Summary of strengths

- Long list of diverse measures that cover all sectors in a balanced way.
- Strong, informative introductory analysis of the necessary steps to reach the targets.
- Large share of additional effort that goes beyond compliance with Community legislation. Community obligations are usually substantiated with additional instruments and/or are transposed with more stringent provisions.
- Diverse types of instruments are employed: financial, legislative, promotional and informational.

Summary of weaknesses

- The actions in the NEEAP seem fragmented and the strategy lacks coherence.
- The measures and actions are only briefly described, if at all. While measures are mostly well substantiated with a collection of many specific actions, it is not always obvious how these actions support the objective of the measure.
- The timeframe of the foreseen actions should be clarified: often the start and end dates are not indicated and/or there is a mismatch between the dates and the status description.
- There is much overlap among measures (some of them declared in the NEEAP) and some look almost identical. The NEEAP includes indication of overlap in the tables, however, the meaning of this is blurred, and the potential overlap seems to be disregarded in many cases.
- The expected share of savings by sector is not specified, nor is the importance of single measures or of groups in absolute terms. The relative importance is put forward, but in a rather vague manner.
- The estimation of savings and foreseen budget for the measures are done only qualitatively.

Role of Public Sector

The exemplary role of the public sector is expected to be enhanced by the measures included in the NEEAP and is to be communicated to other energy users mainly through demonstration projects and information and advisory centres, however the degree of details provided is insufficient to allow for proper assessment

The Austrian NEEAP indicates measures that facilitate exchange of experiences on energy efficiency practices among public bodes.

All six public procurement measures listed in Annex VI of the Directive are incorporated in measures presented in the NEEAP.

Provision of information and advice

The NEEAP complies with the provisions for information on energy efficiency to end-users. Many measures focus primarily on increasing the amount, access or value of information. The NEEAP does not include measures that clearly address how to create conditions or incentives for market operators to provide more information and advice to final energy customers on energy efficiency. However, a "Voluntary agreement with Energy distributors and retail energy sales companies" is foreseen which might potentially include these incentives and/or obligations, but Due to insufficient details on the measure, it cannot be judged.

Conclusion

Overall the NEEAP of Austria fulfils the major obligations of the Directive. It is an ambitious NEEAP, which contains a large number of measures that cover all end-use sectors, and include many good practices.

There is a clear commitment to the 9% target for 2016 (and a 2% intermediate target in 2010). The NEEAP is mainly based on already existing national, federal and local strategies and programmes. The NEEAP also comprises measures implementing relevant Community legislation.

On the other hand measures are presented as a set of lists of actions lacking descriptions, links, and explanations, and with very limited details, making the plan fragmented. In addition, savings from measures, as well as the foreseen budget for implementing measures, are estimated only in a qualitative manner. While the NEEAP indicates potential overlaps between measures, the evaluation process identified other further possible overlaps. For this reason, while the list of measures is promising, it is difficult to assess whether the NEEAP presents a realistic strategy towards the savings targets.

BELGIUM

General evaluation

Belgium has not submitted one consolidated National Energy Efficiency Action Plan, but four separate documents: three regional energy efficiency action plans (EEAPs) and one federal EEAP. Belgium has no set a national energy savings target. The EEAP of the Flemish Region indicates a 3% intermediate target and a 9% overall target and indicates the intention to spread the target equally over the nine years (i.e. 1%/annum). The expected savings declared in the Flemish EEAP go beyond the indicative target in the Directive, (9.6% target for 2016 and 4.9% target for 2010), but no commitment has been made to going beyond the overall target. The Plan of the Walloon Region sets a 9% target for 2016, but does not set an intermediate target. The Plan of the Brussels-Capital Region indicates a 9% target for 2016, but no intermediate target. The Plan submitted by the Federal Government contains no targets.

There is insufficient information to ascertain if the regional targets have been calculated in line with the provisions of Annex I of the Directive. The EEAP of the Brussels-Capital Region appears to not have excluded undertakings under Directive 2003/87/EC.

Each of the Plans indicates a timeframe of 2008-2010, whereas these first Plans should have covered the full nine year period 2008-2016.

- Together the four documents are very heterogeneous in terms of content and presentation, which makes them hard to collate into a coherent national strategy. Given its presentation, to assess the realism of the regional and federal efforts in terms of achieving the overall ESD-target is very difficult. The federal EEAP and the EEAP of the Walloon region provide long lists of measures with very scarce details about their content or implementation. The 2016 target of the Walloon region is expressed in final energy, while the 2016 target of the Brussels-Capital Region is expressed in primary energy. The three regional targets also appear incompatible because the EEAPs of Wallonia and Flanders apply electricity conversion factor of 1, while the EEAP of Brussels-Capital uses a conversion factor of 2.5 for electricity.
- The four EEAPs have good sectoral coverage with the exception of the agricultural sector: each of the Plans contains information about the measures to be taken in various sectors though with various degree of detail. There are numerous measures related to residential and tertiary buildings (legislation, financial incentives, information), as well as integrated transport packages.
- Wallonia, Brussels-Capital and Federal Government EEAPs provide no estimates of anticipated energy savings per sector or by measure: this has made it impossible to assess country-wise how sectors contribute to the saving target, to identify the most important one in terms of savings estimates, and so on. The Flemish EEAP contains energy saving estimates.
- All four EEAPs build primarily on early actions, which are still ongoing. The majority of measures are domestic (regional and federal) initiatives: it is positive that many support the implementation of Community policies and legislation.

Summary of strengths

- All four EEAPs include strong integrated measures in the transport sector with a strong focus on information provision and awareness-raising.
- All EEAPs have good measures in the public sector and in general various financial incentives (subsidies and, at federal level, tax incentives) that support implementation of and going beyond Community legislation. Other good practices include support for passive houses (the Federal EEAP, the EEAPs of Wallonia and Brussels-Capital).

Summary of weaknesses

- The major inconsistency of the Belgian EEAPs is the lack of a single coherent national document, which would reflect all measures implemented at various levels of government in the country.
- The four EEAPs are very difficult to collate to get an overall view of the measures implemented in Belgium. To assess the realism of the overall target and the measures in the country, even if the three regional EEAPs are mostly compliant with the Directive, is therefore extremely difficult;
- The Walloon and Brussels-Capital EEAPs provide long lists of measures with very little information about the actual content of the measures (137 in the case of Wallonia, 49 in the case of Brussels-Capital);
- The Federal EEAP introduces no saving target. The regional EEAPs acknowledge the existence of national measures, but do not include or reference them;
- The three regional EEAPs do not apply the same conversion factor for electricity and express their targets in different units.

Role of public sector

All four EEAPs have clearly mentioned the exemplary role of the public sector and address some of the requirements listed in Annex VI. All EEAPs refer to public procurement geared towards energy efficiency, but provide limited details making it difficult to establish which measures from Annex VI will be implemented. The EEAPs include specific information about facilitating the exchange of best practices between public sector bodies.

All EEAPs include information regarding the exemplary role of the public sector, but do not contain sufficient information regarding the effective communication of public sector actions to end-users.

Provision of information and advice

All four EEAPs introduce numerous information provision measures. It is very positive that these are often part of integrated packages that include financial incentives (subsidies, tax incentives) to support the implementation of certain regulatory provisions.

The EEAP of the Flemish Region refers to the requirement for electricity distribution network operators to comply with energy saving obligations by actions that always include financial contribution and awareness-raising. The EEAP of Brussels-Capital also refers to a public service obligation for distribution network operators to promote rational use of electricity, also via information provision. The Walloon EEAP provides no detail on how appropriate conditions and incentives will be created for market operators to provide more information and advice to final customers on energy end-use efficiency.

Conclusion

The four EEAPs submitted by Belgium do not provide a single national-level savings target and indeed are rather heterogeneous in terms of content and presentation of measures (degree of detail, availability of saving estimates, etc). In the absence of a national target and an explanation of how the Federal and regional strategies would contribute towards its attainment, it is difficult to assess the measures implemented in Belgium, whether the reporting provisions have been met and to judge how realistic the Belgian NEEAPs are with regard to achieving the ESD-target. Thus, the major inconsistency of the Belgian submission is the lack of a coherent single national document, which would normally reflect all measures implemented at various levels of government in the country.

On the other hand, all four EEAPs have adequate provisions related to the exemplary role of the public sector and information provision. All four EEAPs include good measures in the transport sector, which include a strong focus on information provision and awareness-raising Each of the EEAPs contains various good practices related to financing instruments, involving professionals (architects, engineers, etc.) in energy efficiency, working with facilitators and advisors.

BULGARIA

General evaluation

The National Energy Efficiency Action Plan of Bulgaria commits to a 9% national energy savings target for 2016 and a 3 % intermediate target for 2010. The NEEAP only covers 2008-2010, as indicated on the front page and re-confirmed in the executive summary. Whilst it appears that the Bulgarian authorities understand that the reporting period for the achievement of the overall target is 2008 to 2016, this first Plan does not cover the entire 9 year period but has been restricted to the 2008-2010 period. The intermediate and overall energy savings targets have been calculated correctly.

The NEEAP appears to be more of a collection of separate measures rather than a coherent plan with a strategic outlook.

- Only the intermediate target has been split into sectoral targets: the largest amount of savings in 2010 is expected to come from the transport sector. However, the measures described appear inadequate to achieve sectoral targets in the tertiary and transport sectors.
- There is a strong predominance of existing measures, with the exception of agriculture, where all measures listed are new).
- The NEEAP provides a good balance between national measures and measures introduced to comply with Community legislation.
- The NEEAP shows a preference for legislative instruments and energy audits. In some sectors general financial incentives will continue to play a role.

Summary of strengths

- The NEEAP has been developed based on good background knowledge on sectoral energy consumption.
- Sectoral breakdown of the intermediate target.
- The NEEAP shows a preference for legislative instruments, while general financial incentives will continue to play a role.
- Responsible authorities have been indicated and extending the role of the national energy efficiency agency to include monitoring of the implementation of the Directive is envisaged.
- Numerous measures in the NEEAP relate to energy audits, which if properly implemented – including proper follow-up of the cost-effective actions that are identified – can be an appropriate tool to deliver energy savings particularly in buildings and industry. A number of good financing tools, combining soft loans and grants), targeting various sectors.

Summary of weaknesses

- The NEEAP only covers the period 2008-2010.
- The level of detail provided about savings from measures tends to be rather modest, which makes it difficult to realistically judge their potential impact and whether there is commitment to implement these measures in a coherent manner. Energy savings estimates have only been given for a small proportion of individual measures.
- There are strong doubts of the ability of measures especially in the tertiary and transport sectors to deliver savings that add up to almost half the 2010 target. In the tertiary sector most measures are in effect strategic documents. In the transport sector measures may not bring wide-ranging technical or behavioural changes needed to deliver 30% of the expected savings in 2010.
- All measures in the agricultural sector are yet to be introduced and the summary table of measures does not correspond to the measure-by-measure descriptions in the plan.
- Many promising measures are listed in Annex I and II of the NEEAP, but do not appear/or are not referred to in the body of the text, which makes the impossible to assess how the measures in the annexes relate to the overall strategy presented in the Plan itself.

Role of public sector

The NEEAP includes general information regarding the exemplary role to be played by the public sector and the effective communication of public sector actions to citizens and/or companies.

More detailed information about the actions envisaged has not been provided, especially with regard to public procurement measures as listed in Annex VI of the Directive.

The NEEAP includes information regarding the requirement to facilitate and enable the exchange of best practices between public sector bodies, but no detailed information has been provided about how this will be achieved.

Provision of information and advice

The NEEAP states that the Energy Efficiency Act is the main information measure, especially as it relates to expanding the functions and changing the structure of the Energy Efficiency Agency. However, no concrete implementing measures related to information provision are described in the body of the text of the NEEAP. There are a number of promising measures related to the conditions for market operators to provide more information and advice to final customers on energy end-use efficiency listed in Annex I and Annex II, but since these are not referred to in the text nothing is known about their implementation and assessment is therefore not possible.

Conclusion

Whilst the Plan presented by the Bulgarian authorities contains the compulsory elements required by the Directive, more detailed information about the measures envisaged and their anticipated energy savings would have been necessary to properly assess the realism of the Plan. The NEEAP appears to be more of a collection of separate measures rather than a coherent Plan with strategic outlook. Furthermore, in some cases the measures described appear inadequate to reach the sectoral targets, especially in the tertiary and transport sectors.

The coverage of the period of 2008-2010 is inconsistent with the provisions of the Directive. Stronger provisions on the role of the public sector are also needed for the Plan to be in line with the Directive.

CYPRUS

General evaluation

The National Energy Efficiency Action Plan of Cyprus clearly commits to a 10% national energy savings target in 2016 and 3% in 2010. The NEEAP complies with the period 2008-2016. The target has been calculated according to the provisions of the Directive, and it clearly excludes energy use in undertakings covered by the Emission Trading Scheme and military operations. The strategy presented by the Cypriot NEEAP is clear, coherent and realistic.

- The priorities of the Cypriot NEEAP are measures in buildings and transport: two thirds of the estimated savings expected in 2016 come from the residential sector and 16% from transport.
- The NEEAP presents complementary measures (legislative measures, financial aid, horizontal, "soft" initiatives) that cover all major sectors except agriculture. The distribution of the expected savings is in accordance with the indicated priorities: buildings and transport.
- Most of the measures appear realistic, savings estimates are indicated most of the time, including basic assumptions and/or a description of the history of the measures. However, assumptions that would clearly indicate the expected achievement of energy savings, as well as the scope of the measures, are often not available limiting the degree of assessment that is possible.
- A number of measures, mainly in the residential and transport sectors, are rather ambitious (e.g. a measure to distribute over 1,500,000 CFLs to households by 2016, which translates into about 5-6 CFLs per household). The NEEAP seems to be overambitious with respect to certain measures: for instance, subsidies for a number of environmentally friendly vehicles is supposed to e be 3-5 times higher than it has been before.
- A balanced ratio of national initiatives (mainly financial measures and information dissemination) and measures that implement Community legislation. The approach taken has been to build on a few essential measures addressing EPBD and CHP and continuing governmental financial support that are cost effective and have high savings potentials.
- The Plan includes a large proportion of measures that were launched before 2008 and indicates the timeframe of measures until 2020. More than half of the 26 measures are early actions, but most of them have been running for only a few years and ,ay be revised and launched as updated schemes in 2010. This would allow the Member State to continuously improve and strengthen its strategy.

Summary of strengths

- The NEEAP is coherent and clear.
- Ambitious plan, with an overall ESD-target of 10%. It is noted that the sum of the savings estimates from individual measures is about twice as high as the targets.
- Clearly set priorities: for buildings, where large potentials exist because of the absence of building codes prior to 2007, and transport, which is the sector with the highest energy use and the largest potential, mainly due to the obsolete and underdeveloped public transport system.
- Multi-annual support scheme for investments in energy efficiency.
- Many existing measures providing a strong base upon which to build. Furthermore, many of these measures are to be revised in 2010 with the view to improving them based on actual experience. Combination of legislative, financial and information measures.
- The Action Plan for Green Public Procurement takes an integrated approach and has been identified as a good practice. It combines legislative, information and budgetary instruments to promote and ensure greener procurement of products, appliances, buildings, transport, water, foods, and materials.
- Strong focus on the exemplary role of the public sector.

Summary of weaknesses

- The expected savings per measure might in some cases be overestimated.
- While the measures are planned and developed based on previous experience (many of them are early actions that will be revised in 2010), they often seem overly ambitious and possibly unrealistic, unless cost-effectiveness of the measures is not an issue.
- A slight inconsistency exists between the summary list of measures and the detailed description contained in the text. For example, a measure on energy certification of homes and other buildings from 2009 is described in the NEEAP, but not listed in the summary.

Role of public sector

The exemplary role of public sector is clearly stipulated in the description of measures in the tertiary sector. Four of the provisions for public procurement, as put forward in Annex VI of the Directive, are incorporated in the Public Procurement Action Plan and in other tertiary sector measures. Communication to stakeholders, including traders and industry, and suppliers about actions and the role to be played by the public sector is planned in the Public Procurement Action Plan. The exchange of experience on energy efficiency practices is set as an objective in the Public Procurement Action Plan. However, currently no measures are foreseen to address this objective, but they may be expected to be dealt with in the 2010 revision. Awareness-raising activities among civil servants are foreseen in the horizontal measures.

Provision of information and advice

Several measures are aimed at ensuring greater efforts in the provision of information and advice to final customers on energy end-use efficiency. However, the Plan does not show how the appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency are to be created and established.

Conclusion

The NEEAP submitted by Cyprus presents a coherent and clear strategy, substantiated by an appropriate selection of relevant measures, which are in the spirit of the Directive and most of them are also well described. The calculation of the target is in line with the requirements of the Directive.

The savings estimates add up to about twice the ESD-target. However, the calculation of the energy savings for individual measures should be clarified, as they in many cases appear overestimated. Moreover, the assumptions upon which the measures are based are either not known or seem exaggerated. Nevertheless, it seems likely that the roadmap drawn up for reaching the targets overall is realistic.

The measures and expected savings are balanced among the sectors according to potentials and priorities. The NEEAP is balances Community and national measures and early actions and new initiatives. Cyprus foresees that half of the measures of its NEEAP will be reviewed and revised in 2010.

Overall, the Plan seems realistic and the intermediate target is also realistic and consistent with the overall national indicative target.

CZECH REPUBLIC

General evaluation

In its National Energy Efficiency Action Plan the Czech Republic has committed to a 9% national energy savings target in 2016. The intermediate target is 1.6% in 2010. The NEEAP is very brief and does not provide an overall view of a strategy. Some parts also provide contradictory information. The NEEAP gives the impression of randomly selected and presented measures, which taken together do not represent a coherent or realistic strategy with the view to attaining the overall ESD-target. The NEEAP complies with the 2008-2016 period. The target has been calculated in line with the requirements of the Directive.

- The NEEAP covers major end-use sectors, but the transport sector seems rather neglected. The NEEAP provides the targeted share of savings by end-use sector. The largest amount of savings is expected to come from the industrial and transport sectors.
- The measures are listed in a table by end-use sectors, but are not further developed or described in the text. A disorganized description of measures is provided per fuel type in the main text, but they do not clearly correspond to the summary list of measures.
- Most of the measures are early actions and appear to be realistic. Important early actions include mandatory audits and support for the provision of energy services. New measures are mostly concerned with the implementation of EPBD and ecodesign.
- There is a good balance between the number of national measures (e.g. the PANEL programme and other support schemes, and the promotion of ESCOs) and measures implementing Community legislation (mainly EPBD, energy labelling and ecodesign).
- The NEEAP relies on traditional regulatory and financial measures.

Summary of strengths

- The targeted savings are not only divided according to end-use sectors, but also according to fuels, which can be expected to facilitate the monitoring of the achieved savings. For this purpose however, more clearly described inter-linkages between the measures and the expected savings would be needed.

Summary of weaknesses

- The NEEAP is fragmented, presented as a list of actions, legal acts, and measures that do not necessarily add up to an overall strategy.
- The amount of energy savings is provided by sector and fuel type. The foreseen changes and activities are described briefly under the different fuel types, but these do not correspond to the individual measures outlined in the summary list. As for individual measures, very little or no information is provided in the NEEAP in terms of content, timeframe, responsible bodies, budget or expected savings.

- The emphasis on the role of the public sector is missing.
- Measures often seem to overlap, which represents a real risk of double counting. This risk is not acknowledged and no method has been put forward in the plan to deal with such effects.

Role of public sector

No special measure fulfilling the requirements of Art. 5(1) of the Directive, on the exemplary role of public sector, is included. Measures aimed at communicating energy efficiency to citizens and/or companies and exchanging experiences among public bodies are also missing. Energy efficiency in public procurement is not mentioned, and the NEEAP makes no reference to any of the public procurement measures from Annex VI of the Directive

Provision of information and advice

Only two measures are planned to increase the availability of information to final customers: financial support is provided for education and consulting. These measures appear only in the summary table without further details on the measures and their implementation being provided elsewhere in the text. The measures seem insufficient with regard to satisfying the requirements of Article 7.2. Moreover, no information has been provided regarding the creation of conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

Conclusion

The timeframe of the NEEAP and the calculation of the target meet the requirements of the Directive. The attainment of the targets however appears doubtful given the measures proposed. The measures suggested are either not described at all, or the descriptions are vague and brief making them impossible to assess. Information on implementation provisions are absent.

The first NEEAP of the Czech Republic cannot be considered to provide a strong basis for the planning and implementation of end-use energy efficiency improvements. The measures listed do not form yet a coherent and realistic strategy. Furthermore, the NEEAP does not fulfil the basic provisions on the public sector and the availability of information to end-users. The measures could possibly deliver the target in 2010, but the realism of attaining the 9% savings target in 2016 is questionable.

DENMARK

General evaluation

The Danish National Energy Efficiency Action Plan was adopted by the Danish Parliament in September 2005, prior to the adoption of Directive 2006/32/EC. It covers the period 2006-2013, instead of 2008-2016. There are no specific targets set for 2010, or 2016: instead an annual savings target of 7.5 PJ is indicated without explaining in percentage terms what this would mean when compared to annual final inland energy consumption. The calculation of the target is not described and data on final inland energy consumption is not included. The expected savings appear to equal about 1.15% per annum relative to finale inland energy consumption for the period 2006-2013, but it seems that energy use in installations covered by the Emission Trading Scheme has not been excluded as required when the savings target was calculated.

- The Danish NEEAP presents a balanced share of early actions and new measures. The NEEAP is based on the Danish Government Plan of 2004 and the political agreement between the political parties of June 2005.
- The NEEAP is particularly focused on heat savings. It emphasises a combination of good regulatory measures and a shift toward cost-effective, market based measures, and energy services.
- Most of the plan is focused on buildings, especially on measures designed to save heat, and mainly driven by regulation, with the implementation of the EPBD at the core and including a progressive target towards achieving passive house standard by 2015.
- The NEEAP introduces a mixture of actions arising from Community legislation as well as national initiatives.
- Good practices include the passive house standard, more frequent certification of the energy performance of buildings than what is provided for in the EPBD), mandatory implementation of cost-effective actions identified as part of the certification exercise and presented on the energy labels of existing buildings, saving obligation on distribution companies, as well as advanced metering and billing obligations.

Summary of strengths

- The Danish NEEAP has well-defined objectives and constitutes a strategic document. It indicates a high level of willingness to implement energy efficiency measures.
- The strategy is backed by a strong institutional support structures.
- The NEEAP gives the impression that it is based on sound calculations and background studies, however, the calculations themselves are not included and references to any background studies have not been included in the NEEAP.

Summary of weaknesses

- Some difficulties with reporting provisions: a savings target has not been clarified; no data on final energy consumption is included; and the target in place has been set for 2013 instead of 2010 and 2016. It has been noted that the NEEAP was adopted in 2005, before the actual adoption of the Directive.
- The NEEAP refers to "actions", but these appear as ideas listed without providing further details on the nature, scope, savings estimates, timeframe and implementation of the actions. This makes the NEEAP rather vague and the realism of these actions with regard to achieving the overall ESD-target is therefore hard to assess.
- For a large set of measures detailed information about the measures themselves or their implementation is lacking.
- The transport and agricultural sectors are not covered.
- No savings estimates by sector and/or measure are provided.

Role of public sector

The NEEAP has a number of policy measures targeting the public sector and in particular the municipalities. Many measures related to the public sector are exemplary and can be considered good practices. The Danish NEEAP also includes measures that can facilitate the exchange of practices among public bodies, as well as more effective communication with stakeholders.

Furthermore, an obligation is placed on government institutions to carry out procurement using energy-efficiency criteria and to implement all measures with a "reasonable" pay back time. However, details on this measure are not provided. Introduction of requirements regarding public procurement is planned. However, the measures listed in Annex VI of the Directive are not explicitly mentioned in the NEEAP.

Provision of information and advice

The NEEAP calls for increasing the level and quality of information available to end-users, as well as improving the coordination of such efforts to achieve transparency and accessibility. Qualitative targets are indicated, but concrete actions that would demonstrate how they are to be reached are not described in the NEEAP. Changing consumer behaviour through advance metering is included as a core action of the NEEAP.

The Plan provides for the establishment of obligations for market operators to provide more information and advice to final customers on energy end-use efficiency. However, the conditions and incentives that are being put in place to ensure that the main aim of this obligation will be fulfilled are not described.

Conclusion

The NEEAP submitted by the Danish authorities was adopted in September 2005, prior to the adoption of Directive 2006/32/EC. In principle, the Danish NEEAP represents a coherent strategy, but one that fails to cover certain ESD-reporting requirements. It only covers the period 2006-2013 and does not establish intermediate and overall national indicative savings targets calculated in line with Annex I. Denmark does, however, fulfil the provisions on public procurement and also seems to meet most of the requirements concerning availability of information and advice to final customers on energy end-use efficiency.

ESTONIA

General evaluation

The National Energy Efficiency Action Plan of Estonia is well organized and appears coherent. The NEEAP however only covers the period 2007-2013, which is not in line with ESD requirements. The NEEAP indicates a national energy savings target of 9% in 2016. Energy consumption in transport has been excluded from the basis upon which the target has been calculated, while the energy consumption of undertakings under the Emission Trading Scheme does not appear to have been excluded. The calculation of the target is not following well with the provisions of the Directive. No intermediate target has been set for 2010 or 2016: the NEEAP only sets one target, for 2013.

- Since the energy consumption of the transport sector has been excluded from the reference consumption upon which the target has been calculated, the indicated 9% target is in fact lower than it would have been if the methodology for calculating the target, as set in Annex I of the Directive, had been followed. Using Eurostat data, it was found that the target set by Estonia corresponds to around 7% of the average final inland energy consumption.
- While the background and objectives of all measures are described, information on how and when they will be implemented and their expected results are often vague.
- The descriptions of the 15 measures planned for the attainment of the 2013 target are vague and based on the information available, the set of measures appear weak. Actions are limited to a lot of 'soft' measures, sometimes based on the preparation of studies, schemes and plans. Their ability to deliver the targeted saving in 2016 is uncertain.
- On the other hand, based on the titles of the measures and the short descriptions of the actions substantiating the objectives, these measures have the potential of becoming strong implementing actions. Based on the descriptions given in the NEEAP, the majority of the measures are difficult to evaluate. Well-described and promising measures exist for the public sector.
- A number of actions either fall outside the scope of the Directive (e.g. generation side actions, international aid), or cannot be expected to deliver savings (e.g. preparation of studies).
- Often, there is lack of coherence between the description of the measure and the actions identified to achieve its objective.
- Balance exists between Community and national measures. The date of launch of measures is not indicated, but most of them seem to be new, additional measures.

Summary of strengths

- The Estonian NEEAP indicates a good grasp of the importance of the public sector role. The NEEAP includes measures on increasing energy audits, exchange of good practices, and support for small-scale energy projects in this sector.

- Strong focus on information dissemination, training and consultation. Clear emphasis on effectively communicating results and to significantly increasing information to end-users on energy efficiency.
- Estonia identifies barriers to energy efficiency improvement that the country is facing in its NEEAP and indicates a willingness to tackle the challenges and to remove the barriers.

Summary of weaknesses

- The NEEAP of Estonia fails to follow well a number of provisions of the Directive, most importantly the period it covers and the calculation of the target.
- The NEEAP of Estonia omits major sectors and areas of savings potential, such as buildings and transport.
- A number of measures that are not eligible under the Directive, for instance measures on the supply side, and a measure on "development of cooperation", under which the provision of international aid to third countries is planned.
- The budget timing is not in line with the deadlines of the measures in most of the cases.
- The public procurement obligations are not clearly described.
- No saving estimates are provided.

Role of Public Sector

The NEEAP includes a planned measure to promote energy efficiency in public procurement through an update of relevant legislation. There is no indication that the required two measures from Annex VI of the ESD are planned or will be implemented.

Measures exist to ensure the increased exchange of information and experience among public sector bodies, the exemplary role of the public sector, as well as dissemination of information to the public and other stakeholders.

Provision of information and advice

The obligations to increase efforts on information on energy efficiency to final customers have been fully met. Many measures to expand the information availability and expert training exist. The NEEAP also foresees that the results and experiences of implementation of measures will be widely communicated and disseminated.

Estonia has a measure that aims to create the necessary conditions for market operators to provide more information and advice to final customers on energy end-use efficiency; however incentives to ensure that this is brought about have not been set up.

Conclusion

The timeframe of the NEEAP of Estonia does not correspond to the obligation set out by the Directive, and the intermediate target is missing. The calculation of the target is incorrect and does not respect the provisions set down in Annex I of the Directive. Not following the methodology for calculating the target has also resulted in a target set for 2016, which is probably lower than 9%. While a target is established for 2016, the Plan only covers the period 2007-2013.

The focus of the NEEAP is on increased information, training and knowledge, which means few of the measures per se can be expected to deliver direct savings. Some measures seem promising on the face of it, but in the absence of implementing actions that go beyond the plans, studies and concepts described in the NEEAP it is unlikely that they will deliver savings. No savings estimates by sector or by measure have been provided.

The provisions for public procurement are not clearly laid out, as required by Annex VI of the Directive, but the exemplary role of the public sector is addressed and will be strengthened by several measures. Availability and dissemination of information to end-uses can also be expected to be significantly augmented by implementation of the NEEAP.

The set of measures presented in the first Estonian NEEAP does not yet constitute a realistic strategy toward reaching the 9% energy savings target in 2016.

FINLAND

General evaluation

In its National Energy Efficiency Action Plan Finland commits to a 9% national indicative energy saving target and a 3% intermediate target and presents a clear, consistent and comprehensive strategy towards achieving them. The targets appear to have been correctly calculated. The NEEAP covering page indicates that the Plan covers the period 2008-2010, but the NEEAP itself covers the period 2007-2016. Saving estimates are available for 2007, 2010, 2013 and 2016 complemented by background information and assumptions made when in calculating these. The 2010 saving estimates already exceed the intermediate target.

- More than 75% of the savings, for which 2016 estimates are available in the NEEAP, are derived from measures in buildings[58].
- The NEEAP is focused on national initiatives, but also considers implementation of Community legislation (EPBD, ecodesign).
- Measures are realistic; most of them are already existing measures that build on the extensive experience Finland has with the use of certain types of measures, notably voluntary agreements and energy audits.

Summary of strengths

- The NEEAP builds on extensive domestic experience in implementing energy efficiency policies, especially through voluntary agreements and energy audits combined with financial support schemes designed to achieve their objectives.
- The NEEAP takes a holistic approach. It contains comprehensive packages of measures (legislative, fiscal, financial and information measures).
- A comprehensive package of transport measures is planned that combines energy efficiency of vehicles with behavioural action and actions targeted towards sustainable modal splits.
- Saving estimates are available for measures accounting for a significant share of the total savings. The Finish authorities indicate that savings estimates are based on conservative assumptions.
- Involvement of energy suppliers in the provision of information and advice, metering, billing, training, and energy auditing.
- A strong role is assigned to the public sector: voluntary agreements and procurement practices are in place.
- Good practices: Comprehensive packages of voluntary agreements, energy audits and financial support are applied in a number of end-use sectors, and the use of voluntary agreements is to be expanded to an increasing number of sectors.

[58] Estimates are available for measures that are projected to bring savings equal to 71% of the 2016 target.

Summary of weaknesses

- The specific actions foreseen in the NEEAP for which savings have been estimated account for approximately 71% of the overall indicative savings target, with the shortfall likely to be met primarily through the implementation of a new extensive energy conservation agreement scheme.
- A few measures appear to be outside the scope of the Directive: fuel switching to RES in non-domestic sector and biofuels. A few actions may also be targeting ETS companies.
- Clarification is needed on whether energy tax reduction information is provided for information purposes or if it is intended as an energy efficiency improvement measure.
- The front page indicates the NEEAP only covers 2008-2010 and the intermediate target is only mentioned in the Introduction. Nevertheless, the NEEAP presents a coherent and realistic strategy towards both the intermediate and the overall targets, so the above are considered minor issues that should be corrected.

Role of public sector

Municipalities are expected to sign a new voluntary energy efficiency agreement scheme (2008–2016), which includes – among other provisions – adopting a minimum savings target of 9%, implementing measures to achieve the savings target and submitting annual reports on performance and impacts of measures. The agreement system contains elements that would address all the mandatory provisions on public procurement set out in Annex VI to the Directive.

The NEEAP gives little indication about action proposed to facilitate and enable the exchange of best practices between public sector bodies. Regarding effectively communicating the exemplary role of the public sector to citizens and/or companies, this is one of the obligations imposed on municipalities signing an energy efficiency agreement with the government. The agreement also stipulates that municipalities must cooperate with the media and organisations responsible for promoting energy savings and organise exhibitions and other events for the purpose of conveying information to citizens and communities.

Provision of information and advice

The NEEAP includes good measures related to the provision of information, advice and training. Appropriate conditions have been established for market operators to provide more information and advice to final customers on energy end-use efficiency through energy conservation agreements with the energy sector (1997-2007), new agreements with tertiary, industry and public sector (2008-2016), consumption monitoring, customer advice, communications, campaigns and printed materials. .

Conclusion

The Finish NEEAP presents a clear, comprehensive and realistic strategy towards meeting the overall ESD-target. The package of measures is comprehensive and realistic, characterised mostly by ongoing activities. It places a strong focus on buildings measures and contains a extensive package of transport measures that combines vehicle energy efficiency with behavioural action and actions aimed at achieving sustainable modal splits. The NEEAP has strong provisions related to the public sector and information provisions.

A few measures appear to be outside the scope of the Directive, namely fuel switching to RES in the non-domestic sector, the promotion of biofuels and an unclear role of energy taxation. Their role of these measures should be clarified. The NEEAP is said to only cover 2008-2010 (front page), but the NEEAP presents a clear, consistent and comprehensive strategy towards both the intermediate and overall targets.

FRANCE

General evaluation

The National Energy Efficiency Action Plan of France indicates a commitment to a 9% national energy savings target for 2016, approximately 12 Mtoe, and an intermediate target of approximately 5 Mtoe in 2010. The NEEAP states that the target has been calculated according to the ESD methodology. France has provided final inland energy consumption data for the years 2000, 2002, 2003, 2004 and 2005 which is not in strict accordance with the provisions of the Directive: information in respect of a period of five consecutive years should have been provided and used as a basis for calculating the target. The intermediate target is only stated as estimated total savings (with some approximation), but not as a percentage of the reference consumption.

The target calculation is not described in detail, the NEEAP only indicates that the energy consumption outside the scope of the Directive has been excluded, which means it is impossible to verify if 12 Mtoe equals 9% of the average final inland energy consumption for the five-year period mentioned above, and whether the national indicative energy savings target has been calculated in accordance with the provisions of Annex I of the Directive.

The timeframe of the NEEAP corresponds to the requirement set by the Directive with measures covering the period 2008-2016. However, the NEEAP only has one clear indication of the 2010 and 2016 targets.

- The NEEAP includes measures in four main sectors and a set of horizontal measures. The agricultural sector is indirectly covered by a cap-and-trade scheme for CO_2 in non-ETS sectors.
- France seems to have a solid commitment to energy efficiency activities. The proposed measures are at different stages (ongoing or planned) and include a broad set of instruments and mechanisms**:** demand side management, regulations, taxation, market-based instruments, measures supporting the exemplary role of the public sector, support for research and innovation, and awareness-raising activities.
- The proposed measures are realistic and the legal framework that has been put in place supports the implementation of the proposed NEEAP.
- The NEEAP provides detailed information about the monitoring and verification of energy savings and specifies that the common monitoring methodology will be top-down; a bottom-up methodology will be applied to the white certificates scheme.
- A significant number of measures focus on the transposition and implementation of Community legislation. Almost all national measures have been design to complement and ensure proper implementation of Community legislation.
- A significant number of early actions that are still ongoing are included. The proposed new measures are aimed at strengthening already existing measures.
- Several innovative measures are proposed, such as a cap-and-trade scheme for CO_2 in sectors not covered by the EU ETS (transport, construction, agriculture and forestry, waste) and the sustainable development account for energy saving activities in the

housing sector. The White Certificates scheme introduced in 2006 also has the potential to be a powerful energy efficiency instrument: the NEEAP indicates that it will be extended.

- A potentially good practice with an innovative approach is the Environmental Round Table, an on-going initiative what brings together the State, the regional authorities and civil society representatives in order to define a roadmap for ecology and sustainable development. Its overall aim is to elaborate and reach consensus on an action plan of concrete, quantifiable measures. If repeated and action plans proposed by this forum gets adopted and successfully implemented, the Round Table could contribute significantly to maintaining energy efficiency high on the political agenda and to fostering the right policy environment for long term sustainable development.

Summary of strengths

- The NEEAP presents a good combination of measures focused on the transposition and implementation of Community legislation and additional national measures complementing these. It is balanced in terms of reliance on early actions and planned new measures.
- The NEEAP provides a good coverage of all main sectors, with a specific focus on residential and tertiary buildings.
- The NEEAP features a range of policy tools: regulatory and legislative (dominant), financial incentives, taxation, market-based instruments, promotion, information and educational activities, and support for research and development.

Summary of weaknesses

- The NEEAP lacks a coherent structure, also because it mixes energy and general environmental measures.
- The establishment of an intermediate and overall savings targets is not fully in line with the methodology set out in Annex I to the Directive. The target calculation is not described in detail, it is only indicated that the energy consumption outside the scope of the Directive has been subtracted.
- The timeframe of the NEEAP corresponds to the requirement set by the Directive with measures covering the period 2008-2016. However, the NEEAP only has one clear indication of the 2016 target and the approximate absolute amount of savings required.
- Apart from the White Certificate Scheme, the NEEAP does not include any indications of the relative importance of the action/instrument with regard to the attainment of the savings target. The NEEAP does not indicate expected savings per sector /or per measure.

Role of public sector

A Prime Minister's 2005 Circular refers to and strengthens the exemplary role of the state with regard to saving energy, announcing also a set of measures to be implemented at this level.

The exemplary role of the public sector is clearly reflected in the energy management programmes coordinated by regional and local authorities and by measures on improving energy performance of public buildings as was mentioned above.

A National action plan for sustainable public procurement is in force and Guidelines for public purchasers have been elaborated in order to encourage them to manage energy savings and foster sustainable development.

Four of the eligible energy efficient public procurement measures from the Annex VI of the ESD are assumed in the NEEAP. The exemplary role of the public sector is foreseen to be communicated thorough several actions presented in the NEEAP.

However, there is little information on the measures foreseen to facilitate and enable the exchange of best practices between public sector bodies, nor on measures to effectively communicate the exemplary role and actions of the public sector to households and the private sector.

Provision of information and advice

The French NEEAP has strong information provisions. Through the provisions of its Programme Law of 13 July 2005 improvements in consumer information on energy and the environment are foreseen. Public awareness and education are encouraged through the implementation of ongoing information campaigns and the introduction of energy issues into the school curriculum. In 2003, within the framework of the Climate Plan, the Government launched an awareness-raising campaign on climate change.

Companies selling energy or energy services are required to introduce promotional messages on energy savings in their marketing and advertising materials.

Conclusion

The French NEEAP meets the reporting requirements set by the Directive only partially Taking into consideration the Environmental Round Table, as a 'laboratory' for the elaboration of legislative proposals, measures and initiatives aimed at achieving sustainable development, existing legislation and already implemented energy-efficiency measures, one can consider the NEEAP of France to be realistic with the view to achieving the overall ESD-target.

However, the NEEAP lacks a coherent structure, partially due to the mixing of energy and general environmental measures, and fails to provide certain information specifically required by the Directive, such as clear indications of established savings targets and the basis upon which they have been calculated.

GERMANY

General evaluation

The National Energy Efficiency Action Plan of Germany introduces a 9% target for 2016 calculated based on provisional energy consumption data for the base period 2001-2005. The NEEAP covers the period 2008-2016. The exact value of the intermediate target needs to be confirmed[59]. The energy consumption in undertakings covered by the Emission Trading Scheme has not been excluded from the annual final inland energy consumption, which is not in line with the methodology set out in Annex I to the Directive[60].

- The NEEAP presents a coherent strategy with clear priorities: the residential sector accounts for 40% of the savings from additional state-induced measures, while transport accounts for approximately one third of the savings from additional state-induced measures.
- The NEEAP demonstrates the continuity of certain types of policies and measures and includes measures that complement each other, which can be expected to increase their outreach and impact.
- The NEEAP contains a financial provision that all programmes, measures and instruments presupposing financial expenditures by public authorities is subject to such financing being provided.
- The NEEAP relies on savings from early actions, which accounts for almost half of the 2016 target and almost three quarters of the intermediate target[61]. It is not clear from the Plan what measures contribute to the savings from early action, which accounts for 375 PJ in both 2010 and 2016. These measures may possibly be the ones very briefly listed in tables on pages 19-40, but this needs to be clarified.
- The saving estimates provided in the NEEAP are realistic but in certain cases there might be possible overestimates, most importantly concerning the information measures in the residential sector and the 2010 savings from the technical measure in transport. The assumptions underlying the estimation of savings from dynamic updates of minimum efficiency performance requirements are to be clarified (all measures are entitled European Top Runner Strategy).
- There are some possible overlaps between measures in the NEEAP which may result in double counting of savings if care is not taken to avoid it.

---

59 The NEEAP indicates an intermediate target of 510 PJ (375 PJ early action and 135 PJ additional state-induced measures), which equals to 5.5% of the total final energy consumption (energy consumption in ETS installations included, as in the NEEAP). On the other hand in the summary of the NEEAP an intermediate target of 135 PJ is indicated, e.g. only additional state-induced measures. In addition, the calculation of the intermediate target differs from the calculation of the national indicative target (the latter in accordance with Annex I)

60 Note has been taken to the reference made in the German NEEAP to the 'exceptional features of Germany's energy statistics'.

61 If the intermediate target is taken to be 510 PJ as indicated on p. 17 of the English version of the NEEAP

- The NEEAP provides a balanced coverage of national and Community measures and includes a number of promising measures that has the potential to further the successful implementation of Community legislation in Germany.
- The NEEAP features a number of potentially good practices that capture the spirit of the Directive, including contracting (assumed to be energy performance) and subsidised energy audits.

Summary of strengths

- The NEEAP establishes a coherent set of priorities (buildings, SMEs, technical measures related to vehicles, information and motivation of final consumers).
- The NEEAP demonstrates policy continuity and includes complementary measures in different sectors.
- The NEEAP contains measures that support the smooth implementation of certain provisions of Community legislation (e.g. information campaign to accompany the introduction of building certification).
- The NEEAP contains a number of potentially good practices (see above).
- The NEEAP includes a number of good information measures and also focuses on applied research to facilitate the introduction of new technologies.

Summary of weaknesses

- Ambiguous definition of the intermediate target.
- Unclear what measures contribute to the 375 PJ savings from early action. In addition, based on the information available, it is not possible to establish if only savings generated in the period 2008-2016 have been considered.
- ETS not excluded from the calculation of the indicative national target.
- Only savings from additional state-induced measures are estimated.

Role of Public Sector

The exemplary role of the public sector is clearly mentioned and there are a number of good measures aimed at the public sector. However, the specific requirements placed on the public sector to comply with the provisions of the Directive are not clear, in particular as it relates to the list in Annex VI. The NEEAP does contain information regarding the requirement to facilitate and enable the exchange of best practices between public sector bodies, but it contains no information regarding the effective communication of public sector actions to households and the private sector.

Provision of information and advice

The NEEAP includes a number of good information and training measures and also places a focus on applied research to facilitate introduction of new technologies.

The NEEAP contains one measure related to electricity utilities supporting demand-side projects, primarily focussed on informing final electricity and gas customers of on energy saving installations and energy saving behaviour.

Conclusion

The NEEAP provides an appropriate strategy towards the 9% target, with a coherent set of priorities. It demonstrates policy continuity and includes complementary measures in different sectors. The NEEAP contains measures that support the smooth implementation of certain provisions in Community legislation in Germany, as well as a number of potentially good practices that capture the spirit of the Directive. It contains a financial provision for financing of all programmes, measures and instruments in the NEEAP, which presuppose financial expenditure by public authorities.

Nevertheless, a few issues need to be clarified to enable proper assessment of the potential of the NEEAP to deliver the target. First, the energy consumption of installations covered by the Emission Trading Scheme needs to be excluded from the reference final inland consumption used to calculate the national indicative target and the value of the intermediate target needs to be clarified. Second, the measures that contribute to early action savings estimates need to be identified. It needs to be established if only the savings generated in the period 2008-2016 have been considered. Finally, the assumptions behind estimating the savings from a few measures need to be clarified to avoid overestimates, notably some information measures in the residential sector and the 2010 savings from measure "Accelerating technical development".

GREECE

General evaluation

The Greek National Energy Efficiency Action Plan has been prepared in respect of the 2008-2016 period, sets a 9% ESD target in 2016 and an intermediate target of 2.8% in 2010. The savings target has been calculated in accordance with the provisions of the Directive. The final inland energy consumption was used as basis, from which the energy consumption by military forces and installations under the ETS has been excluded.

The NEEAP represents a coherent, clear and forward-looking strategy with a set of realistic measures reflecting the country's saving potentials.

- The measures cover major sectors and end-uses, and about one-third are cross sectoral or horizontal. On an end-use sector basis the largest share of savings in 2016 is expected to come from the transport sector. Cross-sectoral measures, mainly on buildings and in industry, are expected to deliver higher savings in total terms than the transport sector in itself. Thus the tertiary and residential sectors appear to be at least as important end-use sectors as transport. No measures are aimed at agriculture, which can be explained by its modest contribution to final energy demand (7%).
- The share of expected savings is in line with the energy saving potentials (also analyzed in the NEEAP) and also reflects the relative share of different sectors in final consumption
- Measures appear to be realistic. For the most part, savings estimates, financing source and budget are indicated. However, the assumptions underlying the savings estimates are unclear and rather basic, thus do not allow an evaluation of whether the delivery of the savings is feasible. Monitoring is not described, but the Greek Action Plan includes a measure to establish and improve data collection and analysis.
- The sum of the estimated savings from measures, overshoot the declared target, even though estimates for a number of measures are not included. A study estimating the expected savings for these remaining measures were still under way at the time of NEEAP submission.
- A few measures concerning fuel switching and energy savings expected from installations under or partly covered by ETS, where there is a lack of clarity with regard to which savings are ETS relevant and which are not, are fall outside the scope of the Directive.
- The majority of the measures are new and national. References are made to Community energy efficiency legislation, while only a few measures are devoted to the actual implementation of these obligations nationally. Many measures go beyond the provisions of Community Directives.
- A large share of the measures across all sectors can be considered innovative and/or best practice. These include: well-designed voluntary agreements for tertiary buildings, industry and transport; refurbishment of social housing; the wide use and diverse support for market-based tools (ESCOs and provision of energy services); the creation of energy and environmental management centres in business parks. The Plan

also contains many good practices in the transport sector which promises to successfully influence the development of clean and energy efficient transport. Such measures include eco-driving, which will become a mandatory component of the driving license curriculum and test, integrated mobility plans, and complex reshaping of public transport systems.

Summary of strengths

- Very clear and coherent strategy.
- The Plan is based on a thorough and well described analysis of the actual final energy consumption, demand forecasts and savings potentials.
- The proposed measures are well described, including timeframe, estimated savings and the budget allocations are, in most of the cases, indicated..
- The Plan covers all the main final energy consuming sectors (residential, tertiary, public, transport, industry), and the measures' contribution to total energy savings reflects the estimated savings potentials.
- Contains comprehensive measures, including a set of complementary actions that are expected to reinforce each other.
- Includes a large number of innovative or good practices.
- Considerable focus on market tools, with promotion and support for ESCOs, Third Party Financing and Energy Performance Contracting, including in the public sector.
- Strong measure for intelligent metering for gas and electricity (including disaggregated consumption information by each appliance/end-use) in all new buildings and gradually in existing buildings. This measure is to be combined with information campaigns.
- A number of measures are designed to provide support for and improve the quality of the implementation, monitoring and verification of the NEEAP.

Summary of weaknesses

- A few measures fall outside the scope of ESD, relating to the promotion of the integration of natural gas and LPG (fuel switching), and the role of the transport measure, M5: With regard to the incentives for the replacement of old medium and heavy duty vehicles, is energy efficiency relevance is not clearly described. .
- It does not include measures to clearly communicate the exemplary role of the public sector to the public.
- The assumptions behind the energy saving estimates are often unclear.

Role of Public Sector

It appears from the NEEAP that there are measures related to the public sector that at least partially meet the six public procurement provisions set forth in Annex VI of the Directive. However all six provisions do not seem to be fully covered and/or clearly described.

To fulfil the exemplary role of the public sector is a clear objective of the Greek NEEAP and a number of measures address this objective; however the Plan does not include measures to communicate the exemplary role to citizens and/or companies. Furthermore, no actions to facilitate the exchange of experiences on energy efficiency practices in the public sector are planned.

Provision of information and advice

There are many and strong informational measures throughout the NEEAP. These appear as separate measures as well as integrated or supporting activities in more complex measures. As a result of NEEAP implementation, the level and effectiveness of information dissemination to the general public can be expected to increase. However, the NEEAP does not appear to include information regarding the establishment of appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

Conclusion

The NEEAP of Greece presents a coherent and clear strategy that identifies the areas for action on a professional level and presents measures that are specifically designed to capture energy saving potentials. It meets the requirements of the Directive with regard to target calculation and time period covered. The descriptions of the measure are clear, substantiated by actions, saving estimates and financial provisions. They seem realistic and the achievement of the target appears to be feasible. The NEEAP includes many best practices and innovative measures.

The NEEAP fails to meet some of the public sector provisions, in particular there are no measures aimed at effectively communicating the exemplary role of the public sector to citizens and companies and whether the Plan is in compliance with Annex VI of the Directive is unclear. There are many informational measures and actions, and the level and effectiveness of information dissemination to the general public can be expected to improve as a result of NEEAP implementation. However, the NEEAP does not appear to include information regarding the establishment of appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

HUNGARY

General evaluation

The National Energy Efficiency Action Plan of Hungary introduces a 9% national energy savings target in 2016 and the target is calculated in line with the provisions of the Directive. The NEEAP is unclear on the intermediate target: contradicting calculations of the intermediate target appear throughout the NEEAP.[62] Regarding the overall savings target, it is considered to have been calculated correctly. The NEEAP is in respect of the period 2008-2016.

The NEEAP features a collection of separate measures in all end-use sectors except for agriculture, but these are hard to collate in a coherent strategy towards the target.

- The NEEAP has no clear priorities in terms of end-use sectors and uses. While it appears to place a focus on residential buildings (continuation of a number of existing measures), the largest share of savings is expected to come from measures in industry.
- The strong expectations concerning savings from industrial measures, the fact that many industrial measures include actions that fall outside the scope of the Directive, and the fact that the sum of the lower values of expected savings from individual measures equals less than half of the 2016 ESD target represents a risk that the NEEAP when implemented will fall short of the target.
- Often sufficient information to assess the ability of a measure to deliver the declared amount of savings is not provided. In general there is no information on the methods used to calculate energy savings from measures, but overestimates and overlaps are inferred on a number of occasions.
- The NEEAP introduces a large number of (smaller scale) new measures, but the majority of savings come from early action. The majority of measures are national.
- Good practices from the NEEAP include emphasis on refurbishment of residential buildings and introducing mandatory reporting on energy use and energy managers in industry. The NEEAP contains a few information/education/training actions, which – with proper implementation – could become good practices. The NEEAP makes reference to ESCOs and Third Party Financing, but the level of information on the two respective measures is insufficient to consider whether they could potentially become good practices.

[62] E.g. on p. 12 a target of 1773 GWh is stated for 2010 (corresponds to a total of 1% of average consumption in the reference years), on p. 13 a 1% annual target is declared, while Appendix I states a 2600 GWh target for 2010 (which is equivalent to a total of 1.5% of average consumption in the reference years).

Summary of strengths

- A link is established to the financial sources available for energy efficiency from the Cohesion Policy Funds.
- Continuation of a number of existing programs.

Summary of weaknesses

- Contradicting values for the intermediate savings target.
- Lack of focus, unclear priorities, and in many cases the timeframe for the implementation of measures is vague.
- No actions are aimed at new buildings in the residential and tertiary sectors.
- A number of measures in the industrial sector are entirely or partially outside the scope of the Directive. At the same time the largest share of savings is expected to come from this sector.
- On balance there seems to be too many information measures relative to other measures and very high expectations are placed on savings from information measures, which is problematic since general information measures seldom result in direct savings.
- No information about the methods used to calculate energy savings from measures, and possible overestimates and overlaps are not indicated.

Role of public sector

The NEEAP includes little information regarding the exemplary role of the public sector. While a number of measures target the public sector, these are limited to investment subsidies to support the implementation of energy efficiency improvements, or are measures of a rather 'soft' nature (training, procurement guidelines and the like). Two measures introduce financial instruments for energy savings, but their descriptions are vague and concrete policy outcomes are unclear, hence assessment is not possible. It is considered that the NEEAP does not meet the requirements of Article 5 and Annex VI of the Directive.

The NEEAP includes no information regarding the effective communication of the role of the public sector to citizens and/or companies. In addition, the NEEAP includes no specific information regarding the requirement to facilitate and enable the exchange of best practices between public sector bodies, though it is noted that there is a general reference to local municipality training.

Provision of information and advice

The NEEAP introduces a number of information measures, but contains no reference to the establishment of appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

Conclusion

The NEEAP introduces a target for 2016 in line with the provisions of the Directive and covers the period 2008-2016. It establishes a link to financial sources available from the Cohesion Policy Funds and makes reference to ESCOs and support for TPF, but implementation details are lacking in the latter two cases).

A few major points need further elaboration. The size of the intermediate target should be clarified. Savings from measures in the industrial sector that fall outside the scope of the Directive need to be excluded. The impact of this exclusion on the overall achievement of the target should then be clarified. Often insufficient information is provided to assess the ability of a measure to deliver the declared amount of savings. Because the NEEAP relies strongly on financial mechanisms, the availability of funds needs to be demonstrated for those measures that do not rely on the Cohesion Policy Funds. The reasons for making no reference to energy performance of new buildings need to be established.

With reference to the above points and in particular the overestimation of savings in the industrial sector from non-ESD measures, and the fact that the lower values of the expected savings do not add up to the overall target, reaching the targets of the NEEAP is considered uncertain.

IRELAND

General evaluation

The Irish National Energy Efficiency Action Plan is based on the Irish Plan to reach a 20% reduction in energy demand by 2020 (33% for the public sector). The NEEAP establishes a 9% national energy savings target in 2016 and covers the period 2008-2016. The intermediate target in 2010 is 4.46%, one of the highest among all NEEAPs. Furthermore, the estimated savings from known actions, both existing and planned, amount to 12.5% in 2016, exceeding the indicative ESD-target. The expected savings from known actions in 2010 go slightly beyond the intermediate target.

The NEEAP indicates energy saving estimates until 2020. Whilst the methodology described in Annex 1 to the NEEAP on calculation of the indicative targets appears to be correct, no figures have been provided in the NEEAP as to the actual final inland energy consumption in the five base years.

- Industry, transport, residential and services sectors are covered by the NEEAP. More than half of the expected savings is to come from the residential sector and a quarter of all expected savings is to come from the transport sector.
- The NEEAP proposes measures to foster energy services, to use market-based mechanisms and to create a market for energy efficiency, which is in line with the Directive.
- Some of the measures are not in the scope of the Directive (mainly measures in the electricity supply sector). The industry sector is well covered, but it is unclear whether parts of the savings come from installations under the Emission Trading Scheme.
- Innovative measures include the Power of One information campaign and the Large Industry Energy Networks that involves large energy users in a voluntary network. Good practices include the Green Public Procurement Action Plan and measures aimed at energy management plans and standards for energy management.
- There is a good balance between national measures and Community measures, such as the implementation of the EPBD and energy labelling.
- The majority of measures are ongoing action, which have started recently. In addition, there are many important new measures. Most of these new measures are related to the buildings sector, the obligation on the public sector, use of advanced meters, the promotion of energy services, and transport.
- The NEEAP presents energy savings estimates for all measures without describing or identifying the methods used to arrive at them.

Summary of strengths

- The Irish NEEAP presents a coherent strategy using a range of instruments and measures and also aims at integrating energy efficiency in a number of other policy areas (e.g. spatial planning).

- Existing and planned measures are likely to achieve more ambitious savings than those committed to.
- All sectors are evenly covered; clear introductions on the status and aims for each sector are included.
- The exemplary role of public sector is clearly demonstrated and government has set a higher target for this sector, of 33% savings in 2020.
- There are strong measures in industry.
- The NEEAP presents an exemplary and innovative communication campaign. The Power of One campaign is an example of a very comprehensive multi-media campaign. It is well structured, targeted and designed and forms an integral part of the overall energy efficiency strategy.
- The NEEAP also addresses the cost effectiveness of measures.

Summary of weaknesses

- Some of the measures are not in the scope of the Directive, for instance network losses in the electricity supply sector.
- Some measures lack more detailed description, which makes them hard to analyse and assess.
- Savings per measure are hard to gauge. The NEEAP presents a summary table with estimated savings, but the titles of the measures in the table do not always correspond to those described elsewhere in the NEEAP or the cumulative savings of several measures are presented in the summary table.
- In the absence of descriptions of methodology and assumptions underlying savings estimates, the estimates are difficult to validate.

Role of public sector

Ireland has adopted an ambitious public sector savings target of 33% by 2020 and it NEEAP includes a range of measures aimed at promoting the exemplary role of the public sector. To achieve its target, it is establishing an inter-departmental, high level working group to draw up an action plan.

Green public procurement will be required of all public authorities, including municipalities. Guidelines will be introduced. By the end of 2007, only energy-efficient lighting could be purchased. A replacement programme is to be developed so that all street lighting and traffic lights will be energy efficient in the future.

Ireland supports exemplary design and energy management practices in the public sector via technical and economic feasibility studies and the implementation of energy efficient solutions. It will communicate its exemplary role via its national Power of One campaign, and mechanisms will be established to promote exchange of best practices and replication of good ideas among public sector bodies, at local, national and international level.

The NEEAP incorporates three measures from Annex VI of the Directive going beyond the provisions of the Directive in this area.

Provision of information and advice

The information and communication strategy presented in the NEEAP is very well-designed and described. The multi-media campaign "Power of One" is a well thought out strategy, encompassing different types and sources of energy; impacts of inefficient use in terms of costs to user, the economy and the environment; best practices at home and at work; using a broad array of communication channels – press, advertising, websites, road show, direct mail, utility bill inserts, school programmes, seminars and sponsorship, TV, qualification, accreditation and certification schemes, and so on. The communication strategy is well structured, targeted and designed and forms an integral part of the overall energy efficiency strategy, which promises to reinforce the impact of both the campaign itself and the other measures with possible important impacts on savings.

There is a programme to install smart meters in every household, which will contribute to creating appropriate conditions for market operators to provide more information and advice to final customers on energy efficiency.

Conclusion

The NEEAP of Ireland presents a coherent strategy using a range of instruments and measures and it is also aimed at integrating energy efficiency in a number of other policy areas (e.g. spatial planning). It sets a more ambitious target to be reached by this sector, by 2020, it covers all sectors and indicates the responsible implementing bodies. The savings from the various measures are described in detail and the commitment therefore seems clear and robust. An overview of the current situation in each sector is given, providing the necessary background to understand the strategy and measures presented in the NEEAP. The targets seem to be supported by the declared savings from existing and planned measures, although the methodology for calculating the saving estimates is not described. Some of the measures fall outside the scope of the Directive, for instance the measures in the electricity supply sector aimed at reducing network losses.

Overall the Irish NEEAP constitutes a well thought out strategy which seems realistic with regard to achieving the ESD target of 9% in 2016.

ITALY

General evaluation

The Italian National Energy Efficiency Action Plan sets an indicative energy savings target of 9.6% in 2016 and an intermediate target of 3% in 2010. The national energy savings target appears to have been calculated correctly and the NEEAP covers the period 2008-2016. The NEEAP provides a strong strategy for some end-use sectors (existing residential buildings), but is weak in others (transport).

- The major focus of the plan is on the residential sector, which is expected to contribute almost half of the total savings in 2016.
- Emission standards are the only transport measure Italy clearly commits to. This measure is expected to contribute around one fifth of the savings in 2016. Based on the information in the NEEAP, verification of whether this is a realistic expectation is not possible. The Plan includes a list of other promising measures in the road transport sector which are currently under discussion. Whether and which of these measures will actually be adopted is unclear and no saving estimates are provided for them.
- The NEEAP provides rigorous details about savings estimates from technical actions (such as window replacement, wall insulation in existing residential buildings, etc.). On the other hand, it has been difficult to clearly link policy measures described in the NEEAP with the technical actions for which saving calculations are provided. With the exception of expected savings in the transport sector and some relatively small overestimates, the savings appear realistic.
- The NEEAP puts a particular emphasis on economic instruments: fiscal incentives and white certificates. Fiscal measures, mainly tax deductions, have been secured in the 2007 Finance Act and provisionally in the 2008-2011 Economic and Financial Programming Document. The continued application of these tools beyond 2011 should be clarified.
- The NEEAP relies mainly on early actions[63] and there is a good balance between national initiatives and action implementing Community legislation.
- Innovative measures and good practices include the involvement of ESCOs in the residential sector and lighting measures in the tertiary sector. Lighting system certification could be a potentially innovative measure, however the NEEAP does not provides sufficient information to make that judgement.

Summary of strengths

- A range of very good measures aimed at the residential sector (existing buildings and household appliances).

[63] In the NEEAP the duration of has been stated as 01/01/2008-31/12/2016, which indicates that there is confusion between the duration of *policy actions*/*measure* as opposed to *the lifetimes of measures*.

- Comprehensive bottom-up calculations of savings from technical actions are provided, with adequate explanations of their underlying assumptions.
- The focus on fiscal and market-based instruments (tax incentives and white certificates) is clearly in the spirit of the Directive.

Summary of weaknesses

- No measures related to new buildings and limited reference to EPBD implementation.
- No measures related to the building envelope in the tertiary sector. Measures in the tertiary sector only cover heating installations, air conditioners and lighting.
- The role of the public sector is weak and insufficient to meet the requirements of the Directive.
- The Plan possibly overestimates the role of savings from Ecodesign with regard to the achievement of the intermediate savings target: The Implementing Measures setting minimum energy performance requirements currently being developed are unlikely to be fully operational much before 2010. Whereas the Ecodesign will be a strong driver to meet the 2016 target, it may not have a strong effect on efforts to meet the 2010 target.
- The Plan only clearly commits to one transport measure.

Role of public sector

The role of the public sector is not clearly addressed or described. Some measures in the tertiary sector do refer to the public sector, but no specific requirements related to the exemplary role of the public sector and/or concerning the measures provided for by Annex VI are included.

There is no information regarding how Italy intends to effectively communicate the exemplary role and actions of the public sector to citizens and/or companies. In addition, the NEEAP does not include specific information regarding the requirement to facilitate and enable the exchange of best practices between public sector bodies at the various levels of government.

Provision of information and advice

Information campaigns are mentioned on numerous occasions, but no specific details on their implementation or potential results or impacts are provided.

While the NEEAP makes no specific reference to the establishment of appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency, the white certificate scheme, which is referred to as a major policy tool in the Italian strategy, has a strong potential to meet this requirement, but how this potential can be harnessed needs to be clarified.

Conclusion

The Italian NEEAP sets an intermediate target of 3% in 2010 and an overall energy savings target of 9.6% in 2016. It presents a realistic strategy towards the 2016 target with a clear priority (residential sector). The NEEAP includes comprehensive bottom-up calculations of savings by type of technical action (or intervention). The NEEAP lists policy measures expected to support each type of technical action, but there is little specific information on implementing details of policy measures. The detailed overview of the impacts from the technical actions that are foreseen demonstrates strategic planning.

The NEEAP includes no measures related to new residential buildings and no measures related to building envelope in the tertiary sector with only limited reference to EPBD implementation. The role of measures aimed at improving the energy performance of new buildings in the NEEAP needs to be strengthened. In addition the rationale for not including any measures on the thermal envelope of buildings in the tertiary sector should be provided. The expectations placed on the Ecodesign Directive to deliver the intermediate target are probably unrealistic, thus the savings stemming from implementation of Ecodesign measures need to be shifted towards the final target.

It is unclear if the transport sector can deliver savings as expected, given that the Action Plan only includes one binding measure for this sector. The role of other potentially promising transport measures under discussion, which are listed but not committed to in the NEEAP needs to be clarified. The role of the public sector requires strengthening and the provisions of the Directive for this sector must be fully addressed. Measures to meet the provisions concerning communicating its exemplary role and actions and the exchange of good practices between public sector bodies need to be put in place.

LATVIA

General evaluation

The Latvian National Energy Efficiency Action Plan sets a national energy saving target of 9% in 2016 and 0.17% in 2010. It covers the period 2008-2016 and the measures and saving estimates extend to 2016, even though the title page refers to 2008-2010. The calculation of the energy savings target is in line with the provisions of the Directive and energy consumption by undertakings under the Emission Trading Scheme has been excluded.

The strategy appears clear and coherent, and as a package, seems realistic However, the descriptions of the measures are often unclear and provide little concrete information on what actions they would entail and how they will be implemented.

- The NEEAP presents a complex strategy with all sectors being addressed, including residential, tertiary, public, industry and agriculture, complemented by horizontal measures.
- The measures mainly combine information and financial instruments, with few regulatory measures.
- The dominant sector is the residential sector, and the majority of savings are expected to come from buildings.
- The majority of the measures are additional to the implementation of Community legislation and are mostly new measures, often starting in 2008-2009.
- Saving estimates are calculated and presented at a sectoral level and for financial measures also on a measure-by-measure basis.
- The saving estimates may occasionally be overestimated. However it is impossible to properly assess whether this is the case given the lack of implementation details, more precise information on content, scope and timing of the measures, as well as the underlying assumptions.
- On the other hand, the sum of the expected savings from individual measures as indicated in the NEEAP, would slightly overshoot the target.
- In addition to the measures that are expected to contribute to the overall target, Latvia presented a list of early actions in the introduction of the NEEAP. It seems that Latvia does not count the savings from the early actions included on this list towards the overall target.
- While the description of measures are lacking in details, the NEEAP does indicate sources of financing, level of expected public financing, and responsible implementation bodies.

Summary of strengths

- The Plan is well structured and clear.
- Good coverage of sectors, including agriculture.

- Savings estimates, public budget, sources of financing and responsible bodies are indicated.
- Though some savings estimates might be slightly overestimated, the sum of the expected savings is slightly higher than the overall target. In addition, the NEEAP presents a list of early actions whose impacts are currently not counted towards the 2016 target. Therefore, overall, the attainment of the target is realistic.
- Good sectoral coverage also with regard to information measures.
- Energy audits, information to end-users, and the demonstration of the role of the public sector with regard to the improvement of energy performance of buildings are examples of strong measures in the Latvian NEEAP, and these are combined with regulatory and financial initiatives which promise to reinforce and strengthen their impact.

Summary of weaknesses

- The NEEAP provides two lists of measures, however their role, interaction and contribution to the target is not clarified. On the one hand, an overview of early actions already implemented during the period 2000-2007 is included in the introduction. Savings from these early actions are indicated, although it seems unclear whether they are expected to count towards the 2016 target. It should be noted that it is unclear for which period these savings have been calculated. Based on the information available, it seems that the savings are given for the period 2000-2007. These savings would not be eligible toward the overall target, but it is of course possible that some of these early actions would still be generating savings in 2016 and therefore would be eligible. The other list includes measures that are planned to contribute to the target, and the saving estimates are provided for 2016.
- The descriptions of measures are in general fairly vague and the measures are not substantiated by actions, therefore the attainment of the objectives of separate measures is unclear, and the assessment of whether the individual measures are realistic with a view to reaching the target is not possible.
- While saving estimates are provided none of the underlying assumptions are explained. Based on the information available, it appears that some expected savings are overestimated.
- The Plan contains a long list of planned information measures. These measures are unlikely to deliver significant savings in 2016, firstly since many of them are to be implemented during 2009-2010 and secondly because direct impacts from information measures are difficult to assess and measure. Furthermore, more details would be necessary to assess and judge the expected effectiveness and potential impact of these measures.

Role of public sector

The Latvian NEEAP announces its plans to introduce two measures from Annex VI. Concrete details on implementation are however lacking making it impossible to assess their likely effectiveness or impact.

Latvia plans measures to provide for the exemplary role of the public sector. However, measures to communicate its exemplary role and actions to the citizens and companies are not described, and no measures to facilitate the exchange of experiences on good energy efficiency practices among public bodies are included.

Provision of information and advice

The Latvian NEEAP contains a high number of information measures, and with implementation of the NEEAP increased availability and dissemination of information and advice to final consumers can be expected. However, details on implementation and potential impacts are not elaborated making it impossible to assess how these measures will contribute to the achievement of the savings targets and fulfilment of the provisions of the Directive.

How the necessary conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency will be created has not been addressed.

Conclusion

The Latvian NEEAP presents a coherent strategy with measures covering all end-use sectors. The NEEAP is in respect of the period of application of the Directive and the saving targets have been calculated according to its provisions.

The residential sector dominates the NEEAP, and most savings are expected to come from buildings measures, mainly from improvement to the heating system. In some cases savings estimates may be slightly overestimated, but proper assessment is not possible due to the lack of details on underlying assumptions and implementation of the measures. The NEEAP provides two lists of measures, however their role, interaction and respective contributions to the target is not clarified.

There is a commitment to comply with the provisions for public procurement, however in the absence of description of measures or implementation details it cannot be evaluated whether the public procurement provisions will be met. The exemplary role of the public sector is highlighted, however not clearly communicated.

The NEEAP contains a high number of information measures aimed at end-uses in almost all sectors. No incentives and conditions are set forth for market operators to provide more information and advice to final customers on energy end-use efficiency.

Overall, the NEEAP of Latvia seems to meet most reporting provisions of the Directive and the strategy can be considered realistic with regard to reaching the targets, although a lack of details on implementation and impacts of various measures impedes firm conclusions.

LITHUANIA[64]

General evaluation

The National Energy Efficiency Action Plan of Lithuania introduces an overall national indicative energy savings target of 11% in 2016 and an intermediate target of 1.5% in 2010. The calculation of the target is clearly described and in line with provisions in Annex I of the Directive. The NEEAP covers the period 2008-2016, but does not constitute a clear and coherent strategy towards the targets. Most of the measures focus on residential and public buildings.

- The descriptions of the measures are very limited making proper assessment as to their potential to deliver savings and contribute to the achievement of the targets impossible.
- The building sector is a priority area of the Lithuanian NEEAP, with particular attention given to multi-unit buildings and various types of public buildings. The strategy combines regulatory measures and financial incentives. Implementation of the EPBD is described as a major step to achieving the targets.
- Measures in other sectors, in particular industry and transport, are practically ignored in the Lithuanian NEEAP.
- National polices that merit particular mention are energy audits in the public sector and the promotion of model contracts for the diffusion of energy services, which are in the spirit of the ESD. Given the lack of details on implementation it is difficult to assess the potential effectiveness and impact of these measures.
- The NEEAP is strongly dominated by savings from existing measures, many started back in 2002, in particular through different programmes for public and for multi-unit buildings.
- There is a list of early actions and programmes, which have already been completed, but the projects financed from these programmes still accrue savings. It is difficult to evaluate if the savings from these early measures will be alive in 2016.

Summary of strengths

- A large proportion of measures presented in the NEEAP are planned to be implemented in the public sector, mostly aimed at public buildings.
- Energy audits in the public sector represent a promising national policy measure. Similarly, the promotion of model contract for the diffusion of energy services may represent a good practice although given the lack of details on implementation it is difficult to assess its potential effectiveness and impact.

---

64 Lithuania has since the conclusion of the assessment adopted and submitted a revised NEEAP. The revised NEEAP was adopted by the Lithuanian Government on 4 December, 2008, and received by the Commission services on 3 February, 2009. The revised version has not been the subject of assessment. The results presented in the synthesis report and in the above summary are both entirely based on the assessment of Lithuania's initial first NEEAP.

Summary of weaknesses

- The measures lack adequate description and explanation making proper assessment difficult. Savings estimates are not provided, including those expected from early actions.
- Almost no measures focused explicitly on the industry or transport sectors are included.
- It is unclear why some important publicly owned buildings, such as health care centres or hospitals are not addressed, especially given the particular focus on public buildings in the NEEAP.
- The NEEAP cites articles from the ESD without providing any concrete information on the specific measures that would ensure compliance with the provisions.
- The NEEAP lists a number of strategies and programmes already in place, but implementation details and/or results to date are missing for most of them.

Role of public sector

The NEEAP lists a number of programmes aimed at the public sector mainly on the improvement of energy performance of different types of public buildings. A measure is planned to exchange best practices among public sector bodies, as well as one to effectively communicate examples of public sector successes to the general public. However these measures are not detailed, making their potential impact or effectiveness impossible to assess. Measures to communicate the exemplary role of the sector have not been addressed. In its NEEAP Lithuania mentions that it will commit to carrying out at least two of the public procurement measures, as listed in Annex VI, but the choice of measures is not indicated in the NEEAP.

Provision of information and advice

The Plan contains little concrete information regarding the provision of information and advice to final customers. Article 7 of the ESD is cited, but additional information elaborating on how its provisions will be met is missing. The appropriate conditions and incentives for market operators are not clearly provided for.

Conclusion

The first NEEAP of Lithuania does not present a coherent strategy towards the national energy savings targets and does not provide an adequate level of detail with regard to information concerning policies and measures to enable assessment. Planned measures and indications of obligations are simply listed without any further details concerning implementation being given. Whether the measures will actually be adopted or implemented is also often unclear. No implementation details are provided for the strategies and programmes that are listed in the NEEAP and already in place. Saving estimates are not provided.

The NEEAP places a very strong focus on buildings, and mainly relies on regulation (transposition of EPBD and national regulations) assisted by some financial incentives. The plan is dominated by early actions. Important end-use sectors, such as industry and transport, are not covered.

Many measures related to the mandatory reporting provisions of the ESD are mentioned, but no details are given and the ESD articles are often simply repeated. Given the above considerations, with the suggested measures the attainment of the overall and interim targets appears uncertain, and it is impossible to evaluate whether the Plan is realistic with regard to reaching the targets.

LUXEMBOURG

General evaluation

The National Energy Efficiency Action Plan of Luxembourg introduces an intermediate target of 3% for 2010 and a overall target of 9% for 2016 and is in respect of the period 2008-2016 of the Directive. The intermediate and overall savings targets appear to have been calculated correctly. Although there is no official commitment to go beyond the adopted energy savings target, the sum of the expected savings from the individual measures is higher than the 9% target. Expected savings add up to approx. 10.4% of the reference final inland energy consumption.

Luxembourg's NEEAP presents a very clear and coherent plan with feasible and realistic targets, based on detailed calculations and in-depth sectoral analysis.

- The major focus is on the residential sector, which is expected to deliver approximately half of the savings in 2016.
- The NEEAP presents a comprehensive set of realistic measures, putting a strong emphasis on improving the energy performance of residential and tertiary buildings through the strengthening of building codes and the introduction of financial support for new construction and building refurbishment. Approximately one third of the 2016 target can be met by three measures that are related to the strengthening of the building codes post-2008.
- Early actions and new measures in advanced stages of planning each constitute around 40 % of the expected energy savings, and planned measures account for around 20% of the expected savings in 2016.
- Balanced coverage of national measures and measures introduced to comply with Community legislation.

Summary of strengths

- A very well-structured and informative plan that provides sufficient details about the majority of measures and associated calculation of the saving estimates.
- Coherent sets of measures. Clear and very useful distinction of early action, measures at advanced stages of planning, and proposed measures.
- Continuity of measures: building codes are being strengthened and existing programmes are being prolonged or prolongation is being planned.
- Level of ambition: the sum of the expected savings of the individual measures goes beyond the 9% target (approx. 10.4% of final inland energy consumption).
- Saving estimates for all measures in 2016 are included, mostly backed by a sufficient level of detail on assumptions and calculation methods.

- The NEEAP contains a number of potential good practices: subsidies for low-energy and passive houses, integrated approach towards subsidies (e.g. both thermal envelope of buildings and heating systems) and financial support for least-polluting car.

Summary of weaknesses

- A clarification on early action is needed to confirm compliance with the provision that only savings that accrue in the period 2008-2016 are eligible under the Directive.[65]
- Savings estimates are only provided for 2016, but not for 2010. Some measures' expected savings seem to be overestimated.
- No information on the treatment of energy consumption in military forces in the calculation of the target (minor issue for Luxembourg).
- Overlapping timeframe of similar measures, clarification needed as to how double counting will be avoided.
- No detailed information regarding the communication of the exemplary role and actions of the public sector to the citizens and the business sector.

Role of Public Sector

The exemplary role of the public sector is clearly mentioned in the NEEAP of Luxembourg. The NEEAP identifies three measures planned in the public sector that are in respect of Annex VI of the Directive. However, the concrete requirements that these measures entail need to be clarified.

No detailed information is included regarding the communication of the exemplary role of the public sector and its actions to the citizens and business sectors, nor does the Plan contain information about facilitating and enabling the exchange of best practices between public sector bodies.

Provision of information and advice

The NEEAP has strong provisions for increasing efforts to provide customers with information on energy efficiency. Six measures aim to increase end-user awareness of the merits of energy efficiency, ensure more efficient communication flows on energy consumption facts and direct information in order to help costumer make the best purchasing decisions in this regard.

---

65 At present, measures 1, 2 and 10 state that they include pre-2008 savings, which is not acceptable because the Directive only considers savings in the period 2008-2016. The correct formulation is that these early actions can generate savings in the period 2008-2016 and these savings would come from buildings constructed in the period 1995-2007 (in the case of measures 1 and 10) or from projects financed in the period 2001-2007 (measure 2). It appears likely that the saving estimates have been made with the correct formulation in mind, but this needs to be confirmed by the Luxemburgish authorities.

However, it is not clear if appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency are being established.

Conclusion

The NEEAP of Luxembourg constitutes a very clear and coherent plan with feasible and realistic targets providing a sufficient level of detail. The NEEAP contains detailed saving estimates and in-depth sectoral analysis, facilitating the evaluation of the feasibility of measures. It provides a clear distinction between early actions, measures at advanced stages of planning and proposed measures and ensures continuity of successful measures. Although there is no official commitment to go beyond the adopted ESD target, the sum of the expected savings of the individual measures is higher than the 9% set by the Directive.

On the other hand, the Luxemburgish authorities need to confirm that only savings from early actions accruing in the period 2008-2016 have been counted towards the target. At present, the Plan seems to imply that pre-2008 savings from major early actions have been counted towards the 2016 target. The ESD only allows for savings generated in the period 2008-2016, including savings from early measures, as long as these savings are alive in 2016[66]. Whether savings from early actions generated prior to 2008 are excluded needs to be clarified by the Luxemburgish authorities.

In addition, the NEEAP includes some overlaps, with a potential for double counting of savings from measures and possible saving overestimates in a small number of cases. Overlapping timeframe of similar measures necessitates clarification as to how double counting will be avoided. While the coverage of identical actions by regulations and financial tools can potentially strengthen the implementation of legislation, a clarification is needed also in this case as to how double counting will be avoided.

The exemplary role of the public sector is clearly mentioned, but there is no detailed information regarding how the role and these actions and results will be communicated to the citizens and the business sector. In addition, it needs to be clarified if the proposed measures are in the spirit of Annex VI insofar as the requirements being introduced are concerned.

[66] Savings could come from e.g. buildings constructed or project financed in the pre-2008 period.

MALTA

General evaluation

The Maltese National Energy Efficiency Action Plan sets a national energy savings target of 9% in 2016 and an intermediate target of 3% in 2010. The target calculation and the period covered are in line with the Directive. The energy consumption falling under the scope of the Emission Trading Scheme is excluded from the calculation of the target. Similarly, the energy used by Enemalta[67] for transformation of fuels to electricity and electricity distribution has been excluded from the declared consumption that forms the base consumption for target calculation The NEEAP is coherent and represents a realistic strategy with regard to achieving the targets. All important end-use sectors are covered and measures cover relevant end-uses.

- The NEEAP covers industry, transport, residential and tertiary sectors. All measures have a national scope and fully cover the respective sectors.
- Some of the measures are not in scope of the Directive (mainly the measures in the electricity supply sector). Although the industry sector is addressed by various measures, it is not clear what some of these could fall under the Emission Trading Scheme.
- Savings are estimated for some measures only: for this reason the total amount of declared estimated savings falls short of the adopted savings target.
- Half of the measures proposed are early actions that are still ongoing. All the residential and industry sectors measures fall into this category, as well as some horizontal measures. Apart from one measure that dates back to 2000, all early actions were started in the last 3 years.
- The NEEAP mostly relies on national measures. Six measures can be considered as implementing Community legislation.
- There are many innovative measures in the Maltese NEEAP. An institute of Green Leaders has been created. The set of complementary transport measures is innovative: It includes promotion of modal shift, improvement of public transport together with congestion fees, subsidy for electric/hybrid cars and information campaigns. Green travel plans for public transport is another example of an innovative measure which may become a good practice, but more information on the actual implementation of the measure would be needed to properly assess potential impact and effectiveness.
- Among the information measures, the focus on schools seems important with respect to influencing the behaviour of future generations at a stage where attitudes and behaviours are formed. Also the possible introduction of an intelligent metering system may potentially become a powerful measure with regard to improving the feedback to consumers on actual consumption empowering them to make better decisions.

---

[67] Enemalta is the Maltese national energy company responsible for a broad range of activities: the import and distribution of petroleum products and liquefied petroleum gas as well as the generation and distribution of electricity.

- For most of the measures the calculation methodology is not described. Where specified, the calculation methods are based on a bottom-up approach.

Summary of strengths

- The national coverage of measures.
- Significant number of early actions started in the past three years.
- Direct involvement of the authorities through incentives and coordination of the implementation of measures.
- Measures are addressing all main end-use sectors (residential, transport, tertiary and industry) and are proposing significant actions.
- A number of several good practices and innovative measures are included.
- The exemplary role of the public sector is well described and substantiated by proposed measures and actions.

Summary of weaknesses

- High reliance on two types of measures: state financial incentives and information measures. While for some end-use sectors or projects state grants or incentives are important, incentivising end-users without involving market operators will not contribute to the development of the market for energy efficiency and energy services, which can lead to uncertainty with regard to the ability and likelihood of these activities being sustained over time, e.g. in periods of budgetary constraints. General information campaigns and actions are important as a complement to other measures, but are unlikely to deliver considerable direct savings as stand-alone measures.
- The share of expected savings by end-use sector is not specified and the importance of different sectors as contributors to the achievement of the overall target is unclear.
- For some of the proposed measures descriptions are vague or also conditional upon a planned feasibility study.
- When calculating the target, the financial year (from 1 October to 30 September of the following year) has been used instead of calendar year. This is a rather unusual approach, but not one that affects the results of the NEEAP; however, it is not clear, whether savings from measures for reporting purposes will also be calculated using this methodology.

Role of public sector

The public sector is well covered by many initiatives, including green/energy efficiency procurement. Energy efficiency measures are taken in government subsidies social housing projects, which also improves the comfort of its occupants. The NEEAP incorporates 4 measures from Annex VI to the Directive.

The effective communication of the exemplary role and actions of the public sector to citizens and/or companies and the exchange of experience among public sector bodies are not explicitly referred to in the NEEAP. Nevertheless, the NEEAP of Malta has a very consistent set of measures in the public sector that indirectly implies these without formally introducing such measures.

Provision of information and advice

The NEEAP contains a very well described and designed communication strategy. The NEEAP foresees information conservation tips being provided by Enemalta. A programme to install smart meters is mentioned, but it is not clearly specified that the market operators will have to provide more information and advice to final customers on energy efficiency, and conditions and incentives are not clearly set up.

Conclusion

The NEEAP presents a coherent strategy which is deemed realistic with the view to achieving the savings targets. Although the currently estimated savings do not reach the adopted target, the savings that have not been estimated appear likely to contribute to attaining it. The NEEAP is mostly based on financial incentives and information measures, while regulatory measures have not been explicitly incorporated into the NEEAP.

THE NETHERLANDS

General evaluation

The Dutch National Energy Efficiency Action Plan commits to a 9% energy savings target in 2016 and to a 2% intermediate target in 2010. The NEEAP covers the period 2008-2016 and the targets have been calculated in line with the provisions of the Directive. The NEEAP states that expected savings from measures will be higher than the national target and provides low and high estimates, from 9.4 to 14.7% energy savings, depending on the success of Community (2/3) and national policy (1/3). The NEEAP presents a clear, coherent and realistic strategy. Only savings at sectoral level are provided. According the NEEAP, this has been done to avoid double counting among individual measures.

- The NEEAP covers all sectors, placing a particular focus on the residential and transport sectors which combined account for more than 70% of savings in 2016. Non-ETS industry only brings 1-2 % of 2016 savings. There is a strong emphasis on measures targeting in the energy performance of buildings (to deliver estimated 60% of savings).
- The NEEAP includes a well-conceived mix of measures, including voluntary agreements (traditionally strong and successful instrument in the Netherlands), extensive information and awareness raising activities, financial and fiscal measures (taxes and tax incentives, subsidies) and regulatory activities (EPBD). The measures appear realistic with regard to attaining the target.
- The NEEAP introduces few new measures, but this is probably due to the fact that the Netherlands is one of the early movers in terms of energy efficiency policies.
- Voluntary agreements and benchmarking are well-established good practices in the Netherlands and the scope of these has been significantly extended over recent years. The plan to move towards a passive house standard (Energy Performance Coefficient of 0.4 in 2015) is an example of a good practice.
- The large majority of measures are national measures, but there is a clear link with Community legislation (EPBD, Ecodesign and Labelling Directives).
- The role of the public sector is clearly indicated. The Plan meets the provisions on the exemplary role of the public sector insofar as the measures from Annex VI to the Directive have been incorporated.
- Numerous well-designed activities related to provision of information are outlined, but the NEEAP contains no reference to the establishment of appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

Summary of strengths

- The NEEAP presents a consistent and realistic strategy on how to reach the targets, identifies clear priorities (buildings, transport), and establishes clear links with Community legislation (EPBD, Ecodesign and Labelling Directives).

- Includes a well-conceived mix of measures that are complementary to one another that have proved successful in the Netherlands.
- Stability and continuity of the measures in the NEEAP, which is built on prolonging and extending many successful, existing schemes.
- Coherent approach to designing policy packages – a combination of regulation or voluntary agreements, information and/or financial tools (incentives and taxes).
- The public sector plays an important role.
- Well-suited implementing agencies with clear responsibilities have been designated.

Summary of weaknesses

- The role of measures aimed at the non-ETS industrial sector is only very minor and seems disproportionate to its share in final energy consumption, since it is assumed that there is still a cost-effective savings potential in non-energy intensive industries (e.g. horizontal technologies).
- While measures in transport are noteworthy, these are primarily fiscal measures which would not contribute to reduced mileage and/or modal shift in freight transport. No measures related to modal shift in passenger transport is included, but this may be due to already high levels of use of public and alternative modes of transport, such as bicycles, in the Netherlands.
- Not many examples of innovative tools, for example no statement about ESCOs and/or energy services.
- Energy savings estimates are provided only at sectoral level. While this is justified on the basis of the need to avoid double counting, it does impede the evaluation of separate measures.

Role of public sector

The NEEAP of the Netherlands indicates the exemplary role of the public sector. The central government will act as a 'launching customer' and 100% of the central government's procurement will be based on sustainability (including energy efficiency) criteria from 2010. For regional and local government, this percentage will be at least 50 %. The buildings of the national government will be climate neutral from 2012 onwards. These two provisions appear to satisfy the requirements for measures in the public sector.

However, no specific measures are foreseen to facilitate and enable the exchange of best practices between public sector bodies. In addition, no specific indication is made to measures to effectively communicate the exemplary role and actions of the public sector to citizens and/or companies.

Provision of information and advice

A number of well-described measures cover provision of information, and advice and well-defined information measures are included in different sectors. The information measures are designed and structured to reinforce and complement other policies and measures and a variety of communications channels and tools is being applied (e.g. tailored energy advice, TV programmes, and so on).

However the NEEAP contains no reference to the establishment of appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

Conclusion

The Dutch NEEAP presents a coherent strategy which seems realistic with a view to towards the intermediate and overall targets. It meets all the mandatory reporting provisions of the Directive and covers the required time-period. The NEEAP puts the emphasis on measures in buildings and indicates a very strong role for the public sector. Potential good practices include Voluntary Agreements and benchmarking, as well as the plan to move towards a passive house standard.

However, it is not entirely clear whether the savings estimates in the transport sector can be achieved with the types of measures indicated which are largely fiscal in nature. Relative to its considerable energy efficiency potential, the NEEAP includes surprisingly few measures aimed at the non-ETS industry, in particular with respect to horizontal technologies/systems. The NEEAP does not introduce many new ideas, possibly due to the fact that the Netherlands has been a leader and early mover in energy efficiency, nor does it try to capture the spirit of the Directive in terms of creating a market for energy efficiency and energy services.

POLAND

General evaluation

The National Energy Efficiency Action Plan of Poland introduces a 9% national energy saving target in 2016 and an intermediate target of 2% in 2010. The energy savings targets appear to have been correctly calculated, and it covers the required period, 2008-2016. The NEEAP presents a collection of separate measures and as such cannot be said to be coherent or to provide a strategic outlook. Because measures are defined in a very general manner and savings estimates for measures are not provided, it has been difficult to assess whether the strategy is realistic with the view to reaching the targets.

- The NEEAP introduces measures aimed at the majority of key end-use sectors, such as residential, tertiary, industry and transport.
- The level of detail on measures and their implementation is rather limited making it difficult to assess whether the measures once implemented would deliver the savings target.
- The absence of savings estimates at the level of measure or sector makes it difficult to evaluate how realistic the strategy is and what the priority areas of the NEEAP are. The majority of measures target the tertiary and industrial sectors. Given the share of final energy consumption of the residential sector, more efforts (and measures) may have been expected targeting this sector. While this sector is the second biggest energy user, only three very broad measures are included.
- New measures, many starting in 2008, predominates the plan, in particular through the use of Cohesion Policy Funds for financing investments, which may make the intermediate target hard, or even unrealistic, to attain.
- The NEEAP shows a preference for market-based instruments. While this is in the spirit of the Directive, given Poland's lack of prior experience with such tools implementation delays may be expected: in particular in the case of the planned white certificate system. This is a complex policy scheme to set up and it appears overly ambitious to have such a system operating as early as 2009.
- The NEEAP lists two measures in the transport sector with a rather wide scope. A number of actions are listed under each of these measures, but it is unclear how and if these fit together in a coherent manner. In addition implementation details are missing.
- The "System of voluntary undertakings" and the "Promotion of energy services provided by ESCOs" should be highlighted as potential good practices, given that care is taken with regard to their design and implementation.
- There is a good balance between national and Community measures.

Summary of strengths

- Clearly defined role of the public sector.
- Good balance between national measures and measures implemented to comply with Community legislation.
- Openness to introducing new and innovative measures (voluntary agreements, white certificates, energy management schemes).

Summary of weaknesses

- Often ambiguous content of measures: most measures are very general in nature. There is a lack of coherence within some measures; the actions seem to be rather randomly collected. In some cases too many actions under one measure, which makes the measures and their scope very unclear. Many measures tend to include every possible action on the sector and target, especially on transport, so that serious doubts on the implementation are raised.
- Savings estimates are not provided.
- Information concerning budgetary provisions are lacking for the majority of measures.
- The transport sector activities are not well described and it seems uncertain that they would be able to deliver real savings.

Role of public sector

The NEEAP of Poland clearly establishes exemplary role of the public sector. A number of good measures are included, such as promotion of energy services provided by ESCOs and the cost effective management of energy in the public sector. Budgetary resources for projects come from the operational programmes for the Cohesion Policy Funds. However, what concrete mandatory requirements the public sector measures would imply are not clear, in particular as it relates to the list in Annex VI of the Directive.

While the NEEAP contains no specific information regarding the effective communication of the role of the public sector and its actions to citizens and/or companies, a considerable amount of general awareness raising is envisaged, which will also cover the public sector. The NEEAP does foresee measures to facilitate and enable the exchange of best practices between public sector bodies.

Provision of information and advice

Promising information activities are being introduced, however how they are connected and combined to form a coherent and comprehensive communication strategy that will support and reinforce the implementation of other measures is missing. Currently they appear to be a collection of stand alone activities and not part of a coherent whole.

The NEEAP states that Poland will meet the requirement to establish appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency via promotion of ESCO services and via the system of white certificates to be introduced in 2009.

Conclusion

The NEEAP of Poland meets most of the mandatory provisions of the ESD and introduces a good balance of national and Community measures. New and innovative measures are being introduced, which provide a good start for the kind of commitment and efforts needed to realize savings potentials and reach the overall target. While the plan can be characterised as having a certain degree of strategic outlook with regard to achieving savings throughout the economy (with the exception of the transport sector), it lacks coherence and appears more as a collection of separate measures and in that regard has a significant potential for improvement. Emphasis is on market-based measures, which are in the spirit of the Directive. However, Poland would be breaking new ground in this area and additional institutional infrastructure may have to be established both of which may be causing delays in the implementation schedule. Financial support seems to play an important role. The Plan introduces some promising practices, such as white certificates, promotion of energy service companies, energy management schemes/practices and an obligation on the public sector to achieve savings. However, the potential impacts and effectiveness of these measures with regard to achieving the targets remain hard to judge due to the very general descriptions of most measures and the lack of coherence between and interaction of separate measures. It has also been noted that the strong predominance of new measures, many starting in 2008, may make the intermediate target hard, or even unrealistic, to attain.

PORTUGAL

General evaluation

The Portuguese National Energy Efficiency Action Plan covers the period from 2008-2015 instead of 2008-2016, as required by the Directive. Portugal has adopted an energy savings target for 2015, but none for 2010 and 2016. Furthermore, the NEEAP is inconsistent with regard to the 2015 target. In the executive summary an improvement in energy efficiency equivalent to 10% of final energy consumption is stated, whereas a 9.8% savings target is referred to elsewhere. Furthermore, adequate information on the target calculation has not been provided which precludes assessment of whether it has been calculated in line with the provisions of Annex I of the Directive.

The Plan constitutes as a clear and coherent strategy, where the measures and programmes establish a consistent set of actions to achieving the 2015 target. Although the Plan fails to identify targets in line with the Directive, saving estimates are available for both 2010 and 2015.

- The NEEAP is based on a large set of measures across all major end-use sectors, including transport, residential, public sector, industry, energy services, and information measures. For the majority of measures savings estimates for both 2010 and 2015 are available (industry and information or behavioural measures have estimates only for 2015).
- The majority of the measures are well-designed, realistic, and the very large majority include at least a minimum level of description and explanation. In most cases assumptions underlying the savings estimates are identified.
- While the large majority of measures and the savings are in the scope of the ESD, two large programs in the industrial sector cover a number of industrial branches that fall under the ETS. Certain measures on horizontal technologies in industry also target both ESD and ETS industries.
- The NEEAP features a large selection of innovative and good practices. It features a very comprehensive set of transport measures, strong measures in the buildings sector, such as progressive alignment of taxation with energy class of buildings, obligation to install solar panels, setting of minimum quotas by efficiency classes in new buildings, measures to encourage micro-RES generation in domestic sector. The Plan commits to phasing-out inefficient lamps. A comprehensive set of measures in industry (voluntary agreements, mandatory energy audits, obligations for large consumers to implement measures with short PBT) is also put forward and a set of very strong measures in the public sector (buildings, transport, public lighting), as well as promising measures in public procurement. Furthermore, the Plan has integrated effective financing tools. The sectoral measures are reinforced by a strong set of 'soft' measures (''More Programme'' (Programa Mais)), which builds on awarding prizes and developing demonstration projects in various target sectors.
- The NEEAP does not indicate the timeframe (start and expected end-date) of the measures, thus the balance between existing measures and new measures is impossible to assess.

- The large majority of measures are national initiatives, and many measures create favourable conditions for the successful implementation of Community legislation at national level.

Summary of strength

- Very comprehensive policy packages in all major end-use sectors. Diverse and mutually complementing measures, with technical and behavioural measures that build on regulatory, financial and information provision. Especially impressive measures in transport, where modal split improvements are intended in both passenger and freight transport.
- Concrete and ambitious targets associated with the performance of specific measures in transport, buildings and in the public sector.
- A comprehensive set of very strong measures in the public sector (buildings, transport, public lighting) including public procurement requirements.
- Numerous good practices (see previous section).
- The large majority of measures have savings estimates and there are details about the main assumptions made to estimate the savings.
- A very sound institutional structure is outlined. Clear identification of the institutions to coordinate implementation of the plan and monitoring of sectoral programmes.
- Sound financial provisions: integration of Cohesion Policy funds, fiscal measures (taxation), incentives (incl. an innovative efficiency check incentive granted to electricity consumers with two years of effective reduction in electricity consumption).
- Promotion of market-based mechanisms (ESCOs) and fiscal measures.

Summary of weaknesses

- The Portuguese NEEAP does not explain well the setting of the savings targets. Energy use that fall under the ETS has not been excluded or identified: the only indication of reference consumption used for target calculation is the average 5-year final energy consumption[68].
- A large share of industry measures are either non eligible (ETS industrial branches) or include horizontal technologies aimed at both ETS and non-ETS installations. Finally, a large share of industrial savings is indicated as 'savings in other sectors of activity' or as stemming from 'retroactive measures'. Further explanations of these measures are not provided making assessed of whether they qualify as early actions impossible.
- Unclear if the necessary budget to implement the NEEAP will be available. The tax on inefficient lamps is likely to be in breach of common market rules.
- Unclear if and how double counting has been avoided, especially as concerns transport measures. Some overestimates possible.

[68] P. 3 of the English translation incorrectly indicates the unit of final energy consumption as 'toe', whereas it should be 'ktoe'.

- A misconception concerning the target: Portugal indicates its intention to save 1% per annum.

Role of Public Sector

The Portuguese NEEAP integrates a comprehensive set of strong measures targeting the public sector, and includes measures on its exemplary role (such as the "Autarquia Mais"/More municipality, which is part of the "Plus Programme"). The communication of its exemplary role and actions is not clearly stated; nevertheless it seems to be implicit in the above mentioned "Plus Programme".

Portugal meets the requirements for public procurement by including five of the measures from the Annex VI list of the Directive. Furthermore, additional energy saving targets (mainly related to RES) have also been indicated.

The instrument "Autarquia Mais" (More municipalities) within the "Plus Programme" may function as a platform for exchange of good practices between public bodies, because the measure is about awarding prizes to the best performers in the municipal sector. However, the communication element is not clearly indicated in the description of this measure.

Provision of information

The Portuguese NEEAP includes a strong and promising set of information, communication and demonstration measures; however the description of these measures do not include address implementation, timeframe and/or expected impacts making the assessment difficult. These measures target all major stakeholders, and can be expected to significantly increase the availability of information on energy efficiency contributing to the level of public awareness.

The measure "Efficiency Cheque Incentive" constitutes an attractive incentive for final customers aimed at sustained energy savings over time. It is a very innovative measure, where the Cheques are given to customers that can demonstrate that they have sustained a certain level of savings of electricity over a certain period of time. Appropriate conditions and incentives for the market operators to provide more information and advice to final customers have not been explicitly addressed. The role of market operators in this scheme is unclear. It appears that they will only act as a distribution channel for the benefits.

Conclusion

The NEEAP presents a very strong and comprehensive strategy. Its full implementation would meet the 2015 target indicated in the NEEAP. However, the NEEAP does not set targets in line with the provisions of the Directive (intermediate and overall).

The main weakness is its general lack of compliance with some major reporting requirements for the first NEEAP, namely the lack of targets for 2010 and 2016. Adequate information on

the target calculation has not been provided and it is unclear whether ETS consumption has been excluded from the target calculation.

Beyond this general lack of compliance, the NEEAP presents a very strong set of comprehensive policy packages targeting all major end-use sectors: transport, buildings and industry. It includes diverse and mutually complementing measures - technical and behavioural measures that build on regulatory, financial and information provision. The NEEAP has very promising and well-thought out strategies in transport and the public sector, as well as a strong set of soft measures. Concrete and ambitious targets associated with the performance of specific measures in transport, buildings and in the public sector. The NEEAP furthermore outlines a strong institutional structure for implementation of the plan and sound financial provisions incorporating market-based solutions, fiscal measures and Cohesion Policy funds to facilitate and support implementation.

It has been noted however that a large share of measures in industry are either non eligible (ETS industrial branches) or include horizontal technologies aimed at both ETS and non-ETS installations. In addition, ambiguities exist about a large share of industrial savings. While it is positive that the NEEAP provides quantified savings estimates for measures including an overview of the main underlying assumptions, it is less clear if and how double counting has been avoided, especially with regard to transport sector measures.

ROMANIA

General evaluation

The National Energy Efficiency Action Plan of Romania sets an indicative energy savings target of 13.5% in 2016, which is one of the most ambitious in the Community. The intermediate target set for 2010 is 4.5%. The overall strategy is to achieve the target by saving 1.5% per year (cumulative savings calculated on the basis of the 5 year average final inland energy consumption). The energy consumption of industrial installations covered by the Emission Trading Scheme has been excluded from the target calculation. The Romanian NEEAP focuses mainly on the period from 2008-2010, making it difficult to assess the measures with respect to the subsequent period 2011-2016.

- The NEEAP covers the industrial, transport, tertiary and residential sectors.
- The measure on biofuels for transport does not seem to promote energy efficiency improvement and as such it falls outside the scope of the Directive.
- Savings estimates are provided only for a few measures. If savings from the biofuels measure in transport is including, the total amount of declared estimated savings is higher than the declared target for 2010.
- There is a good balance between national measures and measures implementing EU legislation.
- Innovative measures at national level include promotion of ESCOs and voluntary agreements in industry. In addition studies on white certificates and energy efficiency contracts will be commissioned to explore these policy instruments.
- The NEEAP is well-balanced in terms of early actions and new measures.
- Many of the proposed measures are foreseen to be implemented at national level. However, the NEEAP comprises a few very specific measures that are limited with regard to scope and potential impact. (public lighting in only two cities, energy efficiency improvements in the Bucharest metro/subway)

Summary of strengths

- The NEEAP has ambitious targets that reflect the country's energy saving potential.
- All end-use sectors are covered by measures.
- Good balance between national measures and transposition of Community legislation.
- The industry sector is well covered by complementary measures (voluntary agreements, incentives, grants).

Summary of weaknesses

- Considering the estimated savings, for the attainment of the targets Romania relies heavily on the biofuel measure. However the biofuel promotion measure is a fuel switching and not an energy efficiency measure, designed mostly to meet the biofuels target. If this measure is excluded, the overall target for 2016 may be unrealistic given the remaining proposed measures.
- The sum of the reported savings by measures (where estimated) is much lower than the adopted 2016 target. Without the expected savings from the biofuel promotion measure the NEEAP appear unrealistic with a view to achieving the ambitious targets that Romania has set for itself
- The estimated savings from the residential sector are negligible compared to the overall target, even though it in Romania probably has the highest savings potential of any one sector.
- Some measures are too limited in scope to deliver major savings (e.g. public lighting in only two cities, energy efficiency improvements to the Bucharest metro system).
- The public sector is not covered in a consistent way.
- The plan is prepared focusing mostly on the period 2008-2010, which makes it very difficult to assess whether the strategy is realistic with the view to reaching the target in 2016.
- Savings estimates are not provided for the majority of the measures.

Role of public sector

The public sector is not well covered by measures: only a promotion campaign for renewable energy, efficient cogeneration and lighting improvements in two cities are foreseen. The NEEAP indicates a selection of three measures from Annex VI of the Directive that will become mandatory in 2008.

The Romanian NEEAP does not address the exemplary role of public sector and how it will effectively communicate its role and actions to citizens and businesses, nor does it address how it will ensure that exchange of good practices among public bodies take place.

Provision of information and advice

Information campaigns are foreseen to accompany almost all measures in the NEEAP. These will be coordinated by government (through ministries or the state agency) and are aimed at improving energy efficiency of domestic heating/cooling equipment, promotion of ESCOs, improvement of public lighting systems, promotion of the use of energy efficient household appliances and energy-saving light bulbs, and the use of renewable energy resources in public and residential sectors.

No reference is made to the establishment of appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

Conclusion

The NEEAP aims at an ambitious national energy savings target and demonstrates a good coverage of all end-use sectors, a good balance between Community legislation and national initiatives and some innovative measures are also proposed. However, if it is concluded that the biofuels measure fall outside the scope of the directive and the expected savings from it do not qualify toward the target, the NEEAP appear unrealistic with a view to achieving the ambitious targets that Romania has set for itself.

Many measures are also very specific and limited in scope, and consequently their impacts are likely to be limited. The exemplary role of public sector is not well covered, appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency are mentioned are not foreseen.

General evaluation

The Slovak National Energy Efficiency Action Plan sets a national energy savings target of 9% in 2016 and an intermediate target of 3% in 2010. While a target is set for 2016, the scope of the NEEAP in terms of duration of the measures included is 2008-2010, which does not appear to be in line with the requirements of the Directive. The NEEAP does not include information on the average final consumption for the reference years, nor does demonstrate how the target has been calculation. The plan does not mention whether consumption by ETS installations has been excluded from the target calculation, precluding judgement of whether the target calculation is in line with the Directive.

Overall, the Slovak NEEAP does not present a clear and coherent strategy toward the targets. There is no apparent link between individual measures and descriptions are limited. Sectoral details are sometimes inconsistent with information in tables not necessarily corresponding to what is presented in the text. This is particularly true for the transport section. The plan is however well structured. It provides an overview of a broad list of measures and puts forward a number of interesting ideas.

- How sectors are covered does not seem to mirror their savings potential, making the plan slightly unbalanced. Measures aimed at buildings are to deliver only 11% of the total savings. On the other hand, large savings are expected to come from the industrial sector (31%) and horizontal measures (31%). However, most of the measures in industry are either not in scope of Directive (such as improvement of energy efficiency on the supply side of energy generation in processing industry) or are probably including ETS installations for which expected savings would be ineligible under the Directive.
- The NEEAP includes many good, cost-effective and realistic measures.
- Different aspects of measures are addressed in the plan, including organizational, institutional, financial, legislative aspects, but the various aspects are often presented in a way that makes them appear as separate measures. A more holistic approach would improve coherence and ease implementation.
- The transport sector includes a number of innovative measures (on intermodal transport infrastructure, removal of bottlenecks, and so on), which may make significant contributions in terms of savings. On the other hand, the plan also includes transport measures that are rather ambiguous making their contribution to the target unclear.
- The NEEAP has a good balance between Community and national policies, as well as new and existing measures.
- The institutional background for the measures is well described which if established would provide a potentially solid base upon which to execute the measures.
- The financial provisions are described in detailed, with indications of expected sources.

Summary of strengths

- Clear overview of the background and context for the NEEAP, identifying the challenges and the main energy efficiency instruments already in place, e.g. legislative tools or monitoring systems.
- A well structured plan with descriptions of the measures complemented by informative tables.
- The measures cover all major end-uses, and the measures are diverse.
- Information is available on the budget and the designated responsible bodies, which indicates commitment and a structured approach.
- The planned measures form a comprehensive strategy, considering institutional, legislative, organizational and financial needs.
- The plan is well balanced between existing and new measures.

Summary of weaknesses

- Saving estimates are provided by sectors but not by measure. Only a qualitative indication (star rated scale) of the measure's importance with regard to achieving the overall savings target is included.
- The relative contribution of different sectors in terms of savings does not seem to mirror their respective cost effective savings potentials. The savings share of the horizontal energy efficiency measures is estimated at approximately 31% of the total, which appears to be overestimated given the information provided on these measures.
- There is considerable overlap in the scope of the measures: most of the horizontal measures are also listed as sectoral or individual measures. For most of the horizontal information campaigns scope, target groups and timing are not mentioned. The risk of overlaps and consequent double counting is therefore considerable. Double counting is not been addressed.
- Indication of financing sources or legislative back up of energy efficiency actions also seem to be presented as separate measures. This should be considered as part of the supported measure and not as a separate measure.
- Some measures, while promote increased energy efficiency, can be expected to lead to increased energy consumption. For instance, the promotion of efficient air conditioning systems in non-productive buildings.

Role of public sector

The NEEAP only partially addresses one of the public procurement measures listed in Annex VI of the Directive, and a plan to integrate energy efficiency principles into public procurement is mentioned, but no details are provided.

Energy efficiency training of public bodies and a Centre for Public Lighting is planned, which could potentially ensure the successful exchange of experience among them even if this has not been explicitly referred to as a measure in the NEEAP. The exemplary role of the public

sector and the effective communication of its role and actions to citizens and/or companies are not addressed.

Provision of information and advice

Extensive information measures and campaigns are planned, but their timeframe is often rather limited. Furthermore, no implementation details are provided as to their scope, reach or potential impacts. Nevertheless, these efforts can at any rate be expected to increase the availability and dissemination of information to end users.

No incentives and obligations are foreseen for market operators, as required by Art 7.2 of the Directive.

Conclusion

The basic structure of the NEEAP is clear and coherent, however content wise the Plan does not seem to constitute a coherent strategy toward the achievement of the overall savings target. Furthermore, the measures described in the plan relate to the period 2008-2010, instead of 2008-2016, although the plan includes an overall savings estimate for 2016.

The NEEAP contains a large number of measures and covers major end-use sectors. However, the coverage of sectors seems rather unbalanced, with horizontal measures being expected to deliver the biggest share of savings. These measures are vaguely described and their impacts are unclear, furthermore they overlap with other sectoral and individual measures. Given the current information, the horizontal measures seem unlikely to deliver the expected savings. Legislative, organizational, institutional, financial aspects of seemingly the same measure are considered as separate measures. The measure descriptions when available are often not in line with the measures as listed in the summary tables.

Parts of the NEEAP are inconsistent or contradictory, particularly the information presented in the text do not necessarily match that of the summary tables. Basic details and assumptions about the measures are lacking which impeded proper assessment.

The main provisions regarding the public sector and availability of information have not been addressed.

From the first NEEAP, it is not clear that Slovakia's strategy is realistic with a view to delivering the 9% energy savings in 2016.

SLOVENIA

General evaluation

The Slovene National Energy Efficiency Action Plan sets a minimum 9% energy savings target for 2016, and an intermediate target of 2.5% for 2010. The target calculation is in line with the provisions of the Directive. The energy consumption in ETS installations has been clearly excluded from the final energy consumption used as a basis for target calculation; however, there is no information on whether non-inland consumption, or energy demand of the armed forces have been excluded. The NEEAP covers the period 2008-2016.

Given the savings estimates currently indicated in the 9% target would already be attained. In addition there are some significant measures (green procurement, minimum standards) that do not have yet respective energy saving estimates. These measures will be calculated upon availability of the calculation methodology and will bring savings on top of the target committed at present, which is a minimum commitment.

- The NEEAP is well-structured and presents a clear, coherent and realistic strategy.
- The NEEAP includes 29 measures aimed at the residential, tertiary and industry sectors and also include several that are multi-sectoral and/or horizontal in nature.
- Savings are expected to be equally distributed among end-use sectors, though the residential sector is expected to represent a slightly higher share. Buildings are the dominant end-use. Transport is also covered by some promising measures.
- The NEEAP presents mutually complementing measures that are expected to enhance each other (for instance regulation on building codes, financial support for improvement of insulation, heating systems, etc.).
- The measures seem to be well-designed, constituting a comprehensive set of actions.

Summary of strengths

- Comprehensive, concise measures, with estimates of energy savings, CO_2 reduction, and public funding needs.
- Coverage of the sectors seem balanced and with clear priorities – a strong focus on transport and buildings, while horizontal measures are also significant.
- Indication of and parallel focus on co-benefits of energy efficiency measures, for instance CO_2 reduction and cost-effectiveness and cost reduction in the public sector.
- Major Community energy efficiency obligations/policies are incorporated and extended.
- Good balance of early actions and new initiatives, as well as between national measures and measures designed to implement Community legislation.

Summary of weaknesses

- The description and level of detail of the measures is sometimes insufficient to allow for assessment of whether the measures – and thus the NEEAP overall – are realistic with a view to reaching the savings targets.
- There seems to be confusion concerning the understanding of early action. The NEEAP indicates that no early actions are taken into account, while about 60% of the declared savings are expected to come from actions that were initiated before 2008.
- The stated objectives of some measures might be slightly overambitious.

Role of public sector

The exemplary role of the public sector is clearly indicated and the sector is considered a major contributor to improved end-use energy efficiency directly and indirectly in Slovenia. Communication of its results and actions to citizens and businesses and exchange of experiences among public bodies are provided for.

The plan includes measures that clearly indicate compliance with Annex VI of the Directive. Three options from the Annex VI list are planned in the Slovenian NEEAP, and additional option is partially addressed by a measure, and the NEEAP indicates that a fifth is envisaged.

Provision of information and advice

The NEEAP presents strong measures on information dissemination, public awareness raising and demonstration projects. The NEEAP includes a number of solid behavioural measures, such as information campaigns, training, advice networks, promotion of energy efficiency, as well as a measure on applied research to facilitate introduction and market uptake of new technologies.

Furthermore obligations and incentives for market operators to increase information to end-users are planned.

Conclusion

The Slovenian NEEAP presents a well-structured, clear, and coherent strategy which is deemed realistic with a view to achieving the savings target. The target it sets is a minimum commitment that Slovenia intends to exceed. The target has been calculated in line with the provisions of the Directive, and the NEEAP fully complies with the specific reporting provisions on public sector and information availability.

The NEEAP is based on a good set of measures, balanced among end-use sectors. The measures are also balanced in terms of early actions and new initiatives, as well as between national measures and those implemented to comply with Community legislation.

Savings estimates for measures are not always available. For several measures the calculations may have been overestimated. Information on underlying assumptions and details on the savings calculations are sometimes insufficient to determine whether the expected savings estimates are realistic. In spite of this, the savings targets seem realistic given the strategy presented because additional savings will be generated by measures for which savings have yet to be estimated. Since the target and the sum of the estimated savings are equal, the savings from these measures can compensate for potential overestimates for other measures.

SPAIN

General evaluation

The Spanish National Energy Efficiency Action Plan is based on an already existing policy document entitled "Saving and Energy Efficiency Strategy in Spain" for the period 2004-2012. In itself this strategy is a coherent one, setting ambitious targets, outlining clear measures which are generally well substantiated by actions and have clearly identified savings targets. However, the Spanish Action Plan does not set a national energy savings target for 2016, nor an intermediate target for 2010. The Plan covers the period 2008-2012 and an energy savings target set for 2012 is indicated as 13.7% in terms of primary energy compared to a reference scenario. It is stated that when recalculated based on a modified reference consumption for the NEEAP it corresponds to an 11% ESD savings target. It cannot be established whether the reference consumption has been calculated in compliance with the methodology provided for by the Directive. Energy consumption of undertakings covered by the Emission Trading Scheme has not been excluded in the calculation of the NEEAP target, nor has energy consumption in air and marine transport. The Directive clearly states that final inland energy consumption should be the basis upon which the target is calculated.

- The 2012 target is not treated consistently throughout the Plan. Different values for energy savings appear across the NEEAP and saving targets are often indicated without clear reference to base values or years.
- The NEEAP includes a variety of well-designed and diverse measures that cover all sectors. The NEEAP includes a cost-benefit analysis and an impact assessment of measures in the different sectors, as well as a review of savings potentials.
- Many measures are not in the scope of the Directive (aimed at ETS undertakings or air and marine transport). These make up about 15% of the expected savings.
- Several agricultural measures and a horizontal measure lack detailed descriptions and do not seem to form a clear part of the overall strategy. They seem to be indications of future plans, however their expected role and contribution to the savings target is vague.
- The Spanish NEEAP places its major focus on the transport sector and projects that this priority sector which features the largest number of measures is to deliver 60% of the overall 2012 target. Buildings and equipment are expected to contribute 20% of the overall eligible savings. Only a few references are made to related Community legislation, but a number of measures that support national implementation of Community legislation are included.
- There is large number of innovative measures. Most of the measures are well designed and substantiated by clearly described actions. The implementation provisions suggest complex, but well coordinated and integrated measures that complement each other. The expected savings, however, sometimes appear overambitious.

Summary of strengths

- The NEEAP builds on strategies, plans and activities in the area of energy efficiency already in place;
- The strategy is based on a holistic approach, the large majority of measures are well-designed, actions are designed to be complementary and be expected to reinforce each other;
- The measures are well presented and information is provided on major issues (target, savings, costs, responsible bodies, list of concrete actions);
- Indicators are identified for measures or groups measures;
- The NEEAP mainly builds on new or supporting and complementing national measures to implement Community legislation and other plans and strategies existing in Spain;
- The NEEAP includes measures that are designed to reinforce obligations resulting from Community Directives;
- The NEEAP has a very strong, comprehensive approach to energy savings in the transport sector, with a number of innovative elements.

Summary of weaknesses

- The NEEAP does not cover the period 2008-2016; and it does not set a national energy savings target for 2016 or an intermediate target for 2010.
- The calculation of the target (available only for 2012) is not in line with the provisions of the Directive. The reference consumption used is not final inland energy consumption and does not exclude ETS undertakings. There are a number of different baselines given in the NEEAP and it is unclear which one is considered;
- The executive summary Spain indicates the 2012 target of 11%, based on a modified reference consumption, to which the country has committed itself, however this target is not clearly indicated or discussed in the NEEAP itself;
- In some cases the structure of the NEEAP and the inclusion of redundant information make it difficult to understand the measures weakening the transparency of the plan.
- The descriptions of the measures are also often brief and/or unclear and do not support proper analysis in that information on underlying assumptions, timeframe, indication of overlap and implementation is missing;
- Measures that fall outside the scope of the Directive are included. These are estimated to account for 15% of the expected savings and are mostly aimed at the transport, industry and energy transformation sectors.

Role of public sector

The NEEAP includes information on the exemplary role to be played by the public sector. With respect to communicating its role and actions to citizens and/or companies, a limited amount of traditional and innovative information campaigns and awareness raising activities

form part of the Publicity Plans of public bodies, though these does not appear to be treated as a measure, but rather introduced as background to the strategy. Whether the Spanish NEEAP is in compliance with Art 5.1 is therefore not clear. Exchange of experience among public sector bodies is not clearly described in the plan, though trainings are foreseen, which may contribute in some way to communicated the experiences among public bodies.

Concerning energy efficient public procurement measures, the NEEAP is not clear with respect to the requirement to adopt at least two measures from Annex VI of the Directive. There are measures that go some way in complying with these provisions, but it is not clear that they fully cover them.

Provision of information and advice

The NEEAP presents a well thought out communications strategy and includes information actions that are designed to supplement and complement other actions within the same measure with advice, communication, and information.

The NEEAP does not appear to include information regarding the establishment of appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

Conclusion

The Spanish NEEAP presents a coherent and strong strategy. Nevertheless, the NEEAP is not in conformity with the majority of the reporting requirements of the Directive.

Spain has made commitments to energy savings for the year 2012, but not for 2016 or 2010. The duration of the NEEAP is not in line with the Directive and the calculation of the target does not follow the methodology set forth in Annex I of the Directive.

The background and framework of the NEEAP is very strong, and the NEEAP forms an integral part of current and past energy related strategies. The planned measures form a coherent strategy, containing numerous innovative elements. The strategy is comprehensive with measures and actions designed to complement and reinforce each other. The set of measures for the transport sector is exemplary, though a number of measures are not in scope of the Directive.

Taking into account the above, it cannot be assessed whether the NEEAP can deliver the 9% ESD target in 2016 relative to the correct reference consumption as provided for by the Directive but not included in the NEEAP.

SWEDEN

General evaluation

The NEEAP of Sweden is a comprehensive, coherent and clear plan, however, does not necessarily represent a strong and realistic strategy in its current form because the potential future measures that it presents still seem to require formal adoption by the Swedish government before they can be implemented. It is indicated in the Foreword of the Plan that the new or potential future measures are proposals put forward by the Commission for Inquiry, which was set down to elaborate the Action Plan. The Plan does not indicated how, which, or how many of these new measures would possibly be adopted or implemented, thus it seems that part of the Action Plan is a proposal rather than a Plan that Sweden has committed itself to.

The Swedish NEEAP states that a national overall indicative savings target of a minimum of 9% in 2016 compared to the reference consumption has been endorsed by the Swedish Parliament. The intermediate target is a minimum of 6.5% in 2010, but it does not seem to have been formally adopted by the Government. The NEEAP is in respect of the required period 2008-2016.

The Swedish NEEAP states that through the application of so-called "future policy instruments" (understood to be proposed new measures that still require formal adoption by the Government), Sweden will, by a broad margin and regardless of the method of calculation, exceed its energy savings targets.

- The calculation of the target is in line with the requirements of the Directive, except that Sweden has chosen to disregard certain points, which are justified in the NEEAP. The fossil fuel use in undertakings falling under the ETS has been excluded from the calculation of the target, but not the electricity use. There is no indication on how energy demand by the military forces has been addressed. Sweden does not exclude energy consumption in international transport providing a strong justification for its decision not to do so.
- The Action Plan includes two lists of measures. The first one includes energy efficiency actions between 1991/95 and 2005, and actions that were in well-advanced stages of planning in 2005. Any further description is not included, only related energy savings estimates in 2010 and 2016.
- The measures contained in the second list are proposed by the Commission of Inquiry and as such represent "potential future measures". These are described in more detail and include background and objectives. No saving estimates are provided for them.
- The list of "potential future actions" is a list of *proposed* measures which require subsequent adoption by the Swedish government before they will be implemented. Because it is unknown at this point which measures will chosen and implemented, it is impossible to assess whether the strategy is realistic with regard to attaining the savings target. On the other hand, Sweden seems committed to achieving the ESD target, the measures are comprehensive and well-designed and their impact can be expected to be high if and when implemented.

- The NEEAP presents a strategy with a balanced distribution of measures among end-use sectors; buildings (housing and services, including agriculture), industrial sector, transport sector, horizontal measures and measures aimed at the public sector.
- The Plan includes good practice examples and innovative measures in all sectors. These include setting requirements stricter than those of the EPBD obligations, with gradual strengthening of building codes and issuing of building certificates for the entire stock of multiple-unit dwellings. Furthermore, the NEEAP proposes a set of measures for improving efficiency in agriculture. In industry, voluntary agreement schemes have been common, and Sweden plans to expand them to non-energy intensive industries. Eco-driving and social and urban planning to improve energy efficiency of transport can be expected to become good practices. Energy services have already been promoted, and a programme to improve by building upon past experiences is planned. In general, the strategic and systematic structure of the plan is exemplary considering also the emphasis Sweden places on a well functioning system for statistics, monitoring and verification.
- If taking into account both early action (implemented between 1991/95-2005, and planned by 2005) and "potential future actions", early actions are in majority.
- The majority of the savings can be expected to come from additional national measures as opposed to those implementing Community obligations.

Summary of strengths

- High intermediate target indicated (though not formally committed to).
- A Commission was set up to assess the potentials and propose appropriate measures with a view to achieving the ESD target, therefore the NEEAP is based on strong background policy research. The NEEAP appears coherent with clear priorities.
- Balanced coverage of sectors, best practice measures in all sectors.
- Strong emphasis on research, development and demonstration.
- Innovative role for web based information portal.
- Strong efforts planned for the exemplary role of the public sector and the dissemination of the results of its actions.
- Co-benefits of elaborating the NEEAP are acknowledged, such as improving the statistical basis for assessment and analyses.

Summary of weaknesses

- The NEEAP includes two lists of measures – early actions and potential future measures, however their role, interaction and respective contributions to the target is not clarified. Although it seems that Sweden plans to achieve the savings from the additional new measures ("potential future measures") this cannot be clearly established based on the information available in the NEEAP. The potential future measures represent a proposal put forth by the Commission for Inquiry, not a strategy that the government seems to have adopted or committed itself to.

- Energy use in aviation and shipping (international transport) has not been excluded from the reference consumption for the base years used to calculate the savings target.
- The split between early actions and new measures is before and as of 2005, while according to the Directive it should be before and as of 2008.
- The description of measures is sometimes lacking in detail and the actual actions expected to be undertaken to implement these are unclear.

Role of public sector

The exemplary role of the public sector is clearly stated. With regard to communicating its exemplary role and its actions to citizens and/or companies and ensure exchange of experience on energy efficiency practices among public sector bodies, a benchmarking system is to be introduced for local authorities within the Forum for Energy Efficiency Improvement. This system will allow the general public to compare the energy performance of local authorities and their buildings, and get information on their activities. Moreover, it will allow public bodies to exchange experiences on energy efficiency among themselves. A web-based information portal is to be developed to disseminate information concerning good examples to various stakeholders.

Sweden, while accurately paraphrasing the provisions for Public Procurement from Annex VI of the Directive, only indicates areas that they plan to address without identifying specific measures that they will adopt to meet the provisions.

Provision of information and advice

Sweden plans to introduce strong and innovative information measures. Information availability and dissemination is expected to have a considerable impact on individual energy consumption and on the energy performance of public bodies, and to foster energy efficiency improvement. Coordination is planned under the Forum for Energy Efficiency Improvement, an information centre. The main channel and tool for such information dissemination will be a web-based information portal.

The Swedish NEEAP does not appear to include information regarding the establishment of appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

Conclusion

The NEEAP of Sweden is in compliance with the major reporting provisions of the Directive; it covers the period 2008-2016, sets intermediate and overall targets of 6.5% and 9% respectively. The calculation of the target is in line with Annex I of the Directive, except for minor points. Where the methodology has not been followed justifications have been provided.

The NEEAP is a coherent and clear document. However it cannot be considered a strong and realistic strategy with regard to attaining the savings target, due to the lack of clear commitment to the measures currently described as potential future measures. The measures display numerous innovative elements, and the NEEAP complies with most provisions of the Directive. However, the plan is only a proposal made by the Commission of Inquiry to the Swedish government, and as such it still requires subsequent formal adoption by the Swedish government before it can be considered a strategy that will be implemented.

In spite of its shortcomings, the Swedish NEEAP seems to already deliver the 9% savings from early actions, and considering only the new actions, if all of the proposed new measures will be adopted and implemented, the NEEAP seems a realistic and ambitious strategy on the intermediate and overall targets.

THE UNITED KINGDOM

General evaluation

In its National Energy Efficiency Action Plan the UK adopts a 9% target for 2016, but indicates that it expects savings from key policies and measures to be equivalent to 18% by 2016 without formally committing to this higher target. The UK has however adopted a 9% intermediate energy savings target for 2010. The UK presents a very ambitious and comprehensive NEEAP, which covers the period 2008-2016 and includes expected energy and carbon savings by 2020. The overall and intermediate national indicative energy savings targets appear to have been calculated in line with the provisions of the Directive.

- The NEEAP presents well-conceived packages of complementary measures aimed at households and the tertiary and transport sectors.
- The NEEAP places a strong focus on new and existing buildings (mostly residential), where application of building codes and suppliers' obligations are the key instruments for delivering savings in new and existing buildings.
- The measures seem realistic and the majority are early actions that are still ongoing. The majority of measures are national in nature.
- Good practices include strong involvement of energy suppliers in the delivery of energy efficiency improvements, with a promising combination of a carbon tax and voluntary agreements, targeting both behavioural change and technical improvements, commitments to zero-carbon homes and to phase out incandescent lamps in the residential sector, where an efficient alternative exists, as well as investment in public transport and behavioural programmes in the transport sector. The Carbon Reduction Commitment[69] is an innovative measure, which builds on the Energy Efficiency Obligation significantly increasing its level of ambition and scope. It now also includes micro generation and behavioural measures.

Summary of strengths

- Level of ambition: both the 2010 and 2016 targets are set to 9%, while 2016 savings are estimated at 18% with only savings from post-2000 measures being considered towards the target.
- Continuity of the NEEAP, which is built on prolonging and extending many successful schemes. Focus on compliance (building codes).
- Strong role of the public sector, where measures cover every aspect: from governmental administrative buildings, through government subsidised (social) housing, health care and education - and reliance on a set of complementing measures, such as standards, assessments and ratings, funds.
- Deployment of a range of instruments in each sector spanning from technical and communication/information, to technical assistance and behavioural measures.
- Good set of mostly ongoing measures in transport.

[69] Energy supplier obligation

- Sound and comprehensive communications strategy. Behavioural change targeted in combination with measured aimed at promoting and facilitating technical improvements.
- Massive programme planned to provide smart meters in the residential sector, mandating it for large energy users;
- Supplier obligations account for 40% of the household savings in 2016; another 40% is expected to come from the strengthening of building codes.

Summary of weaknesses

- Numerous schemes target the same end-use sector, but the plan does not explain how they are linked, how they would complement each other or how double counting of savings would be avoided.
- Non-ETS industry is covered by the CCAs and the CRC, but no measures exist or are planned aimed at energy efficiency in horizontal technologies in industry (e.g. motors, etc.).
- UK ETS is not eligible under the Directive: it includes installations covered by the Community ETS and it also uncertain if measures undertaken under this scheme will still generate savings in 2016 (it ended in 2007).
- A few measures need to be further elaborated (e.g. Package of Measures in the residential sector, upgrade of building codes, Northern Ireland EE levy, Product Policy and SME actions in the tertiary sector).
- Some confusions have been noted concerning: interactions between the domestic 6-star rating system for buildings and the EPBD certificate. In general limited attention is given to the EPBD certificate, which is presented only as an information measure, while for other purposes the domestic 6-star rating scheme is to be used.
- Part of the savings from EEC-1 and possibly EEC-2 will probably not be alive in 2016 (e.g. CFL and appliances from EEC-1). The same applies to savings stemming from the CCAs.
- Green financing products – a potentially promising measure – is only mentioned under communications.
- The proposed metering and billing measures seem very well organised but it is not indicated who will pay for the installation of the advanced meter.

Role of public sector

The UK NEEAP places a strong emphasis on the public sector and makes a series of commitments to move towards zero carbon buildings.

The Central Government introduces a number of quantified targets to reduce carbon emissions from offices and road vehicles, to increase energy efficiency per square meter in Government Department buildings, and to move towards a carbon neutral Central

Government's office estate[70]. The NEEAP also refers to the Sustainable Procurement Action Plan and that an increased range of energy-using products is covered by the minimum environmental standards, as well as Central Government procuring only buildings in the upper quartile of energy performance.

While the NEEAP of the UK provides information about numerous initiatives and declarations related to future action in the public sector, it is difficult to identify precisely how these statements relate to concrete measures as indicated in Annex VI of the Directive. It has been indicated that specific measures from Annex VI would be adopted by May 2008.

The NEEAP contains a number of actions facilitating and enabling the exchange of good practices between public sector bodies. It is unclear what measures will ensure the effective communication of the exemplary role and actions of the public sector to citizens and/or companies.

Provision of information and advice

The NEEAP includes good measures related to the provision of information, advice and training. Appropriate conditions have been proposed for market operators to provide more information and advice to final customers on energy end-use efficiency.

Conclusion

The UK has submitted a very ambitious NEEAP, which builds on a comprehensive set of measures covering households, tertiary sector and transport. The NEEAP is generally coherent and thorough in nature. The intermediate target is very ambitious and could only be achieved with rigorous implementation and careful monitoring of the measures proposed.

The major focus is on residential buildings, where a good linkage is established between energy efficiency and social measures. The NEEAP puts a strong emphasis on the public sector via actions related to procurement, ambitious targets for governmental estate and housing, and active involvement of local authorities involved in the implementation of commitments. The NEEAP has a very good communication measures.

Savings in the transport sector are expected to deliver about one fifth of all savings in 2016. These savings might have been overestimated, even if there is a good mix of transport measures: taxation, trading and regulation, promotion of technological development and

[70] The Central Government targets include: (1) Carbon Emissions from Offices (reduce carbon emissions by 12.5% by 2010-11, relative to 1999/2000 levels; and reduce carbon emissions by 30% by 2020, relative to 1999/2000 levels), (2) Carbon Emissions from Road Vehicles (reduce carbon emissions from road vehicles used for Government administrative operations by 15% by 2010/11, relative to 2005/2006 levels), (3) Carbon neutral government (Central Government's office estate to be carbon neutral by 2012, by 2015 for Northern Ireland and by 2011 for Wales) and (4) Energy efficiency (Departments to increase their energy efficiency per m² by 15% by 2010, relative to 1999/2000 levels; and Departments to increase their energy efficiency per m² by 30% by 2020, relative to 1999/2000 levels. In addition action envisaged by devolved administrations to attain targets as outlined under measure 27. The Government has set a fleet average car procurement target of 130 g CO_2/km by 2010/11 for new cars purchased by Government and used for administrative operations.

encouraging behavioural change. In addition the United Kingdom authorities have included savings under the UK Emission Trading Scheme, but such savings are considered outside the scope of the Directive. Part of the savings from EEC-1 and possibly EEC-2 may not be alive in 2016, the same holds for savings coming from the CCAs.

The NEEAP only partially incorporates the spirit of the Directive insofar as limited or no attention is given to ESCOs, energy audits, and innovative financing tools. Finally, it is not clear what actions devolved administrations will take to implement the very ambitious policy statements in the public sector.

Annex II: Description of the evaluation framework

The template used for the detailed assessment and evaluation of each NEEAP addresses the minimum reporting requirements concerning the first NEEAP outlined below and is centred around six main areas: savings target, energy efficiency improvement measures and estimated savings, public sector coverage and provisions, information availability provisions, other issues of interest and conclusions. For each section detailed instructions and guidelines are provided to the evaluators.

The minimum reporting requirements, which are set out in Article 14(2) of the Energy Services Directive, are as follows:

> *All EEAPs shall describe the energy efficiency improvement measures planned to reach the targets set out in Article 4(1) and (2), as well as comply with the provisions on the exemplary role of the public sector and provisions of the information and advice to final customers set out in Articles 5(1) and 7(2) respectively*

The section on savings target includes an evaluation of the overall and intermediate targets in terms of compliance with provisions of the Directive, about the size of the target and its calculation method, as well as conversion factors used and sources of energy data.

The section on measures and estimated savings includes a detailed evaluation of each measure presented in the NEEAP. In the section, given the availability of data and information in the NEEAP, the evaluator attempts to establish or identify: whether the declared estimated savings from measures are at least equal to the declared targets; ascertain if measures are in the scope of the Directive; whether there is risk of double counting; and the share of savings and content of early actions. Moreover, this section identifies measures that qualify as potential good practices and/or innovative, it discusses the balance between new/additional national measures, or activities introduced by the Member States, and measures to transpose/implement Community legislation, it comments on whether calculation methods for estimating savings are explained and whether their underlying assumptions are outline, whether implementing agencies have been nominated/seem to be in place and whether budgetary provisions are given.

The section on public sector provisions examines the adoption of eligible energy efficient public procurement measures in the NEEAP (Annex VI of the Directive). A check is made on the compliance with the provisions to facilitate and enable the exchange of good practices between public sector bodies, and to communicate effectively the exemplary role and actions of the public sector to citizens and/or companies.

The section on information availability examines the actions/measures proposed for providing information and advice to final customers and their compliance with provisions set out in Article 7(2), including how greater efforts are made to promote energy end-use efficiency, creating conditions for market operators to provide more information and advice to final customers on energy end-use efficiency, as well as foreseeing incentives for market operators in order to provide more information and advice to final customers.

The section on other comments focuses on whether the Member State envisages facilitating and enabling the exchange and promotion of good practices, and includes further comments that the evaluators deem to be of interest with regard to the evaluation.

Finally, the section on conclusions addresses the level of ambition of the NEEAP, establishes if it presents a clear and coherent strategy that is realistic with regard to achieving the adopted ESD target, and summarises its strengths and weaknesses. It provides a synthesis of the strategy presented in the NEEAP, especially focusing on whether it is realistic and consistent with the intermediate and overall targets, highlighting its strongest and weakest aspects of the NEEAP that can offer the basis for further improvements.