IMPROVING AND IMPLEMENTING NATIONAL ENERGY EFFICIENCY STRATEGIES IN THE EU FRAMEWORK

FINDINGS FROM ENERGY EFFICIENCY WATCH II ANALYSES (JUNE 2013)

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Executive Summary

Back in 2006, the European Parliament and the Council adopted the Energy Services Directive (2006/32/EC) requiring all EU Member States to reduce their annual energy consumption by 9% until 2016. The basic documents in which Member States have to set their targets and outline their actions are the so-called National Energy Efficiency Action Plans (NEEAP).

The EU-funded project Energy-Efficiency-Watch 2 (EEW2) aims to support the transparency and the implementation of both the Energy Services Directive and the Energy Efficiency Directive at European and national level. The main task is to build up knowledge via surveys and policy screenings. For this purpose, EEW made a screening of all 27 NEEAPs and assessed the quality of established governance frameworks, and the consistency of sectoral policy packages. Additional to the screening, interviews with national experts and practitioners were conducted in order to assess the level of ambition and the state of implementation of national energy efficiency policies.

The present final report summarises findings from both analyses and draws conclusions for the further improvement of energy efficiency policies at the European and national level.

Despite remarkable achievements, the overall picture of energy efficiency policy remains somewhat ambivalent in the NEEAP screening: An effective implementation of the measures introduced by EU Directives will require a higher degree of harmonisation and integration. Up to now, measures addressing different sectors are often not well aligned with each other or lack a clear design when it comes to their implementation at the Member State level. Moreover, certain end-use areas are still not addressed sufficiently (e.g. modal shift in transport, coherent policy packages for industry including carriage of goods, etc.).

The expert survey also showed an enormous disparity among Member States in the levels of ambition of their energy efficiency policies. In some Member States, the recognition of the economic, social, political and environmental benefits of energy efficiency drives ambitious legislation and funding programmes whereas others just do the bare minimum required by the European Directives (and sometimes even less than that). A large number of experts, especially from countries where energy efficiency is currently not a political priority, stressed the crucial role of EU legislation in driving national energy efficiency policies. They mentioned that without EU directives no or almost no activities would have been carried out in their countries. Many experts especially consider the (first) EBPD (Directive 2002/91/EC on the energy performance of buildings) a milestone, catalysing a new legal framework for buildings.

The conclusion is that national energy efficiency policy packages have to be improved in all relevant sectors to achieve additional energy savings of at least 1% per year compared to autonomous energy efficiency improvements. 1% remains even modest if we know that the cost-effective potential is even 2% per year. It will, therefore, bring net economic benefits to businesses and consumers in the Member States, if these are more ambitious in the implementation of EU Directives but also with their own measures.
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1 Introduction: Challenges for an Integrated European Energy Efficiency Policy

When the European Union established the Directive 2006/32/EC\(^1\) on Energy End-Use Efficiency and Energy Services (ESD) in 2006, it was hoped that Member States would begin to systematically harness the untapped energy saving potentials by tackling numerous barriers to energy efficiency and addressing the specific problems in each of the end-use sectors in a comprehensive and strategic way. As a framework directive, the ESD called to set Member States an indicative 9% target for cumulative annual energy savings to be achieved by 2016, to provide mechanisms, incentives and institutional, legal and financial frameworks to achieve this target and also to create the conditions for the development and promotion of markets for energy services (Art. 1). The Directive targeted not only public authorities but also private investors in energy efficiency, energy distributors, distribution system operators, retail energy service companies and final consumers (Art. 2).

In order to make energy efficiency policy in the Member States more transparent, the Directive requests the Member States to draft three consecutive National Energy Efficiency Action Plans (NEEAPs) in the years 2007, 2011, and 2014. These plans are supposed to outline the policies and measures by which the Member States intend to achieve the indicative target of 9% final energy savings by 2016 required by the ESD. Eight years after coming into force the drawing up of NEEAPs can be seen as one of the most important requirements of the Directive as it encouraged many Member States to make use of these plans as a comprehensive, strategic policy tool that eventually enables them to better co-ordinate their set of energy efficiency policies and measures.

Apart from the description of policies and measures (both implemented and planned ones) in each sector, the NEEAPs were also supposed to report on the nationally agreed energy saving targets for 2010 and 2016. The plans must further include calculations of the expected savings, and details on the evaluation methods used. From the second NEEAP onwards, Member States are also requested to report on the actual savings achieved so far.

The Energy Efficiency Watch (EEW) project was initiated in 2006 when a group of European, national and regional parliamentarians called for a close co-operation of the European, national, regional and local authorities, and all relevant stakeholders in implementing energy efficiency policies so as to achieve the goal of ‘making Europe the most energy-efficient economy in the world’. The European Forum for Renewable Energy Sources (EUFORES) was tasked with the co-ordination of the project, which is co-financed by the European Commission through the Intelligent Energy Europe Programme. EEW particularly aims at facilitating the implementation of the Energy Services Directive (ESD) at the national level by supporting its main target groups, which are Parliamentarians at European, national and regional level, but also civil servants and experts involved in drafting the NEEAPs and implementing energy efficiency policy. One important means for achieving the goals of EEW is to activate, consult and strengthen key actors in the field of energy efficiency: therefore, the important European networks ECEEE (European Council for an Energy Efficient Economy), FEDARENE (European Federation of Regional

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Energy and Environment Agencies), and Energy Cities (Association of European local authorities) are partners in the project consortium.

One of the main objectives of the second phase of the EEW project is to gain insight into the progress that Member States have achieved in terms of energy efficiency policy since the first round of NEEAPs.² The key products by which this assessment of national policy progress will be presented are 27 National Reports. These documents are based on three main sources of information:

- A screening of each Member State’s policy portfolio based on the second NEEAPs,
- A broad survey among experts/practitioners on how they perceive the achieved progress in energy efficiency policy since the first round of NEEAPs, and
- In-depth interviews with selected national experts with the goal to find out what is happening ‘beyond the paper’, i.e. what really works in the field and what does not.

The present final report synthesises the main findings from the screening of NEEAPs as well as the results of a large quantitative and qualitative survey conducted in 2012 with energy efficiency experts throughout Europe. While the detailed findings at Member State level have been published elsewhere³, this report especially focuses on cross-country and sectoral analyses. The report concludes with recommendations for the improvement of energy efficiency policy at the European level.

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² The first round of NEEAPs was screened by Wuppertal Institute and Ecofys in the first EEW project (see: energy-efficiency-watch.org)

2 European Framing of National Energy Efficiency Policies

2.1 Trends and Market Developments of Energy Efficiency in the EU

Numerous studies have identified substantial and economically viable potentials to increase end-use energy efficiency. The most recent one, conducted by Fraunhofer-ISI, shows that about 57% of the European final energy demand can be saved until the year 2050 compared to baseline scenarios with technologies and organisational approaches which are in principle already available.

![Figure 1: Overall Final Energy Demand and final energy savings (figure shows the relative saving potential in 2050 compared to baseline)](source.png)

Besides the effects of energy efficiency policies in reducing emissions and energy consumption, a number of co-benefits have been identified such as the increase of energy security e.g. by reducing (national, regional) dependency on international energy imports, by improving international competitiveness, resulting from lower energy costs and technology innovations, by improving national key indicators such as GDP, direct climate-related and induced investments, consumption and

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employment, and finally, by reducing energy costs and life-cycle costs of end-use technologies for consumers.  

Although increasing energy efficiency can obviously achieve win-win situations for society as a whole, it is surprising that many structural, economic, and social psychological barriers to energy efficiency are still in place (e.g. Thomas 2007, Sorrell et al. 2004, IEA 2000, Nilsson and Wene 2002):

- **Lack of information and motivation:** There is a lack of information on energy-efficient solutions and the associated options to achieve energy and cost savings, not only on the demand side but also on the supply side of energy-efficiency markets (e.g. manufacturers, retailers, installers). Furthermore, numerous actors must make the “right”, i.e. the most energy-efficient choice in numerous every-day, planning and purchasing situations. However, energy efficiency is just one of many factors influencing these decisions.

- **Financial restrictions:** The lack of access to capital also constitutes a barrier to investments in energy efficiency, mainly in the residential and public sector. In the industry and commercial sector, however, firms usually prioritise investments in their core business by energy efficiency measures or to invest in short payback periods.

- **Split incentives:** In many cases, there is an investor-user dilemma, i.e. the actor who has the opportunity to invest in energy efficiency improvement (e.g. a landlord or landlady) is not the one benefiting from the resulting energy cost savings (e.g. a tenant) and vice-versa.

- **Risk aversion:** The sometimes lengthy payback periods for long-term investments in energy efficiency are a risk which many end-users try to avoid. Potential providers of efficient solutions also face the risk whether the market will accept these solutions. Moreover, there is considerable uncertainty about the transaction costs involved in order to obtain information and about the costs and benefits of improving energy efficiency. Consequently, risk aversion prevents economic actors from assessing the economic viability of energy efficiency measures over the whole lifetime of the equipment and thus noticeably reduces the perceived and realised cost-effective potential.

- **Power Structures and resources:** In many member states, energy in public discourses is still framed as an issue of supply and only subordinately as an issue of demand. This might be related to the power structures in decision-making processes in which “traditional” energy suppliers want to secure sales markets for energy and do not regard themselves as provider of energy services.

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2.2 Improved policy framework at European level

In order to address these obstacles, the EU has updated or recast a number of relevant directives and regulations since the publication of the first NEEAPs in 2007/08, such as, for example, the Ecodesign Directive, the Energy Performance of Buildings Directive, the Energy Service Directive (as Energy Efficiency Directive):\(^6\)

**Ecodesign Directive (EuP/ErP)** – The recast of the Ecodesign Directive (2009/125/EC) in October 2009 led to an extension of the scope of the Directive. Both energy-using products and energy-related products (e.g. windows, insulation etc.) now fall under the scope of the recast Directive.

**Energy Performance of Buildings Directive (EPBD)** – The recast (Directive 2010/31/EU) in October 2010 extended the scope of this Directive on all existing and new buildings:

- All Member States shall ensure that minimum energy performance requirements for buildings are set at cost-optimal levels. Member States have to report the monitoring methodology used to the Commission (who can call for additional efforts).
- Upon “major renovation”, the energy performance of a building shall be upgraded to meet the minimum energy performance standards.
- From 2019 on Member States shall ensure that all new buildings occupied or owned by public bodies will be built nearly zero-energy. After 2021, all new buildings should be “nearly zero energy”.
- All Member States are called upon to draft national plans for increasing the number of nearly zero energy buildings.

**Energy Efficiency Directive:** Backed up by a new EU Energy Efficiency Action Plan (2011), the Energy Efficiency Directive (EED, 2012/27/EU) was adopted by the European Parliament and the Council. As an amendment of the Directive on Energy End-Use Efficiency and Energy Services (ESD, 2006/32/EC) the EED now sets legally binding measures and thereby defines specific provisions for the various energy consuming sectors. The EED inter alia requests member states to establish a long-term strategy for the renovation of the building stock: to retrofit 3 percent of the total floor area of all central government-owned public buildings annually from 2014 onwards, to implement provisions for green procurement, to institute an energy efficiency obligation scheme, to increase the use of smart meters. As the ESD, the EED has requested member states to set up National Energy Efficiency Action Plans (NEEAP), with reports on implemented energy efficiency policies and their estimated effects.

**Energy Labelling Directive** – Due to the recast (Energy Labelling Directive) in May 2010, the scope of the Energy Labelling Directive was extended on all energy-related products with significant direct or indirect impact on energy consumption (beyond mere household appliances), excluding means of transport.

A number of new Regulations have been enacted as well:

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\(^6\) see Höfele et al. (2013)
**CO₂ emission standards for passenger cars** – The Regulation setting CO₂ standards for passenger cars (Regulation No 443/2009) is the main part of EU legislation affecting CO₂ and energy performance in transport. The fleet average of all new passenger cars entering the market by 2015 will have to comply with the prescribed 130 g CO₂/km standard. This reduction shall be achieved by improving motor and drive technology and other technical improvements of the cars. Optimized tyres, too, are expected to further reduce fleet emissions to 120 g CO₂/km.

**Labelling of Tyres Regulation** – This Regulation (entered into force on 11/25/2009) applies the labelling principle specifically for tyres, in which the labelling considers the effect of tyres on fuel efficiency and various other parameters (Regulation (EC) No. 1222/2009).

### 2.3 From ESD to EED: Strengths, Weaknesses and Prospects of the Current Policy Framework

#### 2.3.1 The ESD and the first round of NEEAPs – Experience and main findings

The Directive on Energy End-Use Efficiency and Energy Services (2006/32/EC) which became effective in May 2006, set the indicative target for the EU Member States to achieve overall energy savings of 9% in the ninth year of application of the Directive (2016). Accordingly, each Member State has to draw up programmes and measures to improve energy efficiency and report on these in three National Energy Efficiency Action Plans (NEEAPs). The first NEEAP had to be submitted by 30 June 2007, with the second and third one to follow in June 2011 and 2014 respectively. They shall outline strategies to achieve the targets and, from the second NEEAP onwards, include an evaluation of the implementation process to date. Progress with regard to energy end-use savings is to be measured from 1 January 2008. The ESD listed examples of energy efficiency improvement measures which can be deployed to achieve the required energy savings. One approach envisaged by the Directive is that energy efficiency targets are to be realised in part by market actors in the energy supply industry.

The first round of National Energy Efficiency Action Plans (NEEAPs), published between June 2007 and June 2008 by Member States, showed an impressive scope of existing and new measures in energy efficiency policy. It was a first step towards coherent energy efficiency policy packages in EU Member States. However, these first NEEAPs were very heterogeneous in ambitions and levels of details.

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7 Additional regulations have been implemented especially in the transport sector, such as a further liberalisation of long-distance railway passenger transportation (Guideline 2007/58/EC, 2010), a regulation of bids in short-distance public transport (Regulation 1370/2007/EC). Regulation 71/2008 (“Clean Sky” Joint Technology Initiative) focuses on the efficiency improvement of airplanes. Additionally, aviation will be included in the European emission trading system.

8 See the analysis of NEEAPs conducted by Wuppertal Institute and Ecofys 2008, 2009 (energy-efficiency-watch.org)
provided, since neither the Directive itself nor the Commission had provided a common framework for reporting, evaluation and monitoring at that time.\(^9\)

However, both the Energy Services Directive and the Energy Efficiency Directive have had some obvious structural flaws which influenced, and are still influencing and will influence, the implementation process at Member State level: Targets to be formulated in the NEEAPs are both indicative and in most cases very moderate against the background of existing energy efficiency potentials in Member States. Moreover, the ESD (and also the EED) did not mention that energy savings counting towards the national 9% (or higher) target must be in addition to energy savings from autonomous changes.\(^10\) If the 9% include energy savings from autonomous changes (which are estimated between 0.5 and 1 % per year, hence 4.5 to 9 % in 9 years), a 9 % target will, for a large part, be achieved without any energy efficiency policy. Finally, one paragraph in the ESD has been interpreted by some Member States in a way that energy savings achieved before 2008 (‘early energy savings’) can be counted towards the target, thus even further diluting the directive.

A main observation of the NEEAP I analysis done by Wuppertal Institute and Ecofys (2009) was an obvious gap between energy saving potentials documented in the NEEAPs (if calculated), target setting according to the ESD and energy improvement measures displayed. In most plans, for example, the calculation of the target was not, or not sufficiently, linked to the calculated \textit{ex ante} effects of measures in 2010 or 2016. Only a few Member States were able to show that the energy efficiency improvement measures displayed in their plan were really sufficient to achieve the target (see also: Schüle et al. 2011).

### 2.3.2 Requirements for the second NEEAPs

Compared to the first NEEAPs, the role, scope and focus of the second plans were somewhat different compared to the first round according to the (non-binding) recommendations and guidelines of the NEEAP template provided by the European Commission (EC 2010)

- While the focus of the first NEEAPs was mainly the setting and calculation of the overall and intermediate targets and the listing of policies and measures (existing and planned), the second NEEAPs were supposed to focus much more on the achieved and expected energy savings. As required in the ESD (Art. 14), the reports also had to report in detail on the methodologies used for calculating these savings.
- The detailed description of the overall strategy as well as the individual measures remained the heart of the plans, but the extent of information to be provided for each measure had been enhanced considerably. In this context, the Commission’s guidelines also emphasise the need for

\(^9\) The EMEEES project (Thomas et. al., 2009), running between 2006 and 2009, provided suggestions for both a template for reporting and a sophisticated methodology for monitoring and evaluation (www.evaluate-energy-savings.eu).

\(^10\) Nevertheless, the 2006 EU Action Plan for Energy Efficiency obviously expected a strong contribution from ESD (and other Directives): „new policy“ leading to new and additional energy savings compared to autonomous changes and previous policy (EC 2006b)
narrative illustration and a level of information given that allows for impact evaluation of all listed measures.

- Member States were called upon to draw up separate chapters for each provision of the ESD regarding the following: the role of the public sector, availability of advice and information, contributions from energy companies, and the market for energy services.

- Member States were also encouraged to draft their plans more as a universal, strategic policy framework document, comprehensively outlining the complete national strategy for improving energy efficiency. Consequently, apart from its legal function in terms of complying with ESD reporting requirements, the second NEEAPs should also demonstrate a Member State’s general level of ambition and bring together all efforts made, strategies pursued and targets set in terms of energy efficiency improvement and (final and primary) energy savings, not only those falling under the scope of ESD.

- This widening of the scope entailed that Member States may – and were encouraged to – also include the reporting required under the EPBD in their second NEEAP. Moreover, by requesting that primary energy saving targets and projections as well as energy saving measures on the supply side should be included, it was intended to establish a link between the ESD process and the EU target of 20% primary energy savings by 2020, which was reconfirmed by the heads of state at the European Council meeting in June 2010.

With the intended change of NEEAPs from a document merely drafted to meet ESD requirements towards a far more comprehensive, strategic policy tool, the new NEEAPs were supposed to contribute to better align and co-ordinate within each Member State the efforts made towards improved energy efficiency.

2.3.3 Parallel process: the Energy Efficiency Directive

In 2012, the Energy Efficiency Directive (EED, 2012/27/EU) was adopted by the European Parliament and the Council. As an amendment of the Directive on Energy End-Use Efficiency and Energy Services (ESD, 2006/32/EC), which became effective in May 2006, the EED represents a step towards further regulation and co-ordination of the Member States’ activities in energy efficiency. The EED sets legally binding measures and thereby defines specific provisions for the various energy consuming sectors. The EED inter alia requests member states to establish a long-term strategy for the renovation of the building stock: to retrofit 3 percent of the total floor area of all central government-owned public buildings annually from 2014 onwards, to implement provisions for green procurement, to institute an energy efficiency obligation scheme, to increase the use of smart meters.
3 Analysis of Energy Efficiency Policies in European Member States

The objective of the analytical part of the Energy Efficiency Watch project was to conduct a screening of the second NEAAPs, to complement this screening by a survey with European energy efficiency experts and stakeholders and finally to extract good practice examples of national policies. In the following, criteria for methods will be described (chapter 3.1), before the results from the NEAAP screening are presented from a cross-national and sectoral perspective (3.2). Subsequently, the findings from the expert surveys will be documented (3.3), before the summary assessments of the 27 National Reports combine both analyses (3.4).

3.1 How to analyse policies? Methods and criteria applied in the screening process

3.1.1 Conceptual reference points

The screening of the second round of NEAAPs especially focused on two main aspects: the state of development of integrated policy packages and the design of overarching governance frameworks for energy efficiency policy in EU European Member States.

(1) Integrated policy packages and overarching governance framework as assessment criteria

Experience has shown that a comprehensive mix of policies is likely to be most effective to reduce energy consumption (Thomas et al, 2013, Höfele et al. 2012). Price incentives, e.g. via energy taxes or emissions trading are important but certainly not sufficient to tap the full potential in different sectors. Also legal provisions for minimum efficiency standards in the building sector only address a part of the savings potential, as standards only apply for standardised products or components and not for system optimising.

For the building sector two types (and foci) of integrated policy packages can be distinguished in principle: (1) Packages directly addressing final energy consumers or end-use technologies in the different sectors and (2) packages complementarily focussing the “supply side” of measures and services, such as energy companies, energy service companies (ESCOs), architects, installation contractors, manufacturers etc. In NEAAP I, all Member States have displayed strategies that belong to the former category. Packages addressing the “supply side”, however, can only be designed, when basic structures have already been established. The analysis of NEAAP I carried out by the Wuppertal Institute and Ecofys in 2009 shows that this type of measure has been rather underrepresented (Wuppertal Institute and Ecofys 2009, see also: Thomas et al. 2013).
The above mentioned components of comprehensive policy packages also include a third type of measures and activities: institutional measures. The International Energy Agency (IEA, 2010), for example, puts special attention to these framework conditions by distinguishing between enabling frameworks, institutional arrangements and co-ordination mechanisms. Such overarching frames provide stable conditions for related investments or services. For this reason, integrated policy packages should be complemented by consolidating efforts at Member State level targeting at:

- institutional framework conditions for energy efficiency policy (e.g. energy agencies, also at regional or local level),
- institutional and organisational framework conditions for energy efficiency programmes (energy efficiency mechanisms, see below)
- a legal framework (e.g. for energy services) and
- a participatory process involving stakeholders in national energy efficiency policy.

A few EU Member States already have substantial experience in setting up such supportive frameworks. For energy efficiency mechanisms, two approaches are usually distinguished: the government can establish the requisite framework either via an *energy efficiency obligation* or *mandatory savings target* (with or without certificate trading), or via an *energy saving trust or fund* (including, if appropriate, an *obligation for the energy industry to provide funding*).\(^\text{11}\) In such systems (especially the obligation-based

\(^{11}\) A third option, although not yet implemented in practice, is financial remuneration for feeding ‘negawatts’ into the grid. Here, similar to feed-in laws for renewable energies, the implementation of energy efficiency programmes is promoted by paying a fixed amount per saved unit of energy.
solutions), energy companies play a far greater role in supporting energy efficiency improvement compared to ‘conventional’ policy instruments. Moreover, many Member States have enhanced market-based improvement of energy efficiency with the help of energy efficiency service (EES).

(2) Process management of energy efficiency policy

In most of the first NEEAPs, a gap became obvious between national target setting on the one hand, and the development, implementation and evaluation of measures on the other. In most plans, targets were set according to ESD provisions (i.e. at 9%) and policies and measures were displayed without any direct or indirect relation to the target. This was, inter alia, due to the fact that, at that time, no guidelines or harmonised methodologies had been provided to support Member States in calculating the effects of their energy efficiency improvement measures.

![Diagram of process management of energy efficiency policy](image)

**Figure 3:** A prototypical process for policy development in energy efficiency


The prototypical process described in Figure 3 provides a procedural frame for Member States on how to align the process of national target setting with the development, implementation and evaluation of policy programmes. Starting with the assessment of the energy savings potential in each sector, a strategic plan (roadmap) has to be developed before supportive framework conditions and sectoral policy packages can be designed to tap the potentials. Ex ante evaluations of potential costs and effects allow to assess the total anticipated effects of savings compared to the national ESD target.
3.1.2 Generating Criteria for the Screening of NEEAPs 2011

Fields of assessment and criteria

On the basis of these prior assumptions and foci of analysis, criteria were developed for the screening of NEEAPs 2011. The objectives of the screening, conducted between November 2011 and March 2012, were to assess whether an effective governance framework for energy efficiency as well as comprehensive sectoral policy packages have been developed, to identify good practice of energy efficiency policy, and to discuss policy gaps, key barriers and areas for improvement.

The following fields of action and sectors were considered:

1. Overarching energy efficiency governance framework
2. Public Sector
3. Residential Sector (Buildings)
4. Residential Sector (Appliances)
5. Industry and Tertiary Sector
6. Transport Sector

Predominantly, the NEEAPs were used as the basis for the assessment. In cases in which Member States would have received a negative ranking for parts of their NEEAPs, additional information such as the MURE-database, national programmes and secondary literature were used. The tables below show the criteria and ratings applied to assess the governance framework (Table 1) and, as a representative for all sectors, the criteria and ratings applied to the public sector.

12 See Appendix 6.1
Table 1: Governance Framework: Criteria and ratings

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description/Sub-Criteria</th>
<th>Rating</th>
</tr>
</thead>
</table>
| Long-term EE target(s) and strategy | • General EE target 2020 (or similar timeframe) defined (i.e. not ESD target)  
• EE target 2050 (or similar timeframe) defined  
• Policy roadmap/strategic plan for achieving the target(s) exists | • Two or three of the subcriteria fulfilled = 2  
• One fulfilled = 1  
• None fulfilled = 0 |
| Involvement of non-governmental and market actors, and sub-national authorities | • Energy Companies (Art. 6.2 ESD)  
• ESCOs  
• Local authorities / regions  
• Further non-governmental actors (e.g., consumer organisations, trade associations, research institutions, etc.) | • Three or four of the actors have a role in EE policy (according to NEEAP) = 2  
• One or two of the actors have a role = 1  
• None has a role = 0 |
| Energy agencies and climate protection agencies | • National energy agency  
• Regional and/or local energy agencies | • Energy agencies exist at two or three governance levels = 2  
• Energy agency(ies) at one governance level = 1  
• No agencies = 0 |
| EE mechanisms for overall coordination and financing | • Energy efficiency obligations and white certificate schemes  
• Energy efficiency trusts or funds  
• EE funding through national budget and overall coordination | • Either EEO or trust established = 2  
• EE funding through budget + overall coordination = 1  
• No overall coordination = 0 |
| Favourable framework conditions for energy services | • Guarantee funds  
• Standardised contracts  
• Removal of legal barriers, if any  
• Other supportive framework conditions | • Either EEO or trust established = 2  
• EE funding through budget + overall coordination = 1  
• No overall coordination = 0 |
| Horizontal measures | • Energy (or CO2) taxation higher than EU minimum rates  
• Voluntary agreements (in more than one sector)  
• R&D support, e.g., energy research subsidies  
• Others | • Two or more of the subcriteria fulfilled = 2  
• One of the subcriteria fulfilled = 1  
• None fulfilled = 0 |
| Monitoring, reporting and verification | • share of top-down and bottom-up calculations used,  
• evaluation methods allow for differentiation between autonomous and additional savings | • Advanced MRV (i.e., should be able to differentiate between all and additional savings) = 2  
• Basic MRV = 1  
• No or insufficient MRV = 0 |
| Any other issues relevant for the general assessment of the NEEAP and the EE policy framework | (No rating, to be included in summary text)  
• Thorough analysis and evaluation of NEEAP1 (i.e. a clear distinction between NEEAP1 and 2 measures);  
• Information about implementation progress of NEEAP1 measures  
• early savings | |
**Table 2: Public Sector: Criteria and ratings**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description/Sub-Criteria</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector strategy</td>
<td>• Public sector strategy (vision, mission, clear goals and funding provisions, a realistic and binding timescale)</td>
<td>• Element fully included = 2</td>
</tr>
<tr>
<td></td>
<td>• Role model</td>
<td>• Partly included = 1</td>
</tr>
<tr>
<td></td>
<td>• Public relations activities to make strategy transparent and to act as role model, incl. demonstration projects</td>
<td>• Not included = 0</td>
</tr>
<tr>
<td>Role model, transparency, and demonstration</td>
<td>• Role model</td>
<td></td>
</tr>
<tr>
<td>Public procurement</td>
<td>• Public procurement (energy criteria, clear responsibilities)</td>
<td></td>
</tr>
<tr>
<td>Public buildings</td>
<td>• Public buildings (targets, energy management, agencies, funding, energy criteria, reporting)</td>
<td></td>
</tr>
<tr>
<td>Adequacy of policy package</td>
<td>• Supply and demand side of EE markets addressed</td>
<td>• Three or four of the topics addressed/ considered = 2</td>
</tr>
<tr>
<td></td>
<td>• Different actors and their specific barriers considered</td>
<td>• Two of the topics addressed/ considered = 1</td>
</tr>
<tr>
<td></td>
<td>• Potentials considered</td>
<td>• One addressed = 0,5</td>
</tr>
<tr>
<td></td>
<td>• (policy design is based on an assessment of the energy saving potentials in each sector or even sub-sector)</td>
<td>• None addressed/ considered = 0</td>
</tr>
<tr>
<td></td>
<td>• Policy mix well balanced (the three following aspects should be addressed: financing/subsidies, binding/regulatory instruments, information/advice)</td>
<td></td>
</tr>
</tbody>
</table>
(2) Criteria for identifying good practice policies and measures

The screening was also conducted to identify examples of good practice of energy efficiency policy in the respective Member States. Policies are here regarded as good practice when they either establish comprehensive sectoral policy packages, deliver innovative and/or effective individual measures, or show a good performance in terms of governance frameworks or policy planning and management.¹³

The selection of good practices took into account the following criteria:¹⁴

- New/innovative approach
- Potentially large energy savings
- Effectiveness
- Cost-effectiveness
- Few free-rider and rebound effects, spill-over effects likely
- Co-benefits (e.g. health, competitiveness, etc.)
- Good for combination with other policies
- Replication and transferability
- Stable governance (management, funding)
- Role as element of package

¹³ In terms of ratings, good examples must have achieved an average rating of at least 1.5 in order to qualify as good practice.

¹⁴ In the national reports, the section on good practice also includes examples identified through other sources, such as a) the stakeholder interviews, b) the project partners, especially the networks, based on their experience, c) the ODYSSEE-MURE national teams (http://www.muredatabase.org), d) discussions during EEW events, and e) the survey.
3.1.3 Approach and methodology of the expert survey

The approaches chosen for the stakeholder survey aimed at reflecting the variety of experiences of a broad range of actors spanning 27 countries with vast differences both in energy efficiency policy traditions as well as in specific progress in the past years.

Stakeholders consulted came from the national, regional and local levels (administrations and energy agencies), from the research and consultancy community as well as from NGOs, professional associations and businesses.

The following methods were chosen to collect inputs:

- the quantitative survey, using a relatively short questionnaire, aimed at reaching a large number of stakeholders and providing an insight into overall trends, mostly in which sectors improvements were made and which in sectors not

- the qualitative survey (interviewing of carefully selected energy efficiency experts in each Member State using an interview guideline) had the objective of getting a deeper understanding of specific reasons for the lack of progress as well as collecting good practice examples of energy efficiency policy implementation

- the inputs from the members of the 3 partner networks were collected during dedicated discussions among network members, held at the occasion of other network meetings. This format allowed to compare the perspectives from different countries and to draw conclusions from the interactions.

- interviews were made with representatives of other major European energy efficiency networks and NGOs to collect sector-specific inputs based on an interview guideline.
(1) Quantitative Survey

In co-operation with the project partners and the University of Linz (Institute for Environmental Management in Companies and Regions) a relatively short questionnaire was developed and tested. It aimed at collecting quantitative data on the progress in energy efficiency policies and their implementation in each Member State since the first NEEAP had been adopted. This method allowed to reach a large number of stakeholders.

The questionnaire was grouped around the following main topics:

- overall ambition of the energy policy of the addressed Member State, the progress in the last years, the national energy savings targets
- policy fields and instruments especially addressed by the ESD (procurement, energy efficiency services, financial instruments, the availability of energy efficiency information, white certificates, energy audits, metering etc.)
- most important gaps in national energy efficiency policies as well as barriers
- energy efficiency policy measures to be introduced at European level as well as the overall impacts of energy efficiency policies

In order to be able to reach out to a large number of stakeholders, a two-fold approach was taken:

- conferences: experts were invited to answer the questionnaires at the occasion of major energy efficiency events, e.g. the World Sustainable Energy Days 2011 (held in Wels/Austria in March 2011), the EUSEW (European Union Sustainable Energy Week, held in Brussels in April 2011), the ECEEE summer study (held in Presqu’île de Giens/France in June 2011)
- online completion: the questionnaire has been available on the website of Eufores. The EEW partners informed and motivated experts in their networks and through partner energy efficiency networks in all Member States to participate in the survey.

Between March and November 2011, in total 655 completed questionnaires were collected.
The varying number of participants across Member States had to do with the presence of experts in the international events and the partner networks, language issues (the questionnaire was in English) as well as the size of the country (the lowest participation came from the 3 smallest EU countries).

Participants in the survey came from the business sector (25 %), from universities and research organisations (23 %), from the public sector (22 %), from energy agencies (12 %) and from other sectors (18 %).
(2) Qualitative Survey

Complementing the quantitative data, a qualitative survey was carried out. It aimed at developing a deeper understanding of specific reasons for the lack of progress as well as collecting good practice examples of energy efficiency policy implementation. In order to achieve best possible results, the approach to this survey was developed jointly by the partners.

As a first step, an interview guideline was developed and tested. It focused on critical issues as well as positive developments in different energy efficiency sectors (public, residential, service, industry and transport sectors).

A special emphasis was put on carefully selecting the interviewees aiming for a balance of different perspectives in each Member State. First, a list was collected by the project partners which included about 200 experts across all 27 Member states. The names came from the professional networks of the project partners, with an emphasis on experts from the participating networks. Also, experts involved in the Odysee-Mure project were included. All experts included in the list were deemed to have a good overview of energy efficiency policies in their respective countries as well as having worked in energy efficiency issues for a number of years and having gained a good insight into policy development and implementation.

As a next step, the experts were grouped in different categories (experts working on local, regional and national level, in research and consulting, in professional associations and NGOs).

In a partner meeting, the experts to be interviewed were jointly selected, with the aim to ensure a high level of knowledge and a balanced representation of different actors in each Member State. Also a reserve list was drawn up in case the experts selected were not available for an interview.
Each of the three involved networks (Fedarene, Energy Cities and ECEEE) took over 9 countries. In overall terms - keeping in mind how many surveys were carried out - the response was rather positive and many of the experts of the first list had been interviewed (without need to revert to the reserve list). However, in many cases, it took repeated contacting to establish a suitable date. In some cases, when experts turned out to be unavailable or not willing to participate, experts from the reserve list were selected.

After the phone interviews were carried out (which generally took between 45 and 90 minutes), a transcript was sent to the interviewee allowing him/her to clear up possible misunderstandings as well as offering the option to provide additional information. The interviews were carried out between April and September 2012.

The interviewers summarised the results from the 3 interviews in each Member State in a short "country summary", these are included in the annex.

In order to collect real insights and opinions, the answers of the interviewees are treated confidentially which is a standard approach in surveys. Their names are not disclosed.

In summer, a partner meeting was held in which the results from the quantitative and the qualitative survey were brought together, discussed and double-checked. Common conclusions for each country were agreed upon by the partners (which can be found in the following chapter). At this meeting, these results were also compared to the initial results of the NEEAP screenings carried out as another activity of the Energy Efficiency Watch project.

The project team agreed that the know-how available "on the ground" was very valuable and many experts - also due to the projects’ diligent approach - were willing to share their knowledge and insights. The members of the project team were impressed by the commitment and also by the very good work carried out in some countries despite very challenging policy and financial framework conditions.
3.2 The NEEAP Screening: Findings from cross-country analysis: ¹⁵

The main objective of both the NEEAP-based policy screening and the National Reports as a whole was to assess the policy progress that had been achieved at the level of a particular Member State and to derive suggestions as to how that state could improve its energy efficiency policy. In the following, we present a general overview and some in-detail results from the cross-country analysis.

3.2.1 Strengths and weaknesses of energy efficiency policies in Member States

Based on the analysis of 27 countries, we have drawn conclusions on strengths and weaknesses of the policy frameworks in EU member states.

Firstly, it is notable that the sector with most high-scores is the public sector. Many countries provide a balanced or even a well-balanced policy framework for this sector. Secondly, it is the good performing governance framework followed by the buildings and industry sectors with balanced policy frameworks. On the last places with mainly rather balanced policy frameworks are the appliances and the transport sectors. Concerning the overall governance framework, it can be stated that many countries already succeeded in establishing a balanced to well-balanced base which enables governments to introduce new laws and set guidelines for energy efficiency.

(1) Cross-country analysis of strengths

Based on the NEEAPs screened most Member States show a good performance and/or achieved considerable progress, for instance, in the following areas:

- **Energy agencies**: Almost all member states have established an energy agency, at least at the national level, with many also having agencies at regional and/or local level. This shows that the idea that such agencies are important agents for co-ordinating energy efficiency policies, for awareness raising, and as central contact points for all energy efficiency-related issues has gained widespread acceptance throughout the EU in recent years.

- **Buildings sector**: The need for economic incentives for energy efficiency measures in buildings to reduce the risks associated with lengthy payback periods has clearly been recognised by many member states. In addition, it can be observed that the policy packages that have been established for the buildings sector are already quite advanced, at least compared with other sectors. For one thing, this is obviously an effect of the Energy Performance of Buildings Directive, which requires member states to implement several concrete policies. On the other

¹⁵ The analysis performed is based almost exclusively on the information provided in the NEEAPs and in the MURE database, in order to ensure that all Member States are treated equally. Consequently, a low score for any of the criteria analysed could also be the result of a NEEAP lacking (detailed) information on the respective topic. The purpose of this assessment is not an absolute ranking among Member States but is focusing on each Member State’s individual conditions.
hand, we also conclude from this that European policy makers are increasingly recognising the large potentials that can be harnessed in this field and the multiple co-benefits that come with this.

- **Public sector procurement:** A third area where we detected considerable progress is energy-efficient public procurement: Most member states have introduced some sort of requirements, criteria, or lists of products in this regard. This is a development that can be clearly attributed to the provisions set out in the ESD with regard to the public sector. What remains largely unclear from the NEEAPs analysis, however, is to what extent these lists and criteria are actually being applied and what impact has been achieved with these measures. This indicates that the NEEAPs alone, at least in their current form, are not able to provide sufficient insight into the real practice and status of implementation of energy efficiency policies.

(2) **Cross-country analysis of weaknesses**

In most Member States, however, we have also identified significant policy gaps and/or implementation deficits in the following areas:

- **Long-term strategy:** In many member states there is a lack of vision beyond 2020 and measures to regular tightening and/or revising regulations and goals. The effect of a missing long-term strategy is uncertainty on energy efficiency governance which affects markets implying financial, educational and informational suppliers.

- **Education and training of building professionals.** As mentioned before, in the buildings sector the package approach has generally been implemented quite sufficiently. Nevertheless, one significant weakness clearly exists also in this sector: there is a huge lack of measures targeting the need for education and training of building professionals. This policy gap is particularly relevant because it has a direct impact on the effectiveness of other policies and the quality of implementation of energy saving measures in the buildings sector.

- **R&D support.** Regarding the generally weak transport sector a clear policy gap can be observed especially in terms of R&D support. Nine out of 27 member states have not implemented measures at all. Two thirds of the other countries mention only one measure and provide little information about it. It is obvious that R&D is a strong fundament to foster energy efficiency development and lays ground for action in the policy framework. A continuous energy efficiency development on basis of the latest research is important to reach the emission goals of the European Union.
3.2.2 Cross-country analysis of sectors and good practices

(1) Governance Framework

The governance framework generally receives good ratings and is therefore the second best sector rated. There are two main observations with regard to this sector: The first is that energy agencies exist in all member states on national and often on regional level as well. They offer a broad range of expertise in the fields of R&D, demonstration, market integration, audits & advice etc. and are therefore important actors in a country’s governance framework. The second observation is that many countries lack of an adequate long-term strategy with regular tightening and/or revision of regulations and goals. This indicator has to be improved by many member states in order to regularly increase efficiency on the basis of the latest research results.

- As described above, there is a lack of a long-term strategy in many countries. If a strategy is mentioned in the NEEAPs, it often refers to goals to be reached until 2020. A vision beyond 2020 can be found only seldom in the NEEAPs. On the other hand, Denmark, Finland and Germany have established good strategies. Here, especially Denmark can be named with its very ambitious strategy to be independent of fossil fuels by 2050.

- Many member states involve other actors into energy efficiency policy. That leads to a general good rating of this indicator. A broad consensus on energy efficiency policy and the possibility to use knowledge of many actors strengthens the governance framework.

- Energy agencies exist in all member states on national level. In many member states energy agencies operate on regional level as well providing expertise and services. This leads to a high rating in this sector assessment. The few countries with average ratings do not provide sufficient information in their NEEAPs or just have not established additional energy agencies.

- The indicator coordination and financing can be stated as well functioning in many countries. Here, a long list of countries can be regarded as good practice examples. In some countries on the other hand, it is not transparent who is co-ordinating the available funds. This uncertainty could cause confusion or problems on the demand and supply side.

- Concerning energy services a mixed picture can be observed. There are many well rated countries, but some member states receive a very low rating. This is due to no or few information provided by the NEEAPs, a lack of action, or a stagnation of implementation processes. In this regard, the Bulgarian NEEP is a good example, where energy efficiency funds are available and overall co-ordination is provided by the state. Industry, owners of public buildings and energy traders are obligated to save energy.

- The results for the horizontal measures show a mixed picture. Here, many countries with good ratings can be found next to countries with lower or even very low ratings. It is obvious that there is a lack of binding agreements or not enough measures have been carried out for receiving a better rating. Good examples can be found in the NEEAPs of Slovakia and Sweden. In Slovakia, the excise duty rates for gas and electricity are above the minimum rates and a CO₂ tax
is applied. As well R&D is promoted. In Sweden energy and CO₂ taxation as well as research programmes have been put in place.

- The monitoring, reporting and verification (MRV) scheme is working successfully in almost all member states. Countries with a balanced rating often show only top-down measures and have problems with the quality assurance. For some countries it is difficult to take account of the impact of an economic recession. There is still a long list of good practice examples. For instance, Cyprus or Spain can be described as such to name only two countries of the list. Cyprus uses only bottom-up methods but is very detailed. Additionally, saving estimates of the first NEEAP are compared with the actually achieved savings.

A good practice example for the governance framework concerning information can be extracted from the Danish NEEAP. Denmark has established a policy that strongly links the country’s strategy with regional activities of the Danish Energy Agency (DEA) as main actor and coordinator. Education and information provided by the DEA addresses different actors (e.g. end-consumers, businesses etc.) and companies have to report savings to the DEA which also contributes to transparency. Regions and local authorities are involved in the policy framework through the obligation to implement energy-efficient behaviour and procurement and to ensure energy-efficient buildings. Energy companies are involved via saving obligation schemes. The knowledge centre for energy savings is also involved providing information and coordinating between governments and research institutions.

A good practice for strategic planning can be found in the Bulgarian NEEAP. Bulgaria has adopted a strategy for the whole energy sector outlined in the “Energy Strategy of the Republic of Bulgaria up to 2020”. The strategy sets the reduction goal of 50% in primary energy intensity compared to 2005. The Energy Strategy is complemented by the National Energy Efficiency Strategy.

(2) Public Sector

Concerning the public sector, there are two main observations. The first shows that there is again a lack of a clear vision or strategy in many countries. The second shows the best results in comparison with all sectors cross-country wide. The other indicators, apart from the public sector strategy, show a mixed picture. To start with the indicator role model, many countries established a well-balanced policy. Here, demonstration and information measures are often carried out well. The indicator public procurement often shows good results. Requirements and lists of goods for public procurement had been issued in many countries. Concerning public buildings balanced results can be seen. Energy efficient contracting and requirements as well as funding for projects can be found in some countries. On the other hand, some countries show a deficit of clear targets, missing criteria or reporting schemes. The adequacy of policy packages varies between rather balanced and good results. All countries address different actors on the demand and supply side. However, some countries need to strengthen binding targets, and their activity to inform the public.
• In case of the **public sector strategy** there is often a lack specific strategies or vision with regard of the goal to be reached and in what time. However, in some cases energy plans had been established on the municipal level, as in Estonia or Cyprus. Two positive examples for a clear vision standing out from the others, are France and the UK. Both countries provide a clear strategy with roadmaps and mandatory targets, clearly defined responsibilities and a regular review of progress made.

• In regard to the indicator **role model** most countries achieved a balanced or even a good result. Outstanding examples are Belgium, Cyprus, Lithuania, the Czech Republic, Denmark, Estonia and Finland. In the Czech Republic for instance, there is a strong focus on the role model of the public sector, including demonstration and information projects as well as requirements for public bodies. In Estonia, the public sector constantly informs the public on its role and activities with respect to energy conservation and efficiency.

• The indicator **public procurement** also shows at least balanced but regularly good results. Here, Austria and Cyprus can be pointed out as good examples, to name only two from many. In Austria, public authorities are required by law to procure energy-efficient and environmentally friendly products. Besides, a large number of energy-efficient products and services are offered. In Cyprus, a national action plan was adopted and a list of products was drafted.

• The results of the **public buildings** indicator are balanced. It is problematic that some countries lack targets, energy management or energy criteria, and reporting. Germany and Finland can be named as good practice examples for this indicator. In Germany, for example, there is a broad scheme of measures addressing public buildings. It contains contracting and energy audits, building requirements, funding and investment programmes as well as information and advice projects. In Finland, energy audits, an energy management system, requirements for public buildings and a funding scheme are implemented in the policy framework.

• Finally, it can be observed that the **adequacy of the policy packages** varies inbetween rather balanced and well-balanced. All countries succeeded in addressing various actors on the demand and supply side of the market. The difference between the countries is the stage of commitment. The variation is due to how clear or binding targets have been set, how much the public is informed about respective projects and policies or how clear funding schemes are and whether they seem practical. Finland and the Czech Republic can be considered as good practice examples where these policy criteria function.

**Good Practice Examples:** Overall, there is a lack of a clear vision or strategy for the public sector. One exemption is the **Finnish** NEEAP. The policy package is well balanced and adequate to address the public sector’s needs. The NEEAP provides measures for public buildings and procurement as well as measures to ensure local government energy efficiency agreements. Different communication and advice measures are linked to the energy efficiency plans and agreements for state organisations and local governments. Furthermore, demonstration, research and development projects are funded and accomplished.

Also the public sector in **Belgium** may be seen as a role model in some fields. For instance, the public sector has designed strict criteria for procurement and buildings, information and pilot projects and a comprehensive mobility management system.
(3) Buildings sector

The buildings sector can be considered as success due to many good results and advanced regulation. At the same time, two out of ten indicators show results below the average of the other eight. These indicators are demonstration and education & training. An explanation is that only few countries mentioned these criteria in their NEEAPs, although demonstration projects or trainings are in practice. On the positive side, economic incentives have been established in most member states. Appropriate incentive programmes for both new and existing, residential and commercial buildings are in place. The minimum energy performance standards (MEPS) indicator shows average results. Here, the lack of clear targets and a regular tightening of MEPS often hinder a better rating. The indicator for other regulations shows a mixed picture. While half of the countries only mention one other regulation in their NEEAPs, the other half presents more and achieves a higher rating. Economic incentives are well established in all member states. Countries can profit from EU structural funds and are therefore able to promote renovation and energy efficiency retrofits. In praxis, a decline in funding and using of incentives can be observed due to the economic crisis. Financing instruments are in place in all countries, but at different degrees. Performance in this policy sector is also highly connected with the economic crisis. Energy performance certificates (EPCs) are usually in place, only differing in the number of requirements. The same can be stated about advice and audits. Only few countries do not provide any advice. The indicator information tools show average results. Almost all countries use information tools but it is not always clear in how far these are responding to the needs of the public. The adequacy of the policy package is above average. Both, supply and demand sides are addressed, but differ in between countries. A negative influence on the adequacy of many packages is the missing education & training aspect in the NEEAPs.

- As mentioned above the results for minimum energy performance standards are average. Some countries provide only few information on the issue which leads to a bad rating. The majority of member states have set basic MEPS which request only some minimum energy performance standards. A good practice example for higher standards can be found in France. Here, MEPS are in place for new and existing buildings, recently strengthened to very low consumption levels. Besides, enforcement mechanisms exist and standards are linked to a voluntary energy performance label and a financial support scheme.
- In regard to the indicator other regulations, some countries have established or planned further regulations like HVAC inspections or individual metering which can be observed in Estonia. Inspections of boilers and/or air conditioning systems can be found in many countries. Still half of the member states few effort in establishing other than the EU requested regulations.
- Economic incentives are well established in the member states due to EU structural funds. Many programmes support thermal insulation, retrofits or other measures for energy efficiency with subsidies, tax alleviations or low interest credits. However, the crisis of public budgets has both partly led to a finishing of subsidies for energy efficient investments and a decline of using existing funds.
- Typical financing instruments are low interest rates and soft loans for energy efficiency programmes. All member states established such instruments, but to a different extent. France and Germany are countries with very effective instruments. In order to promote energy efficiency within existing building stock, France has introduced the zero-rated eco-loan, an
interest-free loan. In Germany the state-owned KfW bank promotes low-interest financing for energy efficiency in buildings for both single measures and comprehensive retrofits, and for a new construction. The level of incentives increases with the energy performance level achieved.

- **Energy performance certificates (EPCs)** are established in all member states. In some cases, it is unclear how far and which measures have been carried out. This indicator, too, is not mentioned in all NEEAPs, underlining the general picture that EPCs are not regarded as a strong energy efficiency measure. Ireland has set up a building-energy-rating which is also linked to funding schemes. It is based on a study of the BPIE.

- In all but one member states **advice and audits** are available differing in the extent. General provider of information, advice and audits are energy agencies. Unfortunately, it is often not clear to what extent activities have been carried out in that area. This shows that advice and audit measures are still not used regularly and to a greater extent. In Finland, impartial advice for energetic refurbishments is easily available. There is a long tradition of assured quality and subsidised energy audits. In Germany independent energy advice is available and subsidised for both residential buildings (on-site advice) and SMEs.

- **Information** is provided more often than advice and audits. Most countries show at least average results. Information tools and measures vary strongly from congresses, campaigns, building up networks for professionals, websites etc. Austria is very active in this area and has established a great variety of measures. These include TV trailers, radio contributions, the “klima:aktiv” website, events, industrial fairs and contributions in print media, only to name some of the activities.

- As mentioned above, **demonstration** measures are often spared out in the NEEAPs reports. This leads to overall bad ratings of the indicator. In praxis, demonstration efforts can be seen in many countries. Support of RD&D activities since 2005 led to a considerable number of demonstration buildings in France. Other countries with good demonstration project are Germany, the Netherlands and Greece.

- In regard to **education & training**, there are many policy gaps in the NEEAPs. These gaps are confirmed by us and other experts and can be found in the survey report (see www.energy-efficiency-watch.org). Several and detailed measures aiming to improve the skills of building professionals, can be found in Austria, Italy and France.

- The **adequacy of the policy package** is generally well-balanced. Most negative are the missing education & training measures and in some cases demonstration objects. Luxembourg offers a good policy package with a NEEAP considering saving potentials, addressing different actors as well as the supply and demand side of the buildings sector.

**Germany** can be regarded as a good practice example concerning information, finance & incentives and governance framework. Minimum energy performance standards are in place for new and existing buildings undergoing major renovations. There is also a regular strengthening of targets and obligations.

**France** is a good example for enforcement mechanisms. An official Energy Performance Certificate has been issued in **Ireland** for each home which receives an energy upgrade detailing all energy efficiency measures carried out on the house. Energy performance certificates are also mandatory in **Germany** at time of sale or lease and contain improvement recommendations. Other measures as the Act on the
Promotion of Renewable Thermal Energy have additional impact on energy efficiency. Through the promotion programmes of the state-owned KfW bank, economic incentives in form of either direct grants or low-interest loans for EE in buildings are available for both single measures and comprehensive retrofits as well as for new construction. The level of incentives increases with the energy performance level achieved. Combinations of measures receive a bonus.

There are numerous activities aimed at informing and motivating end-users as well as professionals in terms of (inter alia) energy-efficient buildings. Independent energy advice is available and subsidised for both residential buildings (on-site advice) and SMEs.

Large-scale demonstration projects for energy-efficient refurbishment (e.g. “Low-energy house“) are promoted. These programmes have also an impact in terms of training/know-how transfer.

Luxembourg is a good practice example for a comprehensive offer of training and education of professionals of the buildings sector.

(4) Appliances sector

The appliances sector mainly shows rather balanced results. It appears that little effort was put into this sector. In many countries, EU regulations or directives have been adopted, but no or only few additional national regulations can be found in the NEEAPs. This sector needs to be improved by almost all member states to make a better use of energy efficiency potentials.

- **Minimum energy efficiency standards** (MEPS) were established due to the Ecodesign Directives. Here, additional regulations should be implemented. The Netherlands and Finland can be taken as orientation. In the Netherlands, there are efforts to accelerate the phase out of inefficient appliances. In Finland, efforts to inform relevant actors and to ensure compliance are made.

- **Economic incentives** are often not mentioned in the NEEAPs. Due to the economic crisis, existing incentives were put back in some countries. It is obvious that this indicator has to be strongly improved.

- **Energy labels** exist in all member states due to the EU Labelling Directive 2010/30/EC. Additional effort could be done in many countries. Germany is a good example and can offer orientation for others. Here, voluntary and mandatory labelling schemes are in place to inform consumers.

- In regard to **information tools**, there is great variety between countries. While some member states do not mention measures, others have established good tools. In Austria, there are some information tools to inform and educate consumers, like internet tools, energy advice and seminars. Germany as well can be seen as good practice example.

- **Education & training** measures are mainly not mentioned in the NEEAPs nor in the MURE database. Therefore it remains unclear whether there are isolated measures in some countries or not.

- Due to the general low rating of the total sector, it is obvious that the **adequacy of the policy package** is below average. EU directives are often the only meaningful measures setting a starting point but hindering to exploit the full potential of the sector.
The appliances sector is generally the weakest sector in the cross-country analysis. Nevertheless some good practices can be found in the NEEAPs.

Information is provided through labels using standards and therefore giving orientation as exercised in the Netherlands. Besides, information centres, websites and web based tools e.g. for calculating energy savings provide help and orientation. Those can be found in the Netherlands and especially in France. Concerning the governance framework, the implementation of the Ecodesign Directive on national level can be seen as first step. In France, there is a co-operation with the lighting trade union to remove the least efficient products from the market. Education & training remains undertreated in the NEEAPs, that might be different in reality.

Financial incentives targeting businesses are available in the Netherlands. Incentives are for instance energy investment allowances and tax rebates for the purchase of energy efficient equipment. A tax incentive is also provided by Ireland. The corresponding list of efficient equipment is also used as a best practice list by public bodies for public procurement. This instrument thus links public and private sector purchases and creates a greater market for the eligible energy efficient products. R&D funding (Energy Research Subsidy) is available for energy saving technologies but it is not clear whether the subsidy will be available also in future.

(5) Industry sector

The industry sector is amongst the sectors with low ratings. It seems that many member states see no need for action in the industry sector. EU regulations and directives as the European Emission Trading Scheme or the Ecodesign Directive are implemented in all member states, but additional regulations are limited which explains the comparatively lower ratings. Another problem of this sector is that indicators are not mentioned in several cases. Still some good practice examples can be found.

- Concerning standards in France, an agreement aims at removing least-efficient light bulbs earlier from the market than scheduled, additionally to the regulation of the Ecodesign Directive.
- For the Energy savings and action targets for individual companies (ES&A targets) the case of Bulgaria stands out as a good example. Here, individual energy saving targets have been set for 297 industrial systems with an annual consumption over 3.000 MWh.
- Various countries did not mention obligations and/or commitments in their NEEAPs or only name few measures. Hungary instead planned to establish voluntary agreements regarding energy audits and energy conservation. Reports on energy consumption are mandatory for big energy consumers.
- The indicator economic incentives generally receives good rates. Still the practice shows problems, say many experts (see the survey report on www.energy-efficiency-watch.org). In France, different funds for research and innovation on energy saving technologies, implementation of energy saving measures etc. are in place. This can be regarded as good practice.
• ** Tradable permits** are in place due to EU ETS. Some countries additionally use white certificates schemes which are seen by experts as rather effective. Good practice examples for White Certificates Schemes are described in the NEEAPs of UK and France.

• **Energy taxation** is at least at the minimum rate and could be raised in order to set incentives to invest in energy efficiency.

• In the case of **labelling**, the EU energy labelling regulation is in place in all member states. Germany uses a variety of ecolabels in addition.

• The **adequacy of the policy package** is differing strongly. Countries can be put into three categories basing on their ratings. One group failed to mention several indicators and additionally uses only EU regulations. The second group uses mainly EU regulations, while the third group goes beyond the standard EU requirements and established extra measures.

Most Member States’ activities are only relying on EU regulations, for instance the European Emission Trading Scheme or the Ecodesign Directive. Further efforts for minimum performance standards or obligations are only limited. For instance in **France**, an agreement aims at removing least-efficient light bulbs earlier from the market than scheduled.

White Certificates Schemes are implemented in some countries and experts judge them as rather effective. Good practice examples for White Certificates Schemes are described in the NEEAPs of **UK** and **France**.

One strength is of course the use of “other measures”, e.g. education, capacity building and energy audits. Good practice examples are given by **Austria, Estonia** and **Finland**, where educational measures play an important role. Some countries provide strong financial support in the industry sector. This includes subsidies and tax incentives, which are especially prominent in the NEEAPs of **France, Germany** and **UK**, where different funds for research and innovation on energy saving technologies, implementation of energy saving measures and support for audits are in place.

Setting energy saving targets to companies is a further good practice detected in **Bulgaria** which sets e.g. individual energy saving targets for industrial systems with an annual consumption over 3,000 MWh. Furthermore, these entities have to conduct energy audits every three years. **Sweden** established a programme for improving energy efficiency in the energy-intensive industry (PFE), which operates as a voluntary agreement between a company and the Swedish Energy Agency.
(6) Transport sector

Overall, energy efficiency in the transport sector is rather weakly addressed in the different NEEAPs and is therefore amongst the lower rated sectors. The best performing indicator are planning instruments having a generally good rating. Problematic are the indicators regulatory instruments and R&D support. Concerning the regulatory instruments indicator there is one dominating picture. While one large group of countries shows very low performance, the other smaller group shows good performance and therefore earns good ratings. In regard to R&D support, a generally low performance can be stated with few exemptions. Finland receives full scores in this sector and can be used for orientation for all indicators.

- In many countries planning instruments are established to a satisfactory or even good extent. In Slovakia for instance, a broad range of planning measures for different modes of transport on urban and national level have been established. And Malta has a comprehensive planning policy that focuses on modal shift and public transport.

- Regulatory instruments are, as mentioned above, divided between low and high rating results. Those countries where only a EU regulation (partly EC 443/2009) was implemented, received low ratings. Good practice examples can be found in Sweden and Finland where further regulatory instruments concerning different transport modes and diverse actors are addressed.

- Economic incentives can be found in all member states. The indicator receives generally balanced rates. Slovenia and Finland can be used for orientation due to their excellent performance.

- The performance of the information indicator is only average with bolters to both directions. Mainly only one measure is carried out or mentioned in the NEEAPs. In Denmark, Spain and others, a broad range of information and education measures in all sub-sectors have been set up.

- R&D support is a very weak part of many NEEAPs. The majority of member states does not mention any R&D support. Some countries mention at least one measure. It is not clear whether no R&D support is carried out or it is carried out through normal national funding with special dedicated sums. A large number of pilot and/or demonstration projects in different fields and modes of transport exist in the Netherlands. In Spain, applied research/feasibility studies are conducted in all proposed fields.

- In general, the policy package needs improvement. Few countries provide a comprehensive policy package. There is a lack of information in the NEEAPs and it is therefore not clear, if measures exist and are carried out at all. A first step is to mention measures in the NEEAPs, and if necessary to improve those on the basis of existing good practice examples mentioned in the respective indicator sections.
Overall, energy efficiency in the transport sector is rather weakly addressed in the different NEEAPs. One exception is Finland. Finland has implemented a policy package for the transport sector, which utilizes the complete set of instruments to achieve energy efficiency in the transport sector. One overarching goal of the policy package is the introduction of a modal shift by making public transport, cycling and walking more attractive. Finland also makes use of regulatory measures. Among these is the introduction of a general speed limit and mandatory tyre-pressure checks twice a year. In Finland, vehicle tax rates are dependent on the car’s emissions. The expansion of public transport systems is financially supported e.g. by funding the construction of right-of-way lanes for buses and subsidized tickets. Various measures aim to give guidance through information. Among these is the inclusion of energy-efficient driving in the curricula of driver’s education.

A good practice example from Slovenia is to link the subsidy for public transport providers to the number of km travelled by passengers and no longer to the number of km travelled on the road.
3.3 Assessing Progress and State of Implementation: Cross-country analysis based on the Expert Survey\textsuperscript{16}

3.3.1 Quantitative survey

(1) Progress indicator

In order to compare the progress across countries and policy field, a "progress indicator" was calculated from four relevant questions of the quantitative survey, namely question 1 (ambition of energy efficiency policies), question 2 (progress in the last 3 years), question 3 (national energy savings target) and question 5 (improvements in the "ESD focus areas" procurement, energy efficiency services, financial instruments and energy efficiency information). The answers were weighted (the most positive answer by 100, the least positive one by 0).\textsuperscript{17}

The ranking resulting from this calculation showed Finland, Denmark and Malta as the three countries where energy efficiency policies progressed most since the first NEEAP and Italy, the Slovak and the Czech Republic as those three where the least progress was made.

\begin{center}
\begin{tabular}{|c|c|}
\hline
Austria & 13 \\
Belgium & 18 \\
Bulgaria & 16 \\
Cyprus & 22 \\
Czech Rep. & 25 \\
Denmark & 2 \\
Estonia & 3 \\
Finland & 1 \\
France & 10 \\
Germany & 8 \\
Greece & 16 \\
Hungary & 20 \\
Ireland & 11 \\
Italy & 27 \\
Latvia & 12 \\
Lithuania & 18 \\
Lux & 3 \\
Malta & 3 \\
NL & 24 \\
Poland & 21 \\
Portugal & 6 \\
Romania & 23 \\
Slovak Rep. & 26 \\
Slovenia & 7 \\
Spain & 15 \\
Sweden & 9 \\
UK & 13 \\
\hline
\end{tabular}
\end{center}

\textbf{Figure 6: Progress indicators}

\textsuperscript{16} This section is mainly based on Egger et al. (2013)

\textsuperscript{17} The complete questionnaire is documented in Egger et al. (2013)
(2) Overall ambition

The first question of the survey intended to get an impression of the "energy efficiency policy climate" in each country and a feeling of how the experts see the general aspirations of their country in energy efficiency policies.

A very varied picture presents itself: Combining those that see the ambition as either "generally rather low" and those that see policies as "ambitious in a few sectors, less so in most others", the following picture emerges: the Czech Republic, the Slovak Republic, Italy, Cyprus and Poland are seen as the least ambitious by the experts from the respective countries. On the other end, Denmark, Luxembourg and Finland are rated highest by their country experts ("ambitious in a range of sectors" combined with "generally, rather high ambition"). This mixed picture across Member States results in an average across countries with 60 % with rather low levels of ambition and 40 % with higher levels of ambition.
Figure 7: EU 27: overall ambition of the energy efficiency policies

Source: Egger et al. (2013)
(3) Progress in the last three years

The second question focuses on the specific progress in the last 3 years. At the time when the survey started, this was the timeframe since the first NEEAP period.

The highest values for "no or very little progress" combined with "a few additional policies" are given by the experts from the Slovak Republic, the Czech Republic, Hungary and Lithuania with values around 90%. Experts from Italy and the Netherlands follow with values of more than 80%.

On the other hand, the experts from Estonia and Finland see the highest recent progress (around 80%), followed by Malta (71%).
Figure 8: **EU 27: progress of energy efficiency policies in the last 3 years**

Source: Egger et al. (2013)

(4) **National energy savings targets**

The next question relates to the national energy savings target foreseen in the ESD and how the experts see the performance of their respective country in achieving this target.

The most pessimistic were the experts from Ireland, the Netherlands and Romania (more than 50 % think that their national target will not be achieved), followed by Austria, the UK and Italy. The most optimistic were the Danish experts (80 % believe that their country will probably or certainly achieve the energy savings target), followed by the Finish (67 %) and the Estonian (55 %).
Figure 9: EU 27: achievement of national energy savings target

Source: Egger et al. (2013)
(5) **Improvements in ESD focus areas**

A group of questions focuses on the improvements in actual implementation in fields that are treated with special attention in the ESD:

- energy efficiency in public procurement
- the conditions for energy efficiency services
- financial instruments for energy savings (e.g. energy performance contracting)
- the availability of energy efficiency information.

In the fields of public procurement, of conditions for energy efficiency services and of financial instruments, the progress is seen as rather moderate. Besides, there are only very limited differences between the three fields. The dominant answer is "some progress" (average across EU Member States: 54 % for financial instruments, 60 % for conditions for energy efficiency services and 61 % for procurement). Only a small number of experts - 12 % (procurement), 15 % (conditions for energy efficiency services) and 19 % (financial instruments) - observed significant or high progress.

The availability of energy efficiency information clearly has a better development: 43 % observe significant or even very high progress.

![Figure 10: EU 27: average degree of improvement](source: Egger et al. (2013))

![EU 27: average degree of improvement](image)
In **public procurement**, the countries with the lowest level of progress reported are Poland (62 % of the experts said that there was no progress in this field in their country in the last 3 years), the Slovak Republic (57 % ”no progress”) and the Czech Republic (45 % ”no progress). Interestingly, as a contrast, the Czech Republic is also among the countries with the highest progress rates reported in this field (27 % see ”significant progress”), only surpassed by the experts from Luxemburg (33 % ”significant or very high progress”).

No progress in the **conditions for energy efficiency services** is seen by 48 % of the Polish experts and by 46 % of the Lithuanian and Hungarian expert. A positive development (significant or very high progress) is observed by 50 % in Luxembourg, by 33 % in Malta and by 30 % in Portugal.

50 % or more of the experts report that there was no progress in the implementation of **financial instruments for energy savings** (e.g. energy performance contracting) in Hungary, Lithuania and Ireland. On the other end of the spectrum, 57 % of the experts in Malta see significant or very high progress, followed by Estonia (55 %) and France (37 %).

According to the experts, the **availability of energy efficiency information** was mostly improved in Slovenia (67 % significant or very high progress), in Estonia (64 %), in Finland (63 %) and in Portugal (62 %). No progress is stated by 33 % of the Bulgarian experts, 27 % of the Czech experts and 20 % of the Italian experts.

### (6) Gaps in energy efficiency policies

Experts were also asked in which sector they saw the most important gap in energy efficiency policies in their respective countries. In the average across EU countries, transport is in the lead (34 % see the largest gaps in this field), followed by the residential sector with 24 %.

However, answers differ strongly across countries:

The largest gap is found in the transport sector in Denmark and in Austria: 73 % and 70 % respectively see energy efficiency in transport as the most important policy gap. High gaps in transport are also reported from Luxemburg (57 %) and Portugal (52 %). Comparatively high gaps in the residential sector are observed by the experts from Lithuania (46 %) and Latvia (41 %). The Greek experts see the most important gap in the public sector (44 %), the Estonian experts in the industry & service sector (40 %).
Figure 11: EU 27: most important gaps in energy efficiency policies

Source: Egger et al. (2013)
(7) Barriers to energy efficiency

Another question aimed to find out where the experts see the greatest barrier to energy efficiency in their countries. Not surprisingly, across EU countries, 47% see it in financing of energy efficiency investment, followed by the lack of legislation or its implementation (28%).

Financing is perceived as the highest barrier by the experts in the Czech Republic (80%), Portugal (76%) and Slovenia (67%). 54% of the experts in Lithuania and 50% in Luxembourg see a lack of legislation or its implementation as the greatest barrier.
Figure 12: EU 27: greatest barriers to energy efficiency

Source: Egger et al. (2013)
Specific energy efficiency policy instruments

A set of questions relates to a range of specific energy efficiency policy instruments mentioned in the ESD. They look at the perceptions of their effectiveness in the Member States.

In overall terms, energy audits are the instruments with the highest acceptance - 74% of the experts agree that they are at least partly effective. White Certificates are the least known or implemented instrument. 25% of the experts consider voluntary agreements as not effective in their countries.

Across instruments, the Danish, the British and French experts show the most positive attitude, whereas the Cypriot, the Lithuanian and the Hungarian show the least positive opinions.

![Figure 13: EU 27: degree of effectiveness of different policy instruments](source: Egger et al. (2013))
According to the experts, "White Certificates" are not known or implemented in Malta (100 % of the experts chose this answer), in Slovenia (90 %), in the Netherlands (89 %) and in Bulgaria (89 %). 63 % of the French experts see them as partly or very effective, 57 % of the Italian experts and 45 % of the British experts.

Voluntary agreements are unknown or not implemented according to 69 % of the Hungarian experts, 64 % of the Estonian and 63 % of the Cypriot experts. Opinions are divided about the effectiveness of this instrument: whereas Austrian (53 %), Luxembourgish (50 %) and Spanish experts (45 %) see it as "not effective at all", a large majority finds it partly or very effective in Sweden (84 %), the Netherlands (79 %) and Denmark (73 %).

Obligations for energy efficiency companies are least known or least implemented in the Netherlands (68 %), in Portugal (47 %) and in Latvia (44 %). They are considered to be not effective mostly by experts from Cyprus (38 %), Lithuania (38 %) and Hungary (34 %). 100 % of the Danish experts consider them at least as partly effective, 86 % of the British and 73 % of the Slovene experts.

Energy audits are in general well-known and implemented in most EU countries. They are most popular in Denmark (93 % consider them at least partly effective), Austria (92 %) and the Czech Republic (90 %) - all three countries have a long tradition of energy advice programmes. Only in Cyprus, 50 % consider it an instrument which is not effective at all, followed by Lithuania (31 %) and Belgium (31 %).

Qualification, accreditation & certification schemes (e.g. for energy service providers) are least known or implemented in the Netherlands (50 %), in Lithuania (46 %) and Romania (38 %). They are not considered effective by 50 % of the Cypriot experts. Experts in Estonia (82 %), in Austria (75 %) and in Denmark (73 %) consider them at least partly as effective.

Energy efficiency funds are most popular among the Slovene experts - 100 % consider them at least as partly effective. Also a very positive view is expressed by the Cypriot (88 %) and the Czech experts (82 %). They are seen as not effective by 37 % of the Portuguese, 32 % of the Italian and 29 % of the Romanian experts.

Smart metering is least known or implemented Cyprus (75 %), Poland (73 %) and the Slovak Republic (67 %). It is not considered as effective by 39 % of the Dutch experts and by 36 % respectively of the Estonian, German and Slovene experts.
### Figure 14: Like vs. Dislike of White Certificates, Voluntary Agreements, Obligations for energy companies, Energy Audits, Qualification, accreditation & certification, EE Funds and Smart Metering

Source: Egger et al. (2013)
(9) Need to act on European level

The final set of questions aimed at assessing where the experts see the highest need to act on European level:

The vast majority of the 655 energy efficiency experts call for strong regulatory measures from the EU level: 87% want to see "stricter minimum standards for buildings and appliances", 85% are in favour of "mandatory energy efficiency standards in public procurements”. 83% support a "significant expansion of energy labelling for appliances and equipment" and 81% "stricter binding energy efficiency targets for the public sector".

"Road charges for all roads" are the least popular measure (60% are against it), followed by "free public transport funded by revenues from road charges" (40% rejection).
Figure 15: EU 27: measures which should be introduced on EU level

Source: Egger et al. (2013)
3.3.2 Qualitative survey: good practice examples

In the course of the interviews carried out, several interesting policy practice examples emerged.

In Ireland, a change in car taxation in 2008 is deemed to be a success. The new system has moved away from assessing vehicles based on engine size to one that is based solely on the CO₂ emissions per kilometre. This provided a strong encouragement to buy smaller and more efficient cars: between 2007 and 2011 the CO₂ emission dropped from 164 g/km to 133 g/km.

In the Czech Republic, energy performance contracting is becoming more popular: good projects have multiplied and now more than 150 projects have been realised. The growing number of projects has increased confidence in this instrument. The ESCOs have also taken a very active role in promoting the instrument and have recently formed an association.

Estonia has "earmarked" revenues of the sales of "unspent" JI quotas (AAUs) for energy efficiency. Amounts in the order of several 100 million Euro are invested in building programmes, in the residential and in the public sector. This included significant amounts also from the Austrian government.

The German "KfW programme" provides funding from the national government for deep renovation and construction of low energy buildings. In most cases, the owners/investors are given long term, low interest loans supported with professional, independent energy advice. Through its size (about 0.5 billion per year are spent) and the fact that it is well-known, it has succeed in setting new standards.

The Swedish industrial efficiency programme successfully introduced energy management schemes, those undertaking a set of measures get a modest rebate on the energy tax. The comparatively small financial signal has unleashed investments that would have been profitable but were not taken so far.

Austria has a long tradition of energy advice programmes funded by the regional governments and managed by regional energy agencies. The advice is provided by trained energy advisers and quality assurance measures are in place. The success of the programmes also depends on the fact that the advisers are independent of the sales of any product.
3.4 Summary Assessments of Country Reports

The complete 27 country reports consists of a summary assessment, an assessment of the policy packages, selected findings from the expert survey complementing the NEEAP assessment and examples of good practice.”

3.4.1 Austria

Introduction

Austrian energy efficiency (EE) measures in different sectors can be considered as sound and comprehensive, yet partly improvable. Many good measures could be found especially in the buildings sector. The public sector too has a leading role in reducing energy consumption, and the federal and country governments are very active in this sector. The weakest sectors are the appliances and the transport sector which can be considered to be slightly below average. Furthermore, the nation-wide klima:aktiv climate protection initiative is a very good practice example with strong information/awareness-raising effects, including energy consulting as well as education & training of building professionals and energy advisers. These services are offered by Austria’s regional energy agencies. Some experts interviewed on this issue judge policies as ambitious, whereas others believe that policy ambitions are rather low.

Sectoral Assessment

• In the public sector, many good measures contribute to EE like the procurement of energy efficient products, offers for products and services, performance contracting etc. On the other hand a long-term strategy is missing. As well targets for public buildings are not mentioned which could strengthen the sector policy package.

• A very comprehensive policy package was implemented in the buildings sector. It combines almost all relevant elements, from legal minimum standards and other regulations to widely available financing and economic incentives to energy performance certificates. Not explicitly mentioned in the NEEAP but in place are many demonstration projects within the climate protection initiative klima:aktiv.

• The NEEAP provides only few information about policies or measures towards appliances. There are some advice and information programmes to inform the general public. The Ecodesign Directive sets mandatory standards to remove the least efficient products from the market. There are no planned measures for the coming years.

18 For detailed reporting of, see: www.energy-efficiency-watch.org (accessed 06/17/2013)
• The policy package in the industry sector is mainly based on advice and subsidies for different businesses. There are agreements in place for different energy suppliers and distributors. These agreements are not mandatory for all businesses. As well there is a lack of strong standards or obligations, which go beyond the requirements of the EU.

• The focus in the transport sector lies on soft measures and funding of sustainable vehicles and infrastructure. Single measure packages seem to be adequate especially in the fields of funding and information/advice/education. Most measures in the plan are only described briefly which hinders a proper assessment. Most experts see a lack of a transport policy which takes EE into account and of binding savings targets. Other problems are the lower fuel taxes compared to neighbouring countries and the lack of good public transport (outside the cities and main transport connection lines).

Conclusions

To tap the whole potential and to implement a successful policy package several options are missing.

• Appliances sector should provide comprehensive information and education campaigns for all supply chain actors that go beyond EU requirements. Economic incentives are not mentioned which should be done in order to firstly be able to assess all indicators and secondly to push the implementation of energy efficient appliances.

• Transport sector should integrate measures that go beyond EU requirements in order to better use the potential of energy efficiency. As well R&D funding is not mentioned which should be done to be able to assess all measures. As well higher fuel taxes could contribute to targets and better public transportation outside the cities would reduce traffic.
3.4.2 Belgium

Introduction

The survey respondents consider that relatively little progress had been made or that only a few additional policies had been set up in the last three years. The NEEAP analysis yields a slightly more positive picture even though the overall ambition could clearly be raised in several sectors. It should, however, be noted that the Belgian NEEAP is composed of the measures outlined in the three distinct energy efficiency action plans of the three Belgian regions. As one specific measure typically applies only to one region, it is difficult to assess the Belgian NEEAP as a whole. The survey points to the transport and residential sector as the fields with the greatest gaps. With regard to the residential sector, the NEEAP analysis comes to a more positive conclusion and thus partly differs from the survey.

With regard to target achievement, the Flemish region is (based on the NEAAP) the region with the highest savings. It is expecting to achieve energy savings of 13.9% by 2016 (compared to the reference scenario) while Wallonia is expecting to save 7.9% and thus not to reach the target of the Energy Services Directive and Brussels is likely to reach the target with 10% energy savings in 2016. The Belgian NEEAP lacks clear sectoral targets and an overall target for the mid and long term. This weakens the governance framework.

Sectoral Assessment

- The efforts undertaken by the Belgian regions and the federal level have led to a great number of different measures. The public sector may therefore be seen as a role model in some fields. For instance, the public sector has designed a comprehensive mobility management system and aims for sustainable public procurement.

- The policy package for buildings is rather balanced and comprises regulatory instruments, economic and financial incentives as well as information tools and advice. For instance, financing instruments exist at federal and regional level. Energy advice is available in all regions and several information tools have been implemented in Belgium. However, it is not clear from the NEEAP how ambitious energy performance standards are and whether they apply to different building types. A roadmap for revision and tightening of the minimum energy performance standards is not included in the NEEAP.

- With regard to appliances, the implementation of the Ecodesign Directive has been accompanied by the implementation of market surveillance measures and information tools for consumers. For the EU energy label, a control system has been set up. Information tools inform consumers about energy efficient appliances and means to reduce the power consumption at home. The policy package could be improved if education and training was offered to retail staff and other supply chain actors or energy efficiency networks.

- The policy package for the industry considers several important aspects but none of them fully and thus offers still room for manoeuvre and improvement. On regional level, some initiatives
have been taken in the Wallon and Flemish region. Information on the level of ambition of these measures is not included in the NEEAP.

- In the **transport sector** Belgium aims to promote a modal shift to public transport, soft modes and energy efficient vehicles. However, the descriptions of the different measures are rather general (in the English version) which renders a detailed analysis difficult.

**Conclusions**

Improvements could be the following:

- The overall ambition of the policies is medium. However, several good practices could be identified.
- Good practice: A **public sector** programme for reducing the energy use in public schools and sensitizing pupils for the need to save energy (Flanders).
- Good practice: To improve the energy efficiency of the **public sector**, a specific public ESCO has been created. The ESCO is particularly active in the **buildings sector**.
- Good practice: Benchmarks and audit requirements in the **industry sector** for energy intensive companies that are not covered by the ETS (Flanders).
- It is recommended to introduce horizontal measures in the **governance framework** to complement the overall target and support the sectoral policies (e.g. the increase of the excise duty on electricity and gas or the establishment of an overarching coordination mechanism (e.g. white certificates or an energy efficiency fund)).
3.4.3 Bulgaria

Introduction

The policy for the promotion of energy efficiency in Bulgaria, such as described in the NEEAP, is based on a clearly described strategy. The governance framework as well as the policy packages for the public sector and industry are rather balanced. Actors at national (energy efficiency agency, Ministry) and regional level (regional energy efficiency councils, municipalities) contribute to implement measures in line with this strategy. Central and local government authorities have to prepare energy efficiency improvement plans as well as programmes for their implementation. The national savings target has been split between obligated parties (industry, energy traders and owners of public buildings). However, according to a survey with 9 domestic experts, the progress in the energy efficiency policy in Bulgaria was rather low since the first NEEAP. Only around 30% of the survey respondents consider the energy efficiency policy as ambitious.

Sectoral Assessment

- For the buildings sector minimum energy performances standards have been set while economic incentives and financing instruments have been established. A strong focus is on multi-family residential buildings.
- The policy package for appliances comprises the Ecodesign requirements, energy labelling and soft loans for the purchase of efficient appliances.
- Individual energy saving targets have been set for several industrial entities. Energy audits are mandatory for these entities. Economic incentives (credit lines, grants) are provided to facilitate target achievement.
- The policy package for transport considers different transport modes such as road transport, public transport, bicycling. However, the programmes are not described in detail, and concrete measures are missing. Economic incentives for purchasing energy efficient vehicles are at the core of the Bulgarian strategy.
Conclusions

The overall energy efficiency policy of Bulgaria is not overly ambitious. However, the policy packages designed for specific sectors (public sector, industry, governance) are promising. Further improvements could be the following:

- The NEEAP does not comprise any measure related to mobility management in the **public sector**. Further measures or clarifications on this regard are therefore recommended.

- The policy package for **appliances** lacks in particular information tools and education and training offers for retail staff and other actors of the supply chain.

- With regard to the **residential sector** it is advisable to pay more attention to the provision of impartial advice and audits, the mandatory display of energy performance certificates in transactions (including advertisements) and the development of information tools for the buildings sector. It is furthermore recommended to clarify whether and when minimum energy performance standards are to be tightened (roadmap).

- Excise duties on gas and electricity for business use are relatively low. Their increase could serve as a means to strengthen incentives for the efficient use of energy.

- In the field of **transport** it is recommended to strengthen regulatory instruments, information and advice as well as R&D.
3.4.4 Cyprus

Introduction

Cyprus has the target to achieve 10% energy savings by 2016 compared to the ESD reference period. The intermediate target of 3.3% for 2010 has been exceeded (3.57%) and it is expected that also the target for 2016 will be reached on the basis of the measures implemented from 2004-2010. Additional measures that allow exceeding the target will be implemented according to the NEEAP. However, the policy ambition of Cypriot energy efficiency policy can only be assessed as low. None of the policy packages reaches more than a medium result. The policy packages for transport, industry and appliances display particularly high potential for improvement according to the NEEAP analysis.

In line with this, the majority of interviewed Cypriot experts state that national energy efficiency policy has great potential for improvement. More than 60% of the experts consider the ambition of the energy efficiency policy of Cyprus as generally low. Similar to the NEEAP assessment, experts see the greatest gaps in the fields of transport and buildings. Half of the experts surveyed consider that much additional savings will not be achieved, even if the ESD target is reached.

Sectoral Assessment

- The governance framework comprises an energy agency, a first framework for the promotion of energy services and energy audits and, as a means for overall co-ordination and financing, an energy efficiency and renewable energies fund. The revenues of the fund are generated through fees that are imposed on electricity consumption. Distinct grant schemes for the different end-use sectors are based on this fund.

- The strategy for the public sector is characterized by information and communication activities and a first framework for public procurement.

- The policy package for the residential sector combines minimum energy performance standards and energy performance certificates with a grant scheme that co-fines energy saving measures in dwellings.

- EU legislation is particularly visible in the Cyprian policy packages for appliances and industry. In both sectors, the EU Directives on ecodesign and energy labelling constitute the most important measures while few complementary measures have been implemented.

- The measures in the Cyprian transport sector are mainly focused on the renewal of the vehicle fleet through car scrapping and purchase grants. By establishing a public transport action plan, Cyprus starts to build up a public transport system for bigger cities and intercity connections to raise the share of public transport in the modal split.
Conclusions

The Cyprian energy efficiency policy offers great room for improvement even though targets are expected to be reached. Improvements could be the following:

• In the transport sector emphasis is put on the renewal of the vehicle fleet. To strengthen the public transport action plan, it is recommended to establish also restrictions for the individual motorized transport, and traffic calming measures.
• It is advised to set up energy saving targets and/or get commitments for energy management from industry and services.
• To strengthen the policy for the promotion of energy efficient appliances, specific information tools could be developed, economic incentives for the purchase of efficient appliances could be set and training for staff of the retail chain may be offered.
• For the residential sector it is recommended to also develop and promote information tools and demonstration projects.
3.4.5 Czech Republic

Introduction

Compared to NEEAPs from other CEC Member States the Czech NEEAP appears as a coherent and partly ambitious document. The NEEAP screening shows that the document is especially elaborated in describing the overarching governance framework of energy efficiency policy. At sectoral level, the NEEAP can be assessed as partly balanced especially in the public, industry, and service sector. However, interviewed domestic experts come to somewhat deviating conclusions with respect to the overall quality of the energy efficiency (EE) policy of the Czech Republic: In their view, the ambition of Czech EE policy is low and especially the lack of ambitious targets is regarded as a particular problem.

Sectoral Assessment

At sectoral policy levels, the Czech NEEAP shows a very ambiguous picture:

• Regarding the public sector, the Czech policy can be considered a good practice example for similar types of Member States. Especially the clear regulation for public procurement of energy-efficient products and the acknowledgement of the importance of the public sector as a role model can be emphasised. The NEEAP assessment also finds provisions for energy efficient public buildings, an obligation for energy audits and financial support systems. Similar to the assessment of the NEEAP, experts see important policy gaps in the public sector.

• Regarding the residential sector, the NEEAP assessment finds a comparatively well-designed policy package. It contains the definition of minimum energy performance standards, economic incentives and funding programmes as well as an obligation for energy performance certificates and energy audits. However, the lack of an adequate approach to monitor compliance is seen as unsatisfactory by the experts.

• It also has to be stressed that the appliance sector is underemphasized regarding financial incentives. But it is positive that EU regulations and labelling schemes are in place.

• The Czech approach to address EE in the industrial and service sector includes different types of measures (e.g. minimum energy performance standards, financial incentives etc.). It can therefore be considered rather well balanced – though it has to be emphasized that not all of these measures are already fully implemented. 30 percent of experts think that the industrial and service sector has many important policy gaps.

• The transport sector is obviously of low priority in Czech EE policy. The NEEAP contains little information on measures targeting this sector. Policymakers in the Czech Republic restrict themselves to the transposition of European directives and fail to recognize the opportunities of EE. The use of measures to supply information and advice and to support R&D could be extended. Efforts to modernize public transportation systems and to improve cycling infrastructure are positively mentioned in the NEEAP assessment.
Conclusions

Based on both the NEEAP assessment and the survey results, the Czech energy efficiency policy can be deemed to be partially ambitious and innovative. Therefore, the following issues should be addressed by future efforts:

• **The appliance sector** should implement policies to more effectively increase the use of energy efficient appliances (e.g. by granting financial incentives and introducing a national labelling scheme).

• **The transport sector** has to improve its EE policy for instance in areas like urban and spatial planning to lower private car use. Funding for information dissemination and R&D could be improved as well.
3.4.6 Denmark

Introduction

Compared to other NEEAPs, the plan of Denmark is of extraordinary quality. At the strategic level, an explicit link is made between national energy efficiency (EE) policies and the development target of Denmark to achieve independence from fossil fuels by 2050. This target is backed up by comprehensive sectoral policies in most of the sectors. This positive assessment is in line with findings from a survey conducted with Danish experts: From their point of view, Denmark is the country where EE policies have progressed very well, since the first NEEAP and all governmental levels and energy companies are involved in the overall process.

Sectoral Assessment

• In the public sector, both the NEEAP screening and experts’ assessments are coherent that the policy package is well balanced and adequate. The NEEAP provides measures for public buildings and procurement as well as measures to ensure that energy consumption and energy savings are transparent. However, many measures are only described superficially and references to external documents are usually in Danish.

• A special focus is given on the buildings sector. A comprehensive policy package with most of the relevant elements has been developed. As in some other MS, in Denmark, too, the minimum energy performance standards are regularly revised and strengthened along a long-term roadmap. Also in the view of experts, the NEEAP has been very well implemented. However, deficits are detectable in the fields of demonstration projects, financing instruments and for not providing all relevant information in one compiling document.

• The appliances sector plays a subordinate role in the NEEAP, where only some measures are taken into account. Economic incentives and education & training are not even mentioned at all. It appears that this sector has been given little attention. However, the MURE database provides some information about some measures considered for implementation. Therefore, the policy package could strongly be improved.

• The industry sector’s focus especially lies on energy saving obligations for energy companies. The policy package is rather balanced. It considers the demand and supply side of EE markets with energy saving obligations and high tax rates for energy. Energy companies must provide advice and subsidies to increase EE in households and businesses.

• Denmark has started to implement a “green transport policy” with a strong focus on information and advice. High car taxes underline the overall ambitious goal. However, only few measures deal with R&D concerning alternative fuels etc. The scope could be broaden (e.g. by smart spatial planning) and/or regulatory instruments. This is in line with experts’ assessments that recognise the biggest challenge for Danish EE policy in this sector.
Conclusions

While the strategy and vision for Denmark as a whole is very ambitious, it seems that the NEEAP does not cover all strategies and measures that are under implementation, what the NEEAP should. The following issues could be strengthened:

- **The governance sector** does not mention energy services, this should be done more explicitly.
- **The buildings sector** does not mention demonstration projects which should be included.
- **The appliance sector** should be improved in terms of financial incentives, education and information campaigns.
- **The industry sector** should tighten minimum performance standards and labelling schemes that are beyond the minimum requirements of the EU. In addition, incentives and support for energy audits or the implementation of energy management systems should be given.
- **The transport sector** could extend its scope by other planning instruments (e.g. smart spatial planning) and R&D support could be improved in order to access the most recent know-how.
3.4.7 Estonia

Introduction

Compared to other plans of new Member States, the Estonian NEEAP is very elaborated and well balanced. Estonia sees the buildings sector as priority for energy efficiency (EE) which is underlined by many good measures in that sector. Several incentive schemes exist: subsidies for energy efficient renovations of apartment buildings, for audits, and tax incentives to foster refurbishments. The appliances sector, however, is rather weak and lacks information about education & training. A good process status is recognised by domestic experts interviewed to assess the state of implementation of the NEEAP.

Sectoral Assessment

• In the public sector, efforts aim on sustainable public procurement and on increasing the EE of buildings. Therefore, several measures have been implemented and planned, including information and advice, legislative acts and economic incentives.

• Energy saving in buildings is the main priority of the Estonian EE policy, since most of the country’s building stock was constructed before any energy performance requirements were introduced. Both minimum energy performance standards and energy performance certificates are mandatory and should push energetic refurbishments. These instruments are supported by large soft loans and financial support programmes. On the other hand, there is a lack of general information and awareness raising initiatives. Education & training are only planned.

• The national action plan estimates that there is an energy saving potential of 20% with regard to appliances. Plans for additional measures exist, but mainly EU Directives and a few other measures have been implemented yet. Therefore, the policy package could strongly be improved. Nevertheless, Estonia has some plans to increase the EE of appliances.

• The industrial and tertiary sector is rather well balanced. It considers several aspects and provides a range of incentives and legislative acts to support EE in production processes. There are support measures for energy conservation by manufacturers and a financial instrument that includes energy audits and financing opportunities. On the other hand, 40 % of the experts interviewed diagnose a lack of programmes to promote EE in this sector.

• Most measures in the transport sector are only planned. Currently, the activities mainly focus on improving the EE of vehicles by acquiring new public transportation rolling stock and by implementing an E-mobility programme. All types of measures have been addressed (planning instruments, regulatory instruments, economic incentives, information and advice, R&D) and different actors have been considered, but most measures are not implemented nor described in detail.

Conclusions

Estonia has established a well structured and profound policy framework taking into account its lessons learned. To further strengthen its framework, Estonia should improve the following aspects:
• **Public sector** should have a long-term strategy which helps all actors (demand and supply side) to better plan measure implementations.

• **Buildings sector** must address education & training for professionals to enable up-to-date renovations and expertise. More information campaigns should provide information for the general public to raise awareness.

• **Appliances sector** should go beyond minimal EU requirements. Economic incentives to improve/renew appliances should be introduced. Education & training is also missing in the NEEAP which must be addressed.

• **Transport sector** must improve R&D support to gain further knowledge. As well there is a need to actually implement planned measures.
3.4.8 Finland

Introduction

Compared to other NEEAPs, the Finnish plan counts to one of the best performed plans. Comprehensive sectoral policy packages have been improved since the publication of the first NEEAP. For example, eighty-seven businesses with over 130 premises have joined the Energy Services operational programme under the energy efficiency (EE) agreement for businesses in order to promote energy services in Finland. Furthermore, obligations for energy companies have been implemented.

Especially the transport and public sector can be assessed as very strong and well balanced. This positive assessment is backed up by the survey with Finish experts: In their view, Finland is the Member State where EE policies have progressed most since the first NEEAP.

Sectoral Assessment

- The NEEAP provides a very well balanced policy package to address the public sector. It contains binding targets and an obligation for EE plans for Ministries and voluntary agreements for local governments. The measures comprehend requirements for buildings and public procurement, funding to implement EE measures as well as communication and advise activities. Many small successful projects can be observed while an overall policy is missing according to the experts.

- Finland has long established a solid policy package for EE in buildings. Instruments like minimum energy performance standards, energy performance certificates (EPCs), or financial incentives have been well implemented according to the NEEAP. However, Finish experts expressed their concern on the minimalist approach of EPCs. Special is the approach to improving EE of buildings with both energy audits and voluntary agreements between government and certain economic branches that have a long and successful tradition in Finland.

- Private households comprise the main target group for far-ranging communication, advice and training activities to reduce the energy consumption of appliances. Economic incentives are not mentioned. Additionally to EU regulations a voluntary label is in use.

- In the industrial and tertiary sector most important measures lie in the broad EE agreement scheme for businesses and energy audits. App. 70% of Finland's total energy use is covered by those agreements. There is a set ESD target of 9% energy saving for the period 2008-2016 and an obligation on energy audits. The policy mix is well balanced, subsidies, funding scheme and information tools are in place but there is a lack of further regulations and standards for industries or businesses that are beyond EU requirements.

- Finland is very active in the transport sector and many different measures are displayed. All kinds of instruments are used to improve conditions for public transport and non-motorised transport modes. Economic incentives focus on taxation of individual motorised transport based on vehicle’s emissions. Informative and advisory instruments deal with different transport modes and R&D is supported.
Conclusions

Finland has created well balanced policies and measures to improve EE. Still some measures and instruments could be improved.

- **Buildings sector** does not explicitly mention demonstration projects or economic incentives which should be done.

- **Appliances sector** must more strongly focus on economic incentives in order to push energy efficient investments.

- **Industry sector** should further strengthen standards, tradable permits and energy labelling that go beyond EU requirements to realise full saving potentials.
3.4.9 France

Introduction

The French NEEAP puts a special focus on the design of the general governance framework for energy efficiency (EE) policies. For example, government authorities have implemented an EE Certificate scheme on energy supplier. Investment schemes are in place e.g. to establishing world-ranking technology innovation campuses for renewable energies and new energy technologies as well as a Sustainable Development Tax Credit. Furthermore, a large spectrum of stakeholders was involved in working and planning future policies on EE.

In institutional terms a national energy agency has been established (ADEME). As regards the success of French EE policy, interviewed domestic experts are concerned that the ambitious targets for building renovation will not be reached. Also the assessment of the level of ambition of EE policy in France is ambiguous: One half assesses policies as ambitious whereas the other half believes that policy ambitions are rather low.

Sectoral Assessment

- There is a clear strategy and a mandatory targets set for the public sector. Energy savings and related measures are quite visible through the “Exemplary State” flagship and other demonstration projects. For public procurement, guidelines and requirements are in place which also include efficient vehicles. Energy audits are mandatory for public buildings but energy saving impacts remain rather unclear.

- France has set ambitious targets for reducing the energy consumption of both new and existing buildings. In order to achieve these targets, France has established a well-designed, very comprehensive package focussing on interaction of different policies and measures (regulations, incentives, information and training). Measures are well interlinked and try to address certain barriers.

- The two main policy measures in the appliance sector are the Ecodesign Directive and the Labelling Directive. Several product groups are addressed. Information campaigns and information tools help inform the general public. There are some efforts to increase EE in appliances but France could do better. It appears that policies in the appliance sector do not have high priority.

- The policy package for the industry and tertiary sector is comprehensive and balanced between financial incentives, regulations and support for information and audits. On the negative side, reduced rates or exceptions for different forms of natural gas and electricity use are given. Voluntary agreements and energy saving obligations are mentioned but the targets are not specified.

- The policy package for the transport sector is well-balanced and contains a broad range of measures in most fields, especially regarding planning instruments for railway and intermodal infrastructure, but also for pricing, regulation, and information measures. However, only few measures are mentioned in the fields of research and development.
Conclusions

France established very comprehensive and well balanced policy packages in most of the relevant sectors. However, there is further improvement of some weaker elements necessary:

• **Public sector** energy saving impact of energy audits remain unclear for buildings and should be specified.

• **Appliances sector** provides only little information on economic incentives. Effects for appliances of the research demonstrator fund are not clear. As well only few information about education & training is given which must be improved.

• **Industry sector** must specify voluntary agreements and energy saving obligations targets. Reduced tax rates or exceptions for different forms of natural gas and electricity use should be newly assessed.

• **Transport sector** supports R&D only in aviation and could broaden its scope.
3.4.10 Germany

Introduction

The German NEEAP can be considered to be of a rather high quality. Sectoral policy packages addressing investment decisions of consumers and multipliers are comprehensively designed. Regarding the overarching energy efficiency (EE) governance framework, the NEEAP entails an ambitious long-term strategy, which includes EE targets for both 2020 and 2050. The existing number of energy agencies at different governance levels and the implemented monitoring, reporting and verification scheme are positive elements of the plan as well. These positive findings of the NEEAP are in line with findings from the expert interviews. Based on the statements by the surveyed experts, the transport sector can be considered the weakest link of German EE policy. Interviewees see little political will to consistently act in this sector.

Sectoral Assessment

• With respect to the public sector, a number of measures to improve EE have been introduced. Especially measures to improve EE of public buildings, for instance the definition of minimum energy performance standards, funding and investment programs and energy audits can be mentioned in this context. Though, the public procurement guidelines are insufficient and the need for a more ambitious approach is seen. In accordance with these findings, almost ninety percent of the surveyed experts see no or only little progress.

• Numerous activities aim to improve the EE of residential buildings. This includes the definition of minimum energy performance standards, the introduction of economic incentives for retrofitting and newly built buildings as well as the granting of subsidies for energy audits. EPC standards could be strengthened.

• Regarding energy efficient appliances, different labelling schemes and the transposition of the European Ecodesign Directive are positive examples. Economic incentives are not mentioned in the NEEAP.

• Regarding the industrial and service sector, German EE policy is mainly relying on subsidies and other economic incentives. The NEEAP assessment shows, however, that these measures are not accompanied by regulations or obligations but only have voluntary targets. This critique is shared by the experts who do not see any coherent energy efficiency policy for this sector and especially criticize energy tax exemptions for industrial companies.

• The German energy efficiency policy in the transport sector has both strengths and weaknesses. The main emphasis lies on economic incentives, like vehicle taxes depending on fuel efficiency and tolls for trucks, and information, advice and education. Regulatory instruments, on the other hand, could be used more extensively. Accordingly, almost 40 percent of experts see the transport sector as the sector with the most important policy gaps.
Conclusions

The energy efficiency policy can be considered to be of rather high quality based on both the NEEAP assessment and the expert survey. Improvements could be the following:

- **Public sector** procurement should extend its guidelines to make better use of energy efficient products and services.

- **Building sector** should improve education & training to ensure that energy performance standards are attained. The regulation regarding energy performance certificates should be amended with an obligation for standards in building advertisement and the introduction of an national registry.

- **Industry sector** could have more incentives to implement energy saving measures without energy tax exemptions for industrial companies or obligations to implement energy saving measures.

- **Transport sector** could improve its energy efficiency policy through adding regulatory instruments like speed limits and driving restrictions.
3.4.11 Greece

Introduction

Both, the NEEAP screening and the expert survey indicate that Greece has neither an ambitious nor an innovative energy efficiency policy. Many aspects of the policy package can still be strengthened. According to the NEEAP, the interim saving target for 2010 (2.8%) has been clearly exceeded (savings of 5.1% to 10.9% reached). However, the main reason for these energy savings is the economic recession which has hit Greece very hard during the reporting period. It is not possible to clearly separate the impact of the economic recession and the savings attributable to political measures in the second NEEAP. With regard to ESD target achievement, 45% of the experts surveyed state that the ESD target will not be reached.

Sectoral Assessment

• Features of the Greek governance framework are horizontal measures, the promotion of energy services, the development of an information system to monitor energy efficiency or the consideration of different actors.

• The public sector is the only sector that has received above average rating in the NEEAP screening. It implements energy saving measures in public buildings, demonstration projects in schools or information campaigns. The Greek public sector has set the framework conditions for public procurement, has implemented several energy saving measures in public buildings, has introduced energy management systems and launched pilot projects on energy service contracting. However, the experts surveyed stated that the public sector was the sector with the greatest implementation gaps. The result of the NEEAP screening therefore differs from the experts survey in this point.

• Greece has furthermore set minimum energy performance standards for buildings. These are complemented by economic and financial support and energy performance certificates. Innovative systems in buildings are planned to be demonstrated on the basis of voluntary agreements. The NEEAP does not mention audits or buildings specific advice. Furthermore, buildings specific information campaigns as well as education and training for professionals of the buildings sector are not mentioned.

• Energy efficient appliances are mainly promoted through EU legislation: The Directives on Ecodesign and energy labelling have been transposed and are the core of the Greek policy package. Some information tools have been developed on national level.

• Likewise energy efficiency in industry is promoted mainly through Ecodesign and energy labelling requirements. In addition, excise duties for gas and electricity are set above the minimum rate. A programme for the development of green business parks has furthermore been established.

• The policy package for transport focuses on financial incentives for the renewal of the vehicle fleet. It is accompanied by investments in public transport and non-motorized transport.
Conclusions

The ambition of the Greek policy framework is medium, and large potentials remain untapped. Improvements could be the following:

• It is advised to strengthen most of the aspects of the policy package for **appliances**, in particular economic incentives and education, and training for retail staff could be established.

• The overall strategy of the **public sector** is not described. Targets for the energy consumption of public buildings have not been set either.

• As to **industry**, it is advisable to promote obligations/commitments to energy management and energy audits and to set economic incentives as well as energy saving targets.

• In view of better connecting the measures in the **transport sector**, it is recommended to address more the residential sector as potential user of public transport, bikes and pedestrian paths by means of campaigns and financial incentives. In this context, it is advised to push vehicle users to use other modes of transport by a stronger regulation.
3.4.12 Hungary

Introduction

Hungary has over recent years published several policy documents that stress the importance of energy efficiency. Both, the interviewed experts as well as the NEEAP analysis highlight this fact. The experts, however, specify that this has been translated into only few actual policies. The majority of experts believe that the Hungarian energy efficiency policy is only ambitious in a few sectors or has generally a low ambition. This is generally in line with the NEEAP assessment which identifies only a few ambitious policies or policy packages. Both analyses furthermore point to the issue of financing. The experts referred to financing as the main barrier to energy efficiency. The NEEAP analyses stresses the lack of coordination of financing instruments as one challenge.

Sectoral Assessment

• The public sector in Hungary promotes energy efficiency through education, information and awareness raising. A public procurement action plan was about to be approved in 2011 and Hungary plans to set energy efficiency requirements for office equipment. Furthermore, energy saving renovations of public buildings are funded.

• With regard to buildings, Hungary has set minimum energy performance standards and is planning to develop a national strategy for the energy performance of buildings. This is complemented by investment programmes for new and existing buildings. An energy efficiency network is planned to disseminate information, raise awareness, contribute to energy strategies of counties and establish a knowledge base. Energy performance certificates are required for buildings or flats.

• The policy package for appliances is largely based on the EU Directives on energy labelling and Ecodesign. Information on appliances is provided through a webpage. In addition, education material for primary and secondary education has been prepared.

• The policy package for industry such as described in the NEEAP addresses several important aspects of energy efficiency promotion. It is planned to establish voluntary agreements regarding energy audits and energy conservation. It is mandatory for big energy consumers to draft reports on their energy consumption. Information on energy efficiency and realized projects in this field shall be made available to industry, the tertiary and other sectors through an open database. Economic incentives such as preferential loans, third party financing and grants complement the package.

• The policy package for the transport sector such as described in the NEEAP seemed well balanced. The main focus is to shift individual road traffic to public transport and non-motorized modes. The measures include planning instruments to improve green modes as well as financial disadvantages for road traffic. However, the experts identified the greatest gaps in the field of transport. The assessment of the transport sector therefore differs.
Conclusions

According to the NEEAP analysis and the survey results the Hungarian energy efficiency policy is generally neither very ambitious nor innovative. Improvements could be the following:

• The policy packages for appliances, the public, residential and industrial sector address the most important aspects of energy efficiency promotion but can all be strengthened.

• The policy package for the transport sector, solely based on the description in the NEEAP, seems promising. The expert survey, however, points to transport as the sector with the greatest gaps.

• The long term strategy for energy efficiency should be translated into actual policies. It is currently well described in official documents and needs to be implemented.
3.4.13 Ireland

Introduction

The Irish NEEAP has its strengths especially in the industry and buildings sector. Cross-sectoral grant schemes are available that provide funding for different sectors (buildings, industry, public sector). The Irish policy has furthermore set up networks for large industrial companies and SMEs. Within these networks advice, information and training is offered.

The majority of domestic experts interviewed in the context of the EEW project (61%) rate the overall ambition of Irish energy efficiency policies as rather high or state that a range of sectors are ambitious while few others are rated as less ambitious. The NEEAP analysis is rather in line with this assessment. While many policy packages address the most important aspects of energy efficiency promotion without being ambitious, the policy packages for industry and buildings are rated as relatively ambitious. The survey respondents emphasized that energy efficiency policy in Ireland was affected by the economic crisis (less funding, shifting policy focus).

Sectoral Assessment

- The public sector has drafted a list of highly energy efficient equipment and technologies. Purchasers of this equipment can write off the full cost of their purchase against their profit for that year. As this list is also used for public procurement, it links public and private sector purchases and creates a greater market for the eligible energy efficient products.

- The energy performance standards for buildings have gradually been tightened and are planned to be upgraded again in 2016 which should lead to a 70% improvement compared with the standard of 2002.

- In other sectors, a clear target is missing. For instance, neither the public sector has a specific target nor have targets for industrial sectors or companies been defined. The lack of specific targets is also visible at national level for which, according to the information provided in the NEEAP, no overarching energy efficiency target has been set.

- For instance, in the absence of a target and mandatory measures at national level, the policy package for the industry and tertiary sector is mainly characterized by several schemes that provide grants for businesses and by company networks. These networks provide advice and mentoring for large industry and SME and thus promote energy management. The policy package comprises therefore good elements but is, in the absence of specific targets, incomplete.
Conclusions

Improvements could be the following:

• The policy packages for **industry and buildings** are comparatively ambitious; the policy packages for the remaining sectors could all be clearly improved.

• The Irish **governance framework** lacks in particular an overall target for energy efficiency and specific sectoral targets.

• The financial crisis has negatively affected the Irish energy efficiency policy by leading to dwindling political focus and reduced financial resources.

• The reform of the car taxation scheme which is now only based on CO₂ emissions can be perceived as a good practice example for the **transport sector**.

• It is recommended to define energy saving targets for **all sectors** and to establish overall coordination and/or financing mechanisms.
3.4.14 Italy

Introduction

The Italian NEEAP has developed partly comprehensive sectoral policy packages. However, some parts of the NEEAP remain unsatisfactory which has also been recognised by the assessment of interviewed domestic experts. The NEEAP assessment shows that Italian energy efficiency (EE) can be considered extensive, though the lack of a long-term target is noticeable. The involvement of non-governmental and market actors, the existence of both a national and regional energy agency and the white certificate scheme are positive elements.

The interviewed experts, on the contrary, are far more critical regarding the progress of Italian policy. More than 80 percent of the interviewees see no or little progress in the last three years. Almost 90 percent of the interviewees consider Italian EE policy to be of low ambition or only ambitious in few sectors. More than 70 percent of the survey participants believe that Italy will fail to or barely meet its ESD target.

Sectoral Assessment

• The NEEAP shows that the public sector is covered by a rather balanced policy package, which includes requirements for public buildings, lightning and procurement. Furthermore, provisions for public procurement can be considered as very well designed. On the contrary, about one quarter of the interviewed experts see the most important gaps. More than 30 percent of the experts see no progress in the field of public procurement. Accordingly, almost 30 percent of the experts think of the public sector as the one with the most important policy gaps.

• With respect to residential housing, financial support schemes like tax allowances and low-interest loans are main elements in the Italian energy efficiency policy in this sector. The Italian policy package also contains the definition of minimum energy performance standards and energy performance certificates.

• Italy has as well implemented various measures to increase the energy efficiency of appliances. However, the NEEAP does not exemplify their design on detail. Therefore, the NEEAP assessment remains somewhat inconclusive. About 25 percent of the survey participants find the most important policy gaps in the residential sector.

• The NEEAP assessment points to a balanced policy package for the industrial and services sector, which addresses the supply and demand side. The main instrument in use to increase energy efficiency in the industrial and service sector is the white certificate scheme.

• Based on the NEEAP assessment, the Italian EE policy targeting the transport sector can neither be regarded strategically coordinated nor well-balanced. Only a few measures are mentioned in the NEEAP. A lot of policies are in the planning stage, but the NEEAP does not explain how and when they are going to be implemented. Agreeably, about one quarter of interviewees see the most important policy gaps in this sector.
Conclusions

Though Italian energy efficiency policy is using various instruments, experts are comparatively critical towards the Italian policy package. Improvements could be the following:

• **Each sector** should have a long-term strategy (until 2050) and be complemented by a more strategic approach which secures planning for the demand and supply side.

• **Appliances sector** should establish financial incentives to support the purchase of energy-efficient appliances. The policy package should be amended with a voluntary labelling scheme, information campaigns, and education & training programmes.

• **Industry sector** should set energy saving targets and the use of regulatory instruments should be extended.

• **Transport sector** has to improve the policy package substantially, e.g. by introducing economic incentives and adding measures to supply advice and information.
3.4.15 Latvia

Introduction

The Latvian NEEAP is a rather balanced plan. Despite of the fact that a link to relevant national planning documents has been established, no strategic long-term perspective has been developed. The involvement of stakeholders is predominantly organised through voluntary agreements for companies in the industry sector and obligations for energy companies. Opinions of the experts on the progress in energy efficiency (EE) in Latvia are divided: more than 40 % consider the progress as relatively good while nearly 60 % see only a bit or no progress. Also more than 40 % of the interviewees believe that the ESD target will not be achieved. While the general framework, the public and buildings sector are balanced, the appliances and industry sector could strongly be improved.

Sectoral Assessment

- There are some isolated strategic efforts to increase energy efficiency (EE) in the public sector by single cities or local authorities. However, a comprehensive public sector strategy at national level is not defined although there are some activities in terms of energy efficient public procurement and activities concerning public buildings mentioned. Overall, the policy package leaves room for improvement.

- There are some minimum requirements in the buildings sector defined but it is not clear if they exist for all building types. Investments are given for increasing EE in heating appliances especially in multi apartment buildings and are financed by EU structural funds. However, interviewed experts see huge problems in funding EE for residential buildings and the quality of efficiency measures for buildings.

- The appliances sector has implemented at maximum obligatory EU Directives. The national EE action plan does not cover additional policies and measures. There are no voluntary labelling schemes and no information campaigns to inform end-users and buyers about EE appliances. These gaps have to be addressed.

- In the industry sector Latvia uses different level agreements to promote EE. Agreements are planned or partly implemented. The agreements cover energy audits and obligations for EE action plans, improvement measures and the provision of information to the Ministry of Economics. There is a lack of binding regulations, information or advice to overcome barriers and economic incentives to reduce energy consumption.

Except from R&D, Latvia uses all kind of instruments in the transport sector. Most of them are below average due to few information given. Regarding regulation only the implementation of EU regulation is mentioned, but further national regulatory instruments (e.g. speed restrictions, parking restrictions etc.) are missing. Concerning economic instruments there are some measures listed which are not very ambitious. In total this sector has to be improved broadly.
Conclusions

The Latvian NEEAP is rather balanced. However, there is potential for further improvements especially in the appliances and industry sector. Following issues have to be addressed:

• **Public sector** should develop a clear strategy for the national level that frames requirements and claims.

• **Buildings sector** needs a road map and continuous strengthening of standards. There should be more information on energy performance certificates and education & training must be mentioned in the NEEAP.

• **Appliances sector** should integrate measures that go beyond EU requirements in order to achieve the full potential of the sector. Economic incentives and education & training must be mentioned.

• **Transport sector** must broaden its focus on public transport concerning planning instruments. The same advice can be given for regulatory instruments. As well information measures should be strengthened and R&D support is not mentioned which should be done to be able to assess the indicator.
3.4.16 Lithuania

Introduction

The Lithuanian energy efficiency policy is ambitious in a few of sectors but less so in several others. This is the outcome of the survey among experts. The NEEAP analysis comes to a similar conclusion: The policy packages for the public and residential sector as well as the governance framework are found to be promising. The remaining sectoral policies are less ambitious. According to the NEEAP, the Lithuanian ESD target for 2016 is expected to be reached. 46% of the survey respondents also expect the ESD target to be reached, but according to their estimate the target achievement would not lead to significant additional savings.

The governance framework comprises sample agreements for the provision of energy services, considers different actors and provides mechanisms for the overall coordination and financing. Voluntary energy saving agreements with energy companies have furthermore been concluded. The framework applicable to energy services is partly explained.

Sectoral Assessment

- The policy package for the public sector features many programmes for the renovation of public buildings. It comprises also the training of civil servants as well as several information tools. The Lithuanian public sector has adopted energy efficiency requirements for public procurement. A clear strategy and vision are lacking.

- The policy package for the buildings sector in Lithuania comprises minimum energy performance standards, education and training offers as well as several funding programmes for renovation activities. Energy performance certificates are mandatory when buildings are constructed, sold or rented. It is unclear whether the display of energy performance certificates is also mandatory in transactions (including advertisements) and whether a national registry and a system of quality assurance has been established. The NEEAP mentions advice programmes and information tools. It is not clear, however, to what extent these are related to buildings. Finally, the NEEAP does not mention how and when the minimum energy performance standards are to be tightened (roadmap).

- The policy package for appliances is almost entirely based on the implementation of EU legislation on ecodesign and energy labelling and partly complemented by information tools. All aspects of the package could be strengthened.

- With regard to industry, no targets have been set for individual companies, but the NEEAP states that voluntary agreements on energy efficiency with companies not subject to the ETS are promoted. Economic incentives to increase energy efficiency in industry are set by preferential loans or the funding for energy audits. Advice, support and energy audits as well as schemes for the qualification and certification of professionals are offered.

- At this stage, the policy package for the transport sector is mainly based on planning instruments, investments in road and public transport and information, education and advice. Even EU regulations are not clearly mentioned in the NEEAP.
Conclusions

The policy is somewhat ambitious in some sectors but less so in others. Improvements could be the following:

- The policy packages for industry and buildings as well as the governance framework are promising.
- It is recommended to develop a roadmap for the tightening of minimum energy performance of buildings standards.
- It is recommended to improve the policy package for appliances, in particular to set up training and education for retail staff and economic incentives for the purchase of efficient appliances.
- It is advised to set obligations/commitments to energy management in industry and to promote energy audits.
- It is recommended to complement the policy package for transport with regulatory instruments and economic incentives.
3.4.17 Luxembourg

Introduction

According to Luxembourg experts, Luxembourg has made good progress in energy efficiency policies since the NEEAP 1 (country progress indicator: 3 out of 27). More than 40% believe that the ambition of the energy policies is general rather high. The analysis of the NEEAP, however, comes to slightly different conclusions. The governance framework and the policy package for buildings are very promising. However, the remaining sectors have still great potential for improvement, hence the overall rating based on the NEEAP would be rather medium.

According to the NEEAP, Luxembourg expects to realize 14.1% savings by 2016 and thus to exceed the ESD target provided that all planned measures are implemented. Strength of the Luxembourg governance framework is the widespread availability of advice and information through energy agencies and information points at national, regional and municipal level.

Sectoral Assessment

• In a sectoral perspective, the public sector mainly acts as a role model with regard to buildings. The policy package put in place for the buildings sector as a whole is comprehensive and exemplary. The strength of the policy package is the availability of training and education programmes for professionals of the buildings sector.

• The policy package for appliances is mainly based on the EU Ecodesign and EU Energy Labelling Directive and complemented by a financial incentive for the purchase of refrigerators and information tools.

• The policy package for industry comprises, amongst others, a voluntary agreement between the government and the Luxembourg industry, a plan to promote cross-cutting technologies and economic incentives. Obligations and commitments for energy audits or technology phase-out/in are not explicitly mentioned in the NEEAP. Luxembourg furthermore applies the EU minimum tax rates for gas and electricity for business use while other Member States go beyond these minimum rates.

• The transport sector is a very weak part of the NEEAP. Only road transport is taken into account and the measures mostly fulfil only minimum EU requirements. It is advised not to except the transit traffic from the NEEAP.
Conclusions

The energy efficiency policy can be considered to be of a comparatively high quality, especially based on the expert survey. Improvements could be the following:

• Luxembourg has made good progress over recent years, but considerable potential for further improvements of energy efficiency is still available.

• The governance framework and the policy package for buildings may serve as good practice example.

• In the field of buildings, the comprehensive education & training offer can be highlighted as a best practice.

• As to the overall governance framework it is advisable to define a target that goes beyond 2020.

• With regard to the transport sector it is recommended to consider public transport and non-motorized transport besides individual road transport. In addition, planning instruments, information and advice and more elaborated regulatory instruments could complement economic incentives.
3.4.18 Malta

Introduction

The NEEAP analysis and the expert survey both conclude that some additional and sometimes promising policies or policy packages were set up since the publishing of the first NEEAP. Nearly 60% or the EEW-survey respondents state that policies are at least ambitious in a range of sectors or generally highly ambitious. The overall energy efficiency policy, however, has still great potential for further improvement. With regard to the governance framework for instance, Malta has no longer term (2020, 2050) target on which policies and measures for energy efficiency could be aligned.

Sectoral Assessment

Malta has set up a policy framework for energy efficiency that features some elements of general importance, such as a national energy efficiency fund, a national energy agency and a research strategy.

- In a sectoral perspective, the Maltese public sector acts as a role model through the implementation of demonstration projects and green public procurement. It lacks, however, a clear vision and targets. This is particularly visible with regard to public buildings where specific targets for the improvement of their energy performance are lacking.

- The buildings sector displays some promising features. For instance, minimum energy performance standards have been introduced and are proposed to be gradually increased in future. Amongst several financing opportunities, Malta has also established a feed-in tariff for domestic PV.

- The policy package for appliances could strongly be improved. There are no measures accompanying and increasing the effect of the Ecodesign Directive. Currently, the electricity supplier is installing smart meters which provide useful information on the energy consumption of the household as a whole and, by deduction, also of some household appliances. However, they do not provide information on the best available technologies and their respective saving potential. Information campaigns targeting manufacturers and consumers are not mentioned.

- The policy package for the industry and the tertiary sector is mainly based on agreements with specific companies (the water services corporation and the energy supplier) and co-funding of energy efficiency measures of companies. The latter measure, however, was only financed until 2013 according to the NEEAP. Several measures regard the tourism sector as one of the country’s main income and energy demand sources.

- Malta’s strategy to reach more energy efficiency in the transport sector follows two main goals: modal shift towards public transport and the renewal of the vehicle fleet. The investments in public transport infrastructure are combined with a congestion charge in the capital city. Economic incentives to support purchase and use of newer cars and hybrids or electric vehicles are introduced.
Conclusions

To tap the whole potential and to implement a successful policy package several options are missing:

• Malta has set up a range of additional policies since the last NEEAP and shows some ambition to improve energy efficiency; the overall effect of the sectoral policy packages could however be strengthened.

• The analysis based solely on the NEEAP concludes that the policy package for the transport sector is well balanced; however, the respondents to the survey see the greatest gaps in this sector.

• The NEEAP refers to an energy efficiency fund and funding for measures in different sectors; this contrasts with the responses to the survey according to which financing is the greatest barrier to energy efficiency.

• It is recommended that Malta defines a specific target for 2020 and 2050. The target should ideally be broken down in sectoral targets and action plans.

• Almost all of the sectoral policy packages could be improved with more focused information and training measures. Further training offers for professionals seem particularly necessary in the buildings, appliances and industrial sector. Specific measures to disseminate knowledge and best practices should be geared towards the needs of sectors and respective actors.
3.4.19 The Netherlands

Introduction

Based on both the NEEAP assessment and the expert survey, the Dutch energy efficiency (EE) policy has to be considered a somewhat mixed bag. While the targeting of all sectors and manifold actors is seen as strength, the NEEAP assessment comes to the conclusion that the lack of any long-term roadmaps or strategies is worrisome. This is confirmed by the surveyed experts, who describe an overall absence of ambition and enthusiasm with respect to EE.

Accordingly, almost 90 percent of the experts believe that the Netherlands will not attain its ESD goal or attain only little additional savings. More than forty percent of them consider the lack of funding to be the greatest barrier to EE, while about thirty percent believe it to be a lack of legislation and its implementation.

Sectoral Assessment

- Based on the NEEAP assessment, Dutch measures to further EE in the public sector can be judged relatively positively – especially with regards to public buildings and procurement. It is planned that all newly built public sector buildings are nearly zero-energy buildings by 2018. The provisions for public procurement shall enable a completely sustainable public procurement. Yet, interviewees are much more ambivalent. While ambitious standards for new buildings and individual efforts by few municipalities are acknowledged, they see little effort by local authorities to fully implement the EPBD. Less than 25 percent see significant progress with respect to sustainable public procurement.

- The NEEAP assessment shows some innovative approaches to increase the EE of residential buildings, like linking the maximum rent to energy performance certification. Minimum energy performance standards for buildings are in place and regularly tightened. The Dutch policy package includes economic incentives and funding as well.

- With regards to appliances, various measures have already been implemented. Among these are minimum energy performance standards, economic incentives and information campaigns. Yet, the NEEAP assessment still sees room for improvement, e.g. by amending the policy package with measures to supply education and training. Less than 20 percent of the experts think of the residential sector as the one with most important policy gaps.

- Dutch EE policy for companies in the industrial and service sector includes various instruments (e.g. subsidies and tax reductions, energy saving targets) and can therefore, according to the NEEAP assessment, be considered well balanced. However, survey participants are more questioning. They see too few incentives for EE in the industrial and service sector and more than 30 percent find it to be the one with the most important policy gaps.

- Experts see more and better efforts to promote EE in the transport sector. In particular, policies to support bicycle use and public transportation use are named, while an increase of the speed limit on motorways and the abandonment of plans to introduce congestion charges are deemed
counterproductive. Accordingly, more than 40 percent of the experts believe the most important policy gaps to be in this sector.

Conclusions

While some innovative measures and policies can be recognized, the overall lack of ambition and the low priority the Dutch government gives to EE is worrisome. Especially following issues could be addressed:

- **Government sector** should define and develop general EE targets and a roadmap. A mechanism for coordination and funding of EE measures (e.g. a white certificate scheme or an EE obligation) should be established.

- **Buildings sector** should be improved in education & training of professionals in the building sector in the sense that EE becomes an integral part of the curriculum.

- **Transport sector** should improve the policy package to make greater use of planning and regulatory instruments.
3.4.20 Poland

Introduction

The NEEAP of Poland entails a well balanced and detailed long-term strategy on energy efficiency (EE). Most effort was put on the public sector especially concerning public procurement and public buildings while the appliances and transport sector are rather weak. However, many measures from diverse sectors are often not mentioned which must be improved to properly assess the NEEAP. The domestic experts interviewed in the project assess the progress in the Polish EE policy rather sceptical: For 85 % of the 22 survey experts see that the overall ambition in EE policies is either generally low or only ambitious in a few sectors. 76 % state that only a few additional policies were introduced or that no progress was made and that there is a lack of legislation or its implementation.

Sectoral Assessment

• Poland put a lot of effort on developing a public sector policy. It addresses specific barriers as well as the demand and supply side of EE markets. It contains requirements, subsidies and activities to visualise energy consumption and savings. Pilot projects in the construction of nearly-zero energy buildings are being prepared. The Act on EE defines tasks for the public sector but lacks a clear strategy with targets and defined timescale.

• Many activities were issued to improve EE of the buildings sector. Implementing the “Thermomodernisation and Repairs Fund” was one important issue. The verification of audits is an important tool to achieve the ambitions of the national EE policy. The policy package shows great awareness of the high potential of possible energy savings. On the other hand energy performance certificates and education & training are not mentioned in the NEEAP. Information are sometimes spare which hinders a proper assessment.

• There is a growing consumption of electricity in the appliances sector. Unfortunately there is very few information provided by the NEEAP concerning most measures. Even MURE database provides only some overall information. At least it can be said that EU related measures are in place. There are serious gaps concerning EE policies in the sector which strongly should be improved.

• In the industry sector economic incentives for energy audits and implementation of energy management systems are in place. The excise duty for electricity is above the minimum EU-rate. But there is no excise duty for gas in Poland which could be introduced. Many sub criterias are not mentioned in the NEEAP which causes a rather balanced rating of the policy package. The package could be improved by setting clear targets and obligations/commitment for industrial branches.

• Poland focuses in the transport sector on information, education and advice. Measures listed in that field address different actors and transport modes. Different economic incentives are given to promote biofuels/renewable fuels. However, mostly further information is missing in order to evaluate the quality of measures. Most measures are only listed and summarised and had to be complemented with MURE database.
Conclusions

Especially in the buildings and public sector several good measures and comprehensive policy packages have been implemented. The appliances and transport sector, on the other hand, could strongly be improved. It is also necessary to fill many gaps in all sectors which are due to missing information. Following issues could be strengthened as well:

• Public sector should implement a clear strategy with targets to enable better planning for the demand and supply side.
• Industry sector could improve by setting clear targets and obligations/commitment for industrial branches. The excise duty on gas could be increased at least to the minimum level adopted by the Council.
• Transport sector could contribute to energy savings by developing and implementing planning and regulatory instruments as well as economic incentives and R&D activities.
3.4.21 Portugal

Introduction

The Portuguese NEEAP lacks of detailed and comprehensive information. Obviously, some ideas have the potential to noticeably contribute to energy savings. Additionally, only aggregated results have been presented, that makes it difficult to soundly assess the NEEAP. It is strongly advised to fill the information gaps and show detailed calculations. On the contrary to the NEEAP assessment, however, interviewed domestic experts state that Portugal is among the countries where energy efficiency (EE) policies have progressed rather well since the first NEEAP. They see a relatively high overall ambition of EE policies, as 62% consider it at least ambitious some sectors. About one third of interviewed experts think that the target will certainly or probably be achieved and report the successful implementation of the EPBD and an upcoming new legislative framework for ESCOs.

Sectoral Assessment

• For the public sector, the NEEAP provides only limited information about policies and measures. An overall sector strategy is missing. Public buildings are addressed through energy certification, installation requirements, subsidies for CHP and behavioural campaigns. But implementation of some of these measures remain unclear. NEEAP I and MURE II database had to be consulted to find at least some information. According to the interviewed experts there is a lack of funding in the public sector that is challenging.

• The lack of information hinders also a proper assessment of the NEEAP in the residential sector. Some regulations and building standards are mentioned. A huge list of ideas and goals to improve EE in buildings shows efforts in the sector which are unfortunately not assessable. Interviewed experts regard the removal of financial incentives for EE as one important strategic challenge.

• The action plan in the appliances sector determines potential savings by changes of behaviour in the efficient use of energy. Information and incentives are provided. However, neither information about the design and the implementation of policies nor their impact is given. EU regulations like the Ecodesign Directive or the Labelling Directive are not explicitly included in the NEEAP.

• An energy saving target for the industrial sector is mentioned. Other measures are related to EU regulations. It is important to fill the information gap since many of the measures found in MURE are not mentioned in the NEEAP. Experts report that a programme for the energy-intensive industry exists committing companies to draw up EE plans.

• Portugal plans to restructure logistics in land and maritime transport as well as to improve the rail network. Additionally, environmental friendly driving is supported which is also described by the experts. The NEEAP provides only basic information about measures. Further information should be given.
Conclusions

According to the experts, Portugal progressed rather well since the first NEEAP and more than 60% see that the targets at least as ambitious. More than thirty percent expect the targets to be accomplished. Concerning the NEEAP it is not possible to do a sound assessment due to huge information gaps. It is obvious that some ideas have the potential to noticeably contribute to energy savings. It is strongly advised to fill the information gaps and to show results and detailed calculations of the achieved energy savings. Additionally, the EU regulations should be listed in the NEEAP as well. As one example, the appliances sector should address the demand and the supply side to overcome actor-specific barriers. Information & education campaigns, a voluntary labelling scheme as well as financial incentives should be implemented.
3.4.22 Romania

Introduction

Both, the EEW-expert survey as well as the NEEAP screening concur in their conclusion that the Romanian energy efficiency policy has great potential for improvements and could be strengthened in many respects. The last three years witnessed only little progress in energy efficiency policy and the NEEAP screening identifies the greatest policy gaps in the field of appliances and the transport sector.

The Romanian governance framework for energy efficiency has largely been driven by EU accession. Most of the strategic documents were adopted during the accession phase and have set targets for 2015. The national energy strategy covers the timeframe 2007-2020 and contains some targets for energy efficiency. A clear overall target for the mid and the long term is, however, missing.

Sectoral Assessment

• In a sectoral perspective, Romania has identified the great savings potential in the buildings sector and has set up a range of economic incentives for improving energy efficiency. Amongst others, support is provided for thermal insulation; structural funds are used for improving efficiency in buildings. In addition, aid for heating, an incentive for using more energy, has been eliminated. Demonstration projects, information and communication are barely described in the NEEAP.

• In most sectors, EU legislation seems to have been the main driving force. This is particularly evident in the field of appliances where the Ecodesign and the energy labelling Directive are the main measures. The policy package such as described in the NEEAP lacks in particular economic instruments and information tools.

• The policy package for industry covers many aspects. Amongst others, long term agreements with industry are planned, following the example of the Netherlands. The policy package for industry furthermore comprises standards (Ecodesign), economic incentives and training activities. The economic incentives are to a large extent based on EU or EBRD funding.

• It should be noted that the economic recession of 2008 and 2009 has considerably impacted Romanian energy efficiency policy. The public budget and also spending on energy efficiency had been significantly reduced.

Conclusions

The energy efficiency policy can be considered to be rather weak based on both the NEEAP assessment and the expert survey. Improvements could be the following:

• The Romanian energy efficiency policy is not overly ambitious yet. All policy packages can be strengthened.
• In the **residential sector**, it is recommended to improve advice, information and communication. In this context, it is also advisable to implement demonstration projects and define a roadmap for the tightening of minimum energy performance standards.

• It is advised to complement the policy package for **appliances** with economic instruments and information tools.

• In the **field of industry** it is recommended to put particular emphasis on obligations or commitments for energy auditing, energy management or technology phase-out.

• Good practice: **Commercial** companies, as well as the local and central **public** administrative units owning more than 25 vehicles, have the obligation to develop monitoring and management programmes for the fuel consumption of the own car fleet. As well the elimination of an aid for heating which sets incentives for using more energy is a goo improvement.
3.4.23 Slovakia

Introduction

Compared to other documents, the Slovak NEEAP is of rather low quality. It seems that neither long-term targets and strategies nor mechanisms for the overall co-ordination and financing of energy efficiency (EE) measures are in place. This is also confirmed by domestic experts interviewed in an EEW survey conducted in 2012: More than 90 percent of the surveyed experts see no progress or only a few additional policies since the last NEEAP was developed. Consequently, more than 75 percent of the experts believe that Slovakia will either not or barely attain its ESD target. More than 40 percent of the experts believe, that an inadequate funding of EE investments or a lack of legislation and its implementation is the most important policy gap.

Sectoral Assessment

• While the NEEAP names different instruments to improve EE in the public sector, like provisions for public procurement and public buildings, it is not very detailed with respect to their implementation. Almost one third of surveyed experts believe that the public sector is the sector with the most important policy gaps. Consequently, more than 50 percent of the experts see no progress with regard to EE public procurement, and further 40 percent recognize only little progress.

• The NEEAP assessment shows a higher quality of the Slovak EE policy in the residential sector. Minimum Energy Performance Standards and Energy Performance Certificates have been introduced, and instruments to ensure financial support of EE have been put in place.

• With respect to appliances, the NEEAP assessment finds a comprehensive policy package, that includes a transposition of the Ecodesign and Labelling Directive and makes use of economic incentives. Nevertheless, about 30 percent of experts consider the residential sector to be the sector with the most impairing policy gaps.

• Regarding the industrial and service sector, the NEEAP assessment comes to the conclusion that Slovakia has implemented a balanced policy package, that addresses both the supply and demand side. It includes an obligation for energy auditing depending on the company’s product and allows the granting of financial subsidies. The package is further complemented by measures like introducing monitoring systems for energy use and information and training activities. Still, a little less than ten percent of the surveyed experts think of the industrial and service sector as the one with the most important policy gaps.

• With respect to the transport sector, the NEEAP assessment finds that planning instruments are extensively used, whereas the use of other instruments (e.g. regulatory instruments and information) should be intensified. Accordingly, only about 20 percent of the interviewees consider the transport sector to be the one with the most important policy gaps. Utilized planning instruments contain the improvement of public transportation systems and bicycle infrastructures.
Conclusions

The current status of the Slovakian energy efficiency (EE) policy is unsatisfactory, but there are a lot of options available to improve it:

• **Governance sector** should increase involvement of non-governmental and market actors into efforts and an overall mechanism for the coordination and funding of EE, like EE obligations or a White Certificate Scheme.

• **Industry sector** should set-up voluntary or mandatory energy saving targets, and corresponding action plans should be developed.

• **Transport sector** should more extensively use regulatory instruments, like speed limits and driving restriction areas. As well, a better supply of relevant advice and information and the support of R&D should be intensified.
3.4.24 Slovenia

Introduction

The EEW-expert assessment and the NEEAP analysis come to different conclusions with respect to the overall energy efficiency strategy in Slovenia. While experts point to the lack of a strategic approach, the NEEAP analysis refers to several strategic documents that, at least on paper, highlight strategic planning. A great majority of experts expect that the ESD target will not be reached or, if reached, will not lead to significant additional energy savings. The NEEAP states that targets for 2016 will be reached. Both, the expert assessment and the NEEAP analysis, indicate several positive aspects and some gaps and weaknesses that need to be improved.

Sectoral Assessment

• With regard to the public sector, the NEEAP analysis and the experts point to the lack of a clear strategy and vision. However, the public sector is active in the field of communication, awareness-raising, training and education as well as the establishment of energy management systems in all ministries. A framework for green public procurement has partly been set up.

• Slovenia has set up a well balanced policy package for buildings. To help citizens comply with these standards economic and financial support has been made available. Regulations provide orientation for energy efficient spatial planning and make it compulsory that the calculation of heating costs in multi-family buildings reflects the actual consumption. Advice is provided through a network of 36 offices throughout the country. Energy performance certificates and demonstration projects lack in the policy package.

• The policy package for appliances is to a large extent based on the implementation of the EU Directives on ecodesign and energy labelling.

• The policy package for industry is comparatively well developed and features excise duties on gas and electricity above the EU minimum rates, and a CO₂ tax. A scheme for linking exemptions from the CO₂ tax to energy savings is being designed. Slovenia has furthermore set a number of economic incentives for the implementation of energy saving measures in industry. Other measures such as a system of energy use comparison for major consumers and Information/awareness raising campaigns and training activities complement the package.

• On the basis of the information provided in the NEEAP the policy package for the transport sector seems to be well balanced. This assessment of the transport sector differs from the negative assessment of the experts who point to important gaps.
Conclusions

Based on the NEEAP assessment and the survey result the Slovenian policies show some good progress over recent years. Improvements could be the following:

- Some policy gaps still need to be tackled in most sectors.
- The implementation of the EPBD is reported to be too slow and energy performance certificates are lacking for buildings.
- Transport policy does not go significantly beyond EU regulations and is according to experts one of the major policy gaps.
- The lack of funding for energy efficiency is seen as an important challenge and the introduction or strengthening of energy efficiency funds accordingly as the most promising policy instrument.
3.4.25 Spain

Introduction

Based on the NEEAP assessment and survey results, Spanish energy efficiency (EE) policy can be considered average, with both good and unsatisfactory elements. On the one hand, the NEEAP aims at improving EE in Spain until 2020 but lacks a long-term vision until 2050. Both the existence of energy agencies at different governance levels and the monitoring, reporting and verification scheme are positive elements of the Spanish policy.

The assessments of 34 domestic experts interviewed regarding the Spanish EE policy is mixed as well. Two thirds of them see ambitious policies in at least a few sectors, while one third considers the overall ambition to be rather low. Only 17 % of interviewees find no or very little progress since the last NEEAP was filled. Still, 70 % of experts believe that the Spanish ESD target will not or only be attained due to its low ambition.

Sectoral Assessment

• The NEEAP does not include a tailored strategy to improve EE in the public sector. Only a few measures are mentioned in the NEEAP, which in case of public buildings mainly target public lightning, water supply and water desalination. The NEEAP names, but does not further illustrate existing guidelines for public procurement. Accordingly, almost 90 % of experts find no or only some progress with respect to EE in public procurement.

• Regarding residential housing, the NEEAP assessment points to the application of minimum energy performance standards and economic incentives, but criticizes the missing definition of sanctions in case of non-compliance. Energy performance certification is mandatory for residential and public buildings with a floor area of more than 1000 m², but no provisions for non-compliance are named. About 25 % of the surveyed experts consider the residential sector to be the one with the most important policy gaps.

• Regarding the appliance sector, the Ecodesign and Labelling Directives have been transposed into Spanish law. Yet, there are hardly any economic incentives in place to support the substitution of inefficient appliances by efficient ones. In contrast, in the first NEEAP Spain has been promoting the substitution of old appliances by new efficient ones with about 55 M€ per year. Overall, the policy package for the appliance sector is not well balanced.

• Based on the NEEAP assessment, the Spanish EE policy for the industrial and service sector can be considered balanced in the sense that both supply (e.g. co-generation) and demand (e.g. energy audits) are addressed. Economic incentives for investments in more energy efficiency technologies have been established. Legislation, that would oblige certain companies to use energy management systems, is planned. About 15 % of experts think of the industrial and service sector as the one with the most important policy gaps.

• Regarding EE in the transport sector, the NEEAP assessment is inconclusive. While a lot of instruments and measures targeting all modes of transportation are mentioned, their description within the NEEAP is not specific. It is therefore difficult to thoroughly assess their quality. Among the planning
instruments in the Spanish policy package are the compilation of sustainable urban mobility plans and the promotion of cycling. About 30 percent of the experts find the most important policy gaps in the transport sector.

Conclusions

Based on the results of the survey and the NEEAP assessment, the ambition and quality of Spanish EE policy can be considered average compared to other member states. Following issues can be addressed to further strengthen the policy package:

• **Public sector** should describe binding guidelines for public procurement.
• **Buildings sector** should ease access to energy advice and audits for homeowners.
• **Appliances sector** should provide economic incentives to purchase EE appliances.
• **Industry sector** should define energy saving targets.
• **Transport sector** could use more economic incentives.
3.4.26 Sweden

Introduction

The NEEAP screening indicates that the Swedish policy for energy efficiency is comparatively ambitious even though only in specific sectors. This assessment is largely in-line with the opinions of the experts since nearly 60% of the experts consider the ambition of the Swedish energy efficiency policy to be rather high. However, the experts also think that only little progress was made during the past three years.

Sweden has set itself an overall energy efficiency target for 2020. A specific target for 2050 has been set for the buildings sector. These targets are supported by strong horizontal measures, namely taxation and research: The excise duties on energy are relatively high. It is noteworthy that energy advice is available at all governance levels (national, regional and municipal).

Sectoral Assessment

• In a sectoral perspective, the public sector has received an average rating in the NEEAP screening. The NEEAP assessment thus confirms the expert view that the public sector could do much more for energy efficiency. One of the strengths of the Swedish public sector is the role played by municipalities. A precondition for national funding for strategic work on energy efficiency is that municipalities set themselves targets. Most Swedish municipalities furthermore employ energy and climate advisors.

• The policies for appliances are in line with the EU directives but not worked out further.

• The policy package for the residential sector comprises several information tools as well as economic incentives. An interesting measure is the establishment of procurement groups that address property owners as well as tenants to develop options for improving energy efficiency.

• Sweden’s policy for industry and the tertiary sector comprises mandatory requirements of the environmental code and a voluntary energy-intensive industry focused efficiency programme (PFE). The required obligations in the PFE are complemented by economic incentives, capacity building and advice.

• In the transport sector efficient technical solutions, efficient operation, modal shift or avoidance of private car traffic is promoted especially via regulations, economic incentives for environmental friendly vehicles, financial charges for car traffic, information and R&D.
Conclusions

Improvements could be the following:

• The public sector is considered a comparatively weak sector in the NEEAP analysis and the experts’ opinion. The policy package could be strengthened if specific targets and a vision were defined. It is also advised to further promote providers of energy services and the energy service market.

• It is advised to strengthen the policy package for appliances.

• It is recommended to further clarify how professionals of the buildings sector are trained and educated; energy audits for buildings and financing instruments are not mentioned.

• With regard to appliances the NEEAP does not mention economic incentives or specific information tools to support energy labels and standards; it is advices to clarify these.

• It is recommended to focus transport policy more on public transport or alternative modes to render the alternatives to private cars more attractive.

• Good practice: Eco-driving is incorporated into the driving test for license class B.

• Good practice: Every single Swedish Municipality has an energy and climate consultant to provide advice and support to citizens.
3.4.27 United Kingdom

Introduction

The screening of the NEEAP from the UK shows a comparatively ambitious energy efficiency strategy. However, the majority of domestic experts assess the progress made by the UK in the last 3 years as low-moderate: 60% believe that only a few additional policies have been set up. With regard to the overall ambition of the UK, the experts are divided with about half of the respondents considering the ambition to be rather low and the other half considering it relatively high.

Sectoral Assessment

• The government announced clear CO₂-emission reduction targets for the public sector to be achieved by investments in energy efficient buildings, sustainable procurement and sustainable business travels. Via a memorandum between the national government (DECC) and local government groups the overall targets are expected to result in robust self-regulated actions. For public services as health and education specific action plans are developed. Interest-free loans are provided especially for the public sector to finance investments.

• Great potential for additional energy savings is assumed for the housing stock. The roll-out of advanced and smart meters is expected to increase awareness on energy efficiency and energy saving potential in the domestic and non-domestic sector. Instruments focus on cost savings by investments in energy efficiency. The Green Deal is expected to become a key financing instrument for the residential sector.

• Energy efficiency policies for appliances are to a large extent based on EU legislation. A first information tool exists. Complementing policies have not been worked out yet.

• The UK policy for the industrial and tertiary sector is primarily based on market mechanism. A Trading scheme beyond the EU ETS is established for large electricity users. The green deal is expected to enable retrofits in homes and businesses. Energy saving targets and minimum standards for industries are not specified in the NEEAP. The several economic incentives are not accompanied by regulations or obligations.

• The transport sector is expected to contribute 18% of the savings for the 9% target. The fuel efficiency of cars is the key part of the UK strategy. The UK promotes especially ultra-low emission vehicles, the use of biofuels in transport (also aviation) and modal shift for private trips and freight transport. One focus is the provision of the infrastructure (plug-in charging places, high speed rail lines, broadband network). Another focus is on information measures and incentives for the purchase of low carbon vehicles. Activities in research and development or in traffic organisation which also impact energy efficiency receive less attention in the NEEAP.
Conclusions

On the basis of the NEEAP screening the energy efficiency policy of the UK can be considered comparatively ambitious. However, the experts surveyed are divided about this point and furthermore rate the progress of the last three years as medium or even low. Improvements could be the following:

• The new Green Deal is a key instrument for the residential sector; experts are uncertain about its actual impact and perceive it as a risk although they also see possible positive effects.

• It is recommended to complement EU legislation on appliances with stronger incentives and education and training measures.

• Good practice: Universities face a 40% reduction in capital funding unless they have a carbon management plan and have made absolute or relative reductions in carbon emissions.

• Good practice: establishment of carbon reduction commitments for large energy-intensive organizations that are normally not covered by the ETS.
4 Conclusions

Since 2008, when the analysis of NEEAPs in EEW1 was finished, the European Union has continued to develop the overall political framework for energy efficiency by adopting new measures, addressing new sectors and strengthening existing measures. Most prominent examples are the replacement of the ESD by the EED with new mandatory measures, the recasts of the EPBD, the EcoDesign Directive, and the energy labelling framework Directive, and emission performance standards for new passenger cars. Many Member States have also considerably advanced their policies.

Despite these remarkable achievements, the overall picture for energy efficiency remains somewhat ambivalent in the NEEAP screening: An effective implementation of the measures induced by EU Directives will require a higher degree of harmonisation and integration. Up to now, measures addressing different sectors are often not well aligned to each other or lack a clear design when it comes to their implementation at the Member State level. Moreover, certain end-use areas are not addressed sufficiently (e.g. modal shift in transport, coherent policy packages for industry including carriage of goods, etc.).

At Member States level, crucial steps towards an integrated and effective policy package are the establishment of institutions and infrastructures that promote energy efficiency, such as energy or climate protection agencies, the establishment of energy efficiency obligations and/or energy efficiency trusts or funds, and the creation of favourable framework conditions for energy services. These provide the administrative infrastructure and the funding framework for most of the sector-specific policies and measures that are needed to address barriers to energy efficiency and stimulate energy efficiency markets. In most of the NEEAPs the need for economic incentives for energy efficiency measures in the building sector has clearly been recognised. In addition, it can be observed that the policy packages that have been established for the buildings sector are already quite advanced, at least compared with other sectors. Another area, in which we detected considerable progress, is energy-efficient public procurement: Meanwhile, most member states have introduced some sort of requirements, criteria, or lists of products in this regard. This is a development that can be clearly attributed to the provisions set out in the ESD with regard to the public sector.

Both the findings from the survey and the NEEAP assessments reveal that the transport sector is the one with regards to which policymakers show the least ambition: A complete lack of comprehensive policies on energy efficiency in transport, including the European level, was criticised by the experts analysing the NEEAPs. Even though there are some positive examples in specific sectors and countries, experts criticise the lack of political will and a clear strategy to act in most Member States.

It is obvious, as it was in the NEEAP I analysis, that some Member States used the NEEAP II process as an opportunity to develop a separate energy efficiency strategy. Especially in these Member States a clear link between a long-term climate or energy strategy and the energy efficiency strategy was explicitly made. However, these member states remained a minority as for most member states a lack of a long-term vision beyond 2020 can be observed and a regular tightening and/or revising of measures, regulations and goals is missing. Another weak spot uncovered by the NEEAP screening is a lack of measures targeting the need for education and training of professionals, especially in the building sector.
The support for research and development could as well be improved. Many NEEAPs do not explicitly mention measures to facilitate research and development for energy efficiency.

The expert survey also showed an enormous disparity among Member States in the levels of ambition of their energy efficiency policies. In some Member States, the recognition of the economic, social, political and environmental benefits of energy efficiency drives ambitious legislation and funding programmes whereas others just do the bare minimum required by the European Directives (and sometimes even less than that). A large number of experts, especially from countries where energy efficiency is currently not a political priority, stressed the crucial role of EU legislation in driving national energy efficiency policies. They mentioned that without EU directives no or almost no activities would have been carried out in their countries. Many experts especially consider the (first) EBPD (Directive 2002/91/EC on the energy performance of buildings) a milestone, catalysing a new legal framework for buildings.

However, in overall terms, progress in energy efficiency in the last years across Member States is seen as rather modest by the interviewed experts. Especially in sectors specifically mentioned by the ESD, e.g. energy efficiency in public procurement, the conditions for energy efficiency services, financial instruments for energy savings, market development was very limited according to the experts. Also, the public sector has to a large extent not taken the exemplary role required by the ESD. Though, this finding is contradictory to the results of the analysis of the NEEAP documents.

Therefore, an improved policy framework which strongly accelerates progress in energy efficiency policies is needed according to energy efficiency experts. Many stressed the importance of straightforward requirements and strict follow-up on the implementation. They appreciated the new Energy Efficiency Directive (EED) and expressed their hope that the ensuing policy measures will bring the European Union on track to achieving the 20 % energy efficiency target. In times of tight public budgets, smart combinations of legislative, financial and information measures need to be found.

In the survey, the institutional and financial conditions for national energy efficiency policy were also addressed: The important role of energy agencies on national, regional and local levels was emphasised by many experts. The main institutional challenge mentioned by a number of experts is that in many Member States, regions and cities, but also on the European level, there is a shortage of staff dealing with energy efficiency. This lack of staff often has an impact on the quality of the transposition of European Directives but even more so on monitoring compliance and enforcement of the legislation. On Member State level, but also regionally or locally, this is exacerbated by the fact that the responsibility for energy efficiency policies is spread among several departments or ministries. Experts mention that often it has been especially hard to persuade finance departments to support energy efficiency policies.

In a number of countries, experts see the regional and local level as a main driver of energy efficiency - also because the benefits of energy efficiency are easier to communicate to local policy makers. Across Europe, there is an increasing number of regions and local authorities which are willing to make energy efficiency a priority. This is also confirmed by the rising number of signatories of the Covenant of Mayors. It remains a long-term challenge to further support these activities by European legislation.

The conclusion is that national energy efficiency policy packages have to be improved in all relevant sectors to achieve additional energy savings of at least 1 % per year compared to autonomous energy
efficiency improvements. Considering that the cost-effective potential is 2% per year, 1% seems even modest. A more ambitious implementation of EU Directives and energy efficiency policy could therefore bring net economic benefits to businesses and consumers in the Member States.
5 References


FhG-ISI (Fraunhofer Institut Systemtechnik und Innovationsforschung); FFE (Forschungsstelle für Energiewirtschaft e.V.) (2003): Möglichkeiten, Potenziale, Hemmnisse und Instrumente zur Senkung des Energieverbrauchs branchenübergreifender Techniken in den Bereichen Industrie und Kleinverbrauch, Final Report on the behalf of BMU, Ufoplan FKZ 201 41 136, Karlsruhe and Munich


## Appendix

### 6.1 Criteria for Screening of NEEAPs

#### Governance framework

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description/Sub-Criteria</th>
<th>Rating</th>
</tr>
</thead>
</table>
| **Long-term EE target(s) and strategy** | • General EE target 2020 (or similar timeframe) defined (i.e. not ESD target)  
• EE target 2050 (or similar timeframe) defined  
• Policy roadmap/strategic plan for achieving the target(s) exists | • Two or three of the subcriteria fulfilled = 2  
• One fulfilled = 1  
• None fulfilled = 0 |
| **Involvement of non-governmental and market actors, and sub-national authorities** | • Energy Companies (Art. 6.2 ESD)  
• ESCOs  
• Local authorities / regions  
• Further non-governmental actors (e.g., consumer organisations, trade associations, research institutions, etc.) | • Three or four of the actors have a role in EE policy (according to NEEAP) = 2  
• One or two of the actors have a role = 1  
• None has a role = 0 |
| **Energy agencies and climate protection agencies** | • National energy agency  
• Regional and/or local energy agencies | • Energy agencies exist at two or three governance levels = 2  
• Energy agency(ies) at one governance level = 1  
• No agencies = 0 |
| **EE mechanisms for overall coordination and financing** | • Energy efficiency obligations and white certificate schemes  
• Energy efficiency trusts or funds  
• EE funding through national budget and overall coordination | • Either EEO or trust established = 2  
• EE funding through budget + overall coordination = 1  
• No overall coordination = 0 |
| **Favourable framework conditions for energy services** | • Guarantee funds  
• Standardised contracts  
• Removal of legal barriers, if any  
• Other supportive framework conditions | • Either EEO or trust established = 2  
• EE funding through budget + overall coordination = 1  
• No overall coordination = 0 |
| **Horizontal measures** | • Energy (or CO2) taxation higher than EU minimum rates  
• Voluntary agreements (in more than one sector)  
• R&D support, e.g., energy research subsidies  
• Others | • Two or more of the subcriteria fulfilled = 2  
• One of the subcriteria fulfilled = 1  
• None fulfilled = 0 |
| **Monitoring, reporting and verification** | • Share of top-down and bottom-up calculations used,  
• Evaluation methods allow for differentiation between autonomous and additional savings | • Advanced MRV (i.e., should be able to differentiate between all and additional savings) = 2  
• Basic MRV = 1  
• No or insufficient MRV = 0 |
Any other issues relevant for the general assessment of the NEEAP and the EE policy framework:

- Thorough analysis and evaluation of NEEAP1 (i.e. a clear distinction between NEEAP1 and 2 measures);
- Information about implementation progress of NEEAP1 measures
- Early savings

(No rating, to be included in summary text)

Public sector

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description/Sub-Criteria</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector strategy</td>
<td>• Public sector strategy (vision, mission, clear goals and funding provisions, a realistic and binding timescale)</td>
<td>• Element fully included = 2</td>
</tr>
<tr>
<td>Role model, transparency, and demonstration</td>
<td>• Public relations activities to make strategy transparent and to act as role model, incl. demonstration projects</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Role model</td>
<td>• Partly included = 1</td>
</tr>
<tr>
<td>Public procurement</td>
<td>• Public procurement (energy criteria, clear responsibilities)</td>
<td>• Not included = 0</td>
</tr>
<tr>
<td>Public buildings</td>
<td>• Public buildings (targets, energy management, agencies, funding, energy criteria, reporting)</td>
<td></td>
</tr>
<tr>
<td>Adequacy of policy package</td>
<td>• Supply and demand side of EE markets addressed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Different actors and their specific barriers considered</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Potentials considered</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• (policy design is based on an assessment of the energy saving potentials in each sector or even sub-sector)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Policy mix well balanced (the three following aspects should be addressed: financing/subsidies, binding/regulatory instruments, information/advice)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Three or four of the topics addressed/ considered = 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Two of the topics addressed/ considered = 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• One addressed = 0,5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• None addressed/ considered = 0</td>
</tr>
</tbody>
</table>
## Residential sector

### Buildings (including commercial buildings)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description/Sub-Criteria</th>
<th>Rating</th>
</tr>
</thead>
</table>
| Minimum Energy Performance Standards | • MEPS for different types of buildings  
• Standards based on life-cycle cost studies  
• Regular revision and tightening of MEPS based on a roadmap  
• Compliance control and enforcement mechanism in place | • All subcriteria fully included = 2  
• Two or three subcriteria fulfilled = 1  
• None fulfilled = 0 |
| Other regulations | • Spatial planning  
• Building inspections  
• Component requirements etc. | • Two or more other requirements = 2  
• One other requirement = 1  
• None = 0 |
| Economic incentives | • Tax breaks  
• Subsidies  
• R&D funding  
• Awards for demonstration projects etc. | • All subcriteria fully included for all building types = 2  
• One element included = 1  
• None included = 0 |
| Financing instruments | • Soft loans and/or third party financing and others. Financing of different measures, projects and programmes as well as the information of and communication about such. | • Financing for all measures / projects fully included = 2  
• At least one programme = 1  
• None included = 0 |
| Energy Performance Certificates | • National registry of EPCs  
• Mandatory display in building transactions  
• System of quality assurance (accreditation of assessors, spot checks etc.)  
• Featuring of reliable, easy-to-understand recommendations for energy performance improvements and cost-benefit estimates | • All subcriteria fulfilled = 2  
• EPC but no additional subcriteria fulfilled = 1  
• None included = 0 |
| Energy advice and audits | • Easy available impartial and customised advice (subsidised initial and on-site advice)  
• Advisers inform about costs and benefits of different improvement options and financing opportunities  
• Assistance during measure implementation is offered | • All subcriteria fulfilled = 2  
• At least one programme available = 1  
• None included = 0 |
| Information tools | • Different information activities (e.g. campaigns, websites, calculation tools etc.) specifically designed to meet the information needs of the respective target groups  
• Information activities linked to other instruments (regulations, agreements etc.)  
• Provision of reliable cost-benefit estimates for end-users  
• Regular revision of information material | • All subcriteria fulfilled = 2  
• At least one programme available = 1  
• None included = 0 |
| Demonstration projects | • Demonstration projects and/or awards for ultra-low-energy buildings | • Two or more projects = 2  
• One project = 1  
• None included = 0 |
| Education & training | • Vocational and academic education on energy efficient construction/renovation for building professionals  
• Programmes for further training and certification | • All subcriteria fulfilled = 2  
• Some efforts but not all subcriteria fulfilled = 1 |
### Appliances

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description/Sub-Criteria</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimum Energy Performance Standards</strong></td>
<td>• EPCs with ambitious requirements, regular updates and effective compliance regimes&lt;br&gt;• Voluntary agreements with manufacturers to promote BAT&lt;br&gt;• Effective market surveillance is in place</td>
<td>• All subcriteria fully included = 2&lt;br&gt;• Ecodesign Directive in place = 1&lt;br&gt;• None fulfilled = 0</td>
</tr>
<tr>
<td><strong>Economic incentives</strong></td>
<td>• Tax breaks&lt;br&gt;• Subsidies&lt;br&gt;• R&amp;D funding&lt;br&gt;• Awards for super-efficient appliances etc.</td>
<td>• Two or more criterias fulfilled = 2&lt;br&gt;• One element included = 1&lt;br&gt;• None included = 0</td>
</tr>
<tr>
<td><strong>Energy labels</strong></td>
<td>• EU Energy Label is implemented including an effective market surveillance&lt;br&gt;• Introduction of a national well-know and effective voluntary label</td>
<td>• All subcriteria fulfilled = 2&lt;br&gt;• EU Energy Label in place = 1&lt;br&gt;• None included = 0</td>
</tr>
<tr>
<td><strong>Information tools</strong></td>
<td>• Different information activities (e.g. campaigns, websites, information centres, energy consultance, calculation tools etc.)</td>
<td>• Two or more implemented = 2&lt;br&gt;• At least one tool available = 1&lt;br&gt;• None included = 0</td>
</tr>
<tr>
<td><strong>Education &amp; training</strong></td>
<td>• For retail staff and other supply chain actors and EE networks&lt;br&gt;• Effective national measures to integrate and inform supply chain actors about EE</td>
<td>• All subcriteria fulfilled = 2&lt;br&gt;• At least one subcriteria fulfilled = 1&lt;br&gt;• None included = 0</td>
</tr>
<tr>
<td><strong>Adequacy of policy package</strong></td>
<td>• Regular revision of taining materials&lt;br&gt;• Supply and demand side of EE markets addressed&lt;br&gt;• Different actors and their specific barriers considered&lt;br&gt;• Potentials considered based on an assessment of the energy saving potentials in each sector/subsector&lt;br&gt;• Financing, regulatory instruments and information and advice should be addressed</td>
<td>• Three or more of the topics addressed/considered = 2&lt;br&gt;• Two of the topics addressed/considered = 1&lt;br&gt;• None addressed = 0</td>
</tr>
</tbody>
</table>
## Industry and tertiary sector

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description/Sub-Criteria</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimum Energy Performance Standards</strong></td>
<td>• MEPS for equipment, production process and products</td>
<td>• All subcriteria fully included = 2</td>
</tr>
<tr>
<td></td>
<td>• Ecodesign Directive is implemented</td>
<td>• Ecodesign Directive implemented = 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• None fulfilled = 0</td>
</tr>
<tr>
<td><strong>Energy saving targets</strong></td>
<td>• Energy saving/action targets in place and clearly described</td>
<td>• All subcriteria fully included = 2</td>
</tr>
<tr>
<td></td>
<td>• Setting is organised on sectoral level or by an agency for individual companies OR an organizational structure was established that target most companies</td>
<td>• No clear description of implemented actions/targets = 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• None = 0</td>
</tr>
<tr>
<td><strong>Obligations/commitments</strong></td>
<td>• Clear obligation/commitment to energy audits, energy management, technology implementation, technology phase out</td>
<td>• Two or more commitments = 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• At least one clear commitment = 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• None included = 0</td>
</tr>
<tr>
<td><strong>Economic incentives</strong></td>
<td>• High tax rates on CO2/energy consumption</td>
<td>• All subcriteria fully included = 2</td>
</tr>
<tr>
<td></td>
<td>• Subsidies and grants (e.g. for energy audits, preferential loans, early depreciation etc.)</td>
<td>• One incentive included = 1</td>
</tr>
<tr>
<td></td>
<td>• Pull and push factors should be integrated</td>
<td>• None included = 0</td>
</tr>
<tr>
<td>** Tradable permits**</td>
<td>• GHG emission trading for a specific sector</td>
<td>• Scheme for an important part of the economy is introduced = 2</td>
</tr>
<tr>
<td></td>
<td>• White certificates</td>
<td>• A limited scheme is implemented = 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• None included = 0</td>
</tr>
<tr>
<td><strong>Energy or CO2 taxation</strong></td>
<td>• Taxes above EU minimum rates</td>
<td>• All subcriteria fulfilled = 2</td>
</tr>
<tr>
<td></td>
<td>• EU Directive of minimum rate is implemented</td>
<td>• EU Directive implemented = 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• None included = 0</td>
</tr>
<tr>
<td><strong>Energy labelling</strong></td>
<td>• Labels for EE due to EU Directive</td>
<td>• All subcriteria fulfilled = 2</td>
</tr>
<tr>
<td></td>
<td>• National labels implemented that go beyond the EU Directive</td>
<td>• EU Directive implemented = 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• None included = 0</td>
</tr>
<tr>
<td><strong>Other measures</strong></td>
<td>• Education and outreach</td>
<td>• Two or more subcriteria fulfilled = 2</td>
</tr>
<tr>
<td></td>
<td>• Data collection and energy accounting</td>
<td>• At least one fulfilled = 1</td>
</tr>
<tr>
<td></td>
<td>• Capacity building</td>
<td>• None addressed = 0</td>
</tr>
<tr>
<td><strong>Adequacy of policy package</strong></td>
<td>• Supply and demand side of EE markets addressed</td>
<td>• Three or more of the topics addressed/considered = 2</td>
</tr>
<tr>
<td></td>
<td>• Different actors and their specific barriers considered</td>
<td>• Two of the topics addressed/considered = 1</td>
</tr>
<tr>
<td></td>
<td>• Potentials considered based on an assessment of the energy saving potentials in each sector/subsector</td>
<td>• None addressed = 0</td>
</tr>
<tr>
<td></td>
<td>• Financing, regulatory instruments and information and advice should be addressed</td>
<td></td>
</tr>
</tbody>
</table>
### Transport sector

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description/Sub-Criteria</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Planning instruments</strong></td>
<td>• Smart spatial planning&lt;br&gt;• Improvements of bicycle and pedestrian infrastructure&lt;br&gt;• Improvements of public transport infrastructure&lt;br&gt;• Traffic calming&lt;br&gt;• Traffic management system (controlling, information and car-park routing) etc.</td>
<td>• High degree of inclusion = 2&lt;br&gt;• Average degree of inclusion = 1&lt;br&gt;• Low degree of inclusion = 0</td>
</tr>
<tr>
<td><strong>Regulatory instruments</strong></td>
<td>• Fuel economy standards / vehicle CO2 emission standards&lt;br&gt;• Speed restrictions&lt;br&gt;• Fuel quality standards&lt;br&gt;• Less-Emission-Zones / driving restriction areas&lt;br&gt;• Parking supply restrictions for private cars&lt;br&gt;• Rules for energy-efficient public procurement&lt;br&gt;• Including freight transport onto ESC</td>
<td>• High degree of inclusion = 2&lt;br&gt;• Average degree of inclusion = 1&lt;br&gt;• Low degree of inclusion = 0</td>
</tr>
<tr>
<td><strong>Economic incentive</strong></td>
<td>• Reform of vehicle taxation (e.g. registration tax, inclusion of company cars)&lt;br&gt;• CO2 related fuel tax&lt;br&gt;• Congestion charges and road tolls (freight and passenger)&lt;br&gt;• Abolition of commuter allowances&lt;br&gt;• Financial incentives to promote alternative fuels and technologies&lt;br&gt;• Subsidies for public transport and sustainable freight transport</td>
<td>• High degree of inclusion = 2&lt;br&gt;• Average degree of inclusion = 1&lt;br&gt;• Low degree of inclusion = 0</td>
</tr>
<tr>
<td><strong>Information, advice and education</strong></td>
<td>• Mobility management offers (for schools, businesses, local authorities)&lt;br&gt;• Mobility advice for transport users (information on trip, modes etc.)&lt;br&gt;• Information and image campaigns for sustainable transport&lt;br&gt;• Vehicle labelling (wth A to G scale)&lt;br&gt;• Gear shift indicators&lt;br&gt;• Taining for eco-driving for private persons, truck and bus drivers&lt;br&gt;• Mobility education in schools, companies, driving schools and others</td>
<td>• High degree of inclusion = 2&lt;br&gt;• Average degree of inclusion = 1&lt;br&gt;• Low degree of inclusion = 0</td>
</tr>
<tr>
<td><strong>R&amp;D support</strong></td>
<td>• Funding for public or private R&amp;D for sustainable transport (in the fields of fuels, vehicles, modes, fright transport –inter, multi modal and modal shift-passenger transport)</td>
<td>• High degree of inclusion = 2&lt;br&gt;• Average degree of inclusion = 1&lt;br&gt;• Low degree of inclusion = 0</td>
</tr>
<tr>
<td><strong>Adequacy of policy package</strong></td>
<td>• Supply and demand side of EE markets addressed&lt;br&gt;• Different actors and their specific barriers considered&lt;br&gt;• Potentials considered based on an assessment of the energy saving potentials in each sector/subsector</td>
<td>• Three or more of the topics addressed/considered = 2&lt;br&gt;• Two of the topics</td>
</tr>
</tbody>
</table>
6.2 Project Partners of the EEW Project

Gold Sponsors

Silver Sponsors