How are the neighbours doing? Making energy efficiency efforts comparable through NEEAP screening

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Abstract

How have national energy efficiency policy portfolios evolved since the first round of NEEAPs back in 2007? What needs to be improved and which policy gaps need to be closed? And which good practices are out there for other Member States to learn from? These are the leading questions for the analysis of all 27 NEEAPs to be done in the project "Energy Efficiency Watch", which seeks to facilitate a successful implementation of the Energy Services Directive (ESD).

For making the policy efforts comparable between Member States, we have developed a template for standardised data collection and a methodology for rating a country's policy performance both against the background of the NEEAP requirements and against some essential policy design and planning recommendations developed earlier in the project. The standardised information gathered via the screening template is then used for a condensed, illustrative presentation of each country's performance in terms of ESD implementation, thus facilitating cross-country analysis.

The topics covered and criteria used in the screening range from an analysis of overarching governance frameworks and a per-sector review of comprehensive policy packages to an assessment of the methods used for calculating energy savings.

The paper will present both the methodology of the NEEAP screening and preliminary results, and it will conclude on what lessons can be learned from the cross-country analysis.

Introduction

When the European Union launched the Directive 2006/32/EC on Energy End-Use Efficiency and Energy Services (ESD) back in 2006, it was in the hope that Member States would finally begin to harness the enormous untapped energy saving potentials (cf. Fraunhofer ISI et al. 2009) by effectively tackling the numerous barriers to energy efficiency and addressing the specific problems in each of the end-use sectors in a comprehensive and strategic way.

These barriers[1], and hence also the respective need for policy support in the different sectors, are highly country-specific. Consequently, there is no universal, one-size-fits-all solution, but each Member State needs to find its own specific way of effectively dealing with these issues by developing an adequate policy framework.

It is in this spirit that the Directive required Member States to draft three consecutive National Energy Efficiency Action Plans (NEEAPs) - in 2007, 2011, and 2014, respectively. These plans are supposed to outline the policies and measures with which Member States seek to achieve the indicative target of 9% final energy savings by 2016 required by the ESD. This can therefore be seen as one of the

1 Typical obstacles to energy efficiency include financial barriers (e.g. high upfront costs, long payback times and risk aversion), technical barriers (e.g. performance uncertainties, lack of suitable and affordable technologies), information barriers (e.g. search and information costs, lack of awareness of energy-efficient solutions, lack of understanding of their benefits), market failures (e.g. external costs and benefits, split incentives), and regulatory barriers (e.g. energy price regulation and tariff structures that disencourage energy efficiency investments). For more information on barriers, see for example IEA 2010, Koeppel & Ürge-Vorsatz 2007, Sorrell et al. 2004.

most important requirements of the Directive as it encourages Member States to make good use of these plans as a comprehensive, strategic policy tool that will eventually enable them to better co-ordinate, and thus make more effective, 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 are 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 to report on the actual savings achieved so far. This paper focuses on the methodology used for, and preliminary conclusions drawn from, the analysis of selected aspects of the second NEEAPs, which were submitted to the European Commission in the second half of 2011.

Since Member States were not obliged to use the guide for structuring the NEEAPs that was provided by the European Commission, the second round of plans again shows large differences in terms of structure, contents, and level of detail of the information provided, just like it was the case with the first NEEAPs. Still, an overall trend of improvement of the plans compared with the 2007 plans can be observed: Member States tend to report in more detail and more comprehensively about their portfolio of energy efficiency improvement measures and put these into a broader perspective more often by also presenting national strategies, primary energy saving measures and other activities not directly related to the ESD, but still relevant to the issue of energy saving. The extent of reporting on achieved/estimated impacts has also advanced. Some countries furthermore use the plans to reflect on their own weaknesses in terms of energy efficiency policy, for instance by pointing to policy deficits or data gaps. All this shows that most Member States seem to have learned from their own experiences, and possibly also from those of other countries.

This paper is organised as follows: first we introduce the Energy Efficiency Watch project[2] and the broader task in which the NEEAP screening is embedded. We then describe the methodology we use for analysing the plans and explain which are the key topics we focus on during this analysis and why. After that we present some preliminary results, first by showing some examplary assessments from the Member State level and then in the form of cross-country comparisons of selected aspects.

The broader task: Integrating NEEAP-based policy analysis and market feedback in 27 National Reports

The Energy Efficiency Watch (EEW) project was initiated in 2006 when a group European, national and regional parliamentarians called for 'Action, not talk' and 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'[3]. The European Forum for Renewable Energy Sources (EUFORES), a cross-party and cross-country network of parliamentarians supporting the promotion of renewable energy and energy efficiency, was tasked with the coordination of the EEW 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 the civil servants and experts involved in drafting the NEEAPs and implementing energy efficiency policy. One important means to achieve 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 Energy and Environment Agencies), and Energy Cities (Association of European local authorities) are partners in the project consortium.

2 http://www.energy-efficiency-watch.org/

3 See http://www.energy-efficiency-watch.org/index.php?id=76

One of the main objectives of the current 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. The key products in which this assessment of national policy progress will be presented are 27 National Reports, to be released in autumn 2012. These documents will be based on three main sources of information:

- A screening of each Member State's policy portfolio based on the second NEEAPs[4],
- a broad survey among experts/practicioners 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 doesn't.

The aim of this exercise is ultimately to determine strengths and weaknesses of the national energy efficiency policy frameworks, i.e. to highlight good practice examples and point out implementation deficits. The National Reports also seek to identify relevant policy gaps, key barriers and areas for improvement so as to provide guidance to Member States on how they could improve their policy portfolios.

Consequently, it is important to note that the NEEAP-based policy analysis, albeit at the heart of this paper, is just one step out of several in the overall assessment of national energy efficiency policy progress that is being done in the EEW project.

Methodology and focus topics of the NEEAP-based policy screening

For making the policy efforts comparable between Member States, we have developed a screening template for standardised data collection and a methodology for rating a country's policy performance against the background of some essential policy design proposals developed earlier in the project. The standardised information gathered via the template is then used for a condensed, illustrative presentation of each country's performance in terms of energy efficiency policy implementation in the National Reports, thus making the information easily accessible for policy makers and facilitating cross-country analysis.

In light of the European Commission doing their own in-depth assessment of the NEEAPs, and also given the limited scope of this particular task in the EEW project, we had to restrict our analysis of the plans to a few selected aspects rather than trying to cover 'everything'. As a consequence, we chose to focus on two topics that we consider highly relevant for successful energy efficiency policy based on previous research (Höfele & Thomas 2011; IEA 2010; Koeppel & Ürge-Vorsatz 2007; Schüle et al. 2011; WEC 2010; Wuppertal Institute & Ecofys 2009): a) comprehensive and well-designed policy packages in the different end-use sectors and b) an effective overarching governance framework.

Analysing the governance framework

We define the governance framework for energy efficiency as the structures, institutions, and mechanisms that should be in place to facilitate a smooth implementation of the sector-specific policies and measures (see for example (IEA 2010) for more information on energy efficiency governance). Consequently, for assessing this topic we analyse the Member States' policy framework along the following evaluation criteria:

- *Long-term strategy: Are there long-term targets for energy efficiency improvement (e.g. for 2020 and 2050) signalling stable political commitment and have corresponding strategies, timelines, and ideally also funding and reporting commitments, been established?*

4 The NEEAPs can be downloaded at http://ec.europa.eu/energy/efficiency/end-use_en.htm

- *Involvement of other actors: Are market and other non-governmental actors (e.g. energy companies, housing associations, NGOs, academics/researchers), as well as cities and regions involved in the design and implementation of energy efficiency policies?*
- *Energy agencies: Is there an energy agency, or possibly several of them at the different governance levels, to coordinate and/or implement activities to support end-users?*
- *Mechanism for coordination and financing: Has an effective mechanism for overall coordination and financing of energy efficiency measures been established (e.g. white certificates or an energy efficiency fund)?*
- *Energy services: Do the framework conditions favour the development of energy services[5] markets?*
- *Horizontal measures: Are adequate horizontal measures in place to tackle cross-sectoral market failures and barriers? For instance, is there financial support for research and development (R&D) for energy efficiency technologies to overcome the market failure of external benefits of R&D efforts?*
- *MRV scheme: Has an effective regime for monitoring, reporting, and verification (MRV) of energy savings been established? How are savings calculated (bottom-up vs. top-down; is it possible to distinguish policy-induced from autonomous savings)?*

Assessing sectoral policy packages

In the NEEAP-based policy screening we analyse the following sectors to see whether comprehensive and adequate policy packages have been established in each of these end-use areas: public sector, buildings, appliances, industry/tertiary (except public services), and transport. The guiding criteria (cf. Koeppel & Ürge-Vorsatz; WEC 2010; Wuppertal Institute & Ecofys 2009) applied here are as follows:

- *Comprehensiveness of policy packages:*
    - *Are the main elements of the 'ideal' sectoral packages' as derived in (Schüle et al. 2011) included?*
      With 'ideal sectoral policy packages' we mean effective combinations of different types of policies and measures that are especially tailored to address the relevant actors and their characteristic barriers in a specific sector. Therefore, the main elements (i.e. types of policies) that should be included in a comprehensive policy package are different in each sector (please refer to the next section on 'Exemplary results' to see which elements these are for each sector). We have derived these elements from (Schüle et al. 2011), a paper based on the findings from the analysis of the 2007 NEEAPs, which outlines what is good practice in terms of sectoral policy packages and governance frameworks. These 'ideal packages' are only a guidance, however, and must be adapted to local circumstances.
- *Adequacy of policy packages:*
    - *Are both demand and supply side of energy efficiency markets addressed through the packages?*
    - *Have the actors / target groups concerned and their specific barriers to energy efficiency uptake been taken into account when designing policy intervention?*
    - *Have existing energy saving potentials been considered?*
    - *Is the mixture of policies and measures well balanced ('carrots, sticks and tambourines' as phrased by Andrew Warren, Director of UK ACE, cf. (Warren 2007))?*
      Please note that the funding of policies and programmes, as well as their organisation and coordination, is addressed as part of the governance framework (through energy

5 As the EEW project and the NEEAP screening focus on the ESD, we understand the term ‚energy services' as defined in the Directive (Art.3(e)).

efficiency mechanisms and energy agencies) and therefore not included in the assessment of the sectoral policy packages.

We then collect the information available in the NEEAP for each element (i.e. policy or measure, mechanism, institution, or other kind of criterion listed above) of the governance framework or the respective sectoral policy packages in order to assess whether it is fully (or well) implemented or not, using a rating scale from 0 to 2 points: 2 stands for 'fully implemented', 1 for 'partly implemented' and 0 for 'not (or not sufficiently) implemented'. We also allow for half point ratings so as to be able to better reflect the nuances. In order to ensure a certain level of consistency and to keep it as objective as possible, we have also detailed under which conditions an element is to be rated as 'fully', 'partly' or 'not sufficiently' implemented. The latter will be explained along with the exemplary assessment results in the next section.

We originally intended to assess not only whether or not a certain policy or element is in place, but also the quality of implementation of the different policies and measures; however, we soon had to realise that this was often impossible to assess due to the lack of detailed information on the measures and their implementation status found in many NEEAPs. Therefore, the market feedback that we will receive from the stakeholder survey and from the in-depth expert interviews will be particularly valuable in this regard.

Since there are large differences between the NEEAPs in terms of the extent of detail with which the policy framework is described, another problem may occur: it is possible that some of the elements that we aim to analyse do exist in a certain Member State, but are not mentioned in the NEEAP, for instance because the Member State did not think they were relevant enough. This is particularly likely with measures that don't lead to any measurable energy savings by themselves (or where it is too difficult and costly to evaluate the impact), but are still important in terms of reinforcing the other policies and measures as part of the package (for instance, energy agencies, long-term strategies, different kinds of information measures, etc.). In order to avoid rating a certain element as not or insufficiently implemented only because it is not mentioned in the NEEAP, we consequently chose to include some additional sources of information. This allowed us to double-check our assessment in some instances and thus to provide a more realistic and complete picture of Member States' policy portfolios. However, for reasons of fairness and to avoid distortion of the results we would only include studies or other sources that cover all 27 Member States. The most important additional source we used is the MURE database[6], which lists and describes energy efficiency policies in the EU.

Exemplary results: Analysis at Member State level

The main objective of our NEEAP-based policy analysis is to point out for each Member State in which areas it has made progress or is already on a (very) good track and in which areas it needs to improve. The former can then be used as good practice examples for experience sharing between Member States.

As a concrete example of what our assessment along the criteria described in the previous section looks like, we present below how we rated the effectiveness and quality of the governance framework in the case of Denmark. According to our analysis Denmark has established a coherent general support framework and can therefore be considered as a good practice example for effective energy efficiency governance.

In the first column, readers will find the short names of the evaluation criteria that were presented in the methodology section, and the rating that was achieved for the respective criterion; the second column lists the indicators for achieving the maximum score of 2 points; and the third column presents the information collected for the respective criterion, i.e. the basis for the rating.

6 http://www.muredatabase.org/

This being a qualitative analysis, we allowed for some flexibility in our assessment: This means that the indicators for the top score rating describe an ideal form of policy implementation, and it cannot be expected from every Member State to follow this exactly. Such standardisation of policies would not make much sense, either, given that countries face different circumstances and have different starting points (for instance, 30 year-history of energy efficiency policy vs. having only started a few years ago). That is why we take the country-specific situations into account in the assessment, and thereforethe indicators are not to be seen as strict requirements but more as a guideline (also due to the often insufficient information on policy details and implementation in the NEEAPs).

Overarching Governance Framework - Denmark		
Criteria and rating	**Indicators for achieving 2 point-rating ('fully implemented')**	**Explanation of rating**
Long-term strategy Rating: 2	Target(s) beyond ESD timeframe, e.g. for 2020 and/or 2050, exist(s), strategic plan(s) or policy roadmap(s) for achieving targets exist(s), ideally with funding and reporting commitments	• DK aims to be independent of fossil fuels by 2050; the 'Energy Strategy 2050' outlines interim savings targets, measures and focus areas for achieving this goal • Government work programme 'Denmark 2020' details how DK aims to become one of the three most energy-efficient countries in the world by 2020
Other actors involved Rating: 2	Involvement in national EE efforts of at least 3 of the following 4 actor groups: energy companies, ESCos, local/regional authorities, other non-governmental actors (e.g. research, consumer organisation)	• Involvement of regional and local authorities, e.g. via Voluntary Agreements • Involvement of energy companies via energy savings obligation • Knowledge Centre for Energy Saving in Buildings: likely to involve research institutions and building professionals (not explicit in the NEEAP)
Energy agencies Rating: 2	Energy agencies (or similar institutions) exist at two or three governance levels, or national agency with regional/local activities	• Danish Energy Agency as main co-ordinating institution • Strong link to regional and local activities established
Mechanism for coordination and financing Rating: 2	Energy efficiency obligations/white certificate scheme or energy efficiency fund established	• Energy savings obligation for energy companies with cost recovery via grid charges (advice/audits & subsidies for households, businesses, public sector) • Energy Saving Trust (information, campaigns, funding for Knowledge Centre for Energy Saving in Buildings)
Energy services Rating: 0	Two or more of the following subcriteria fulfilled: guarantee fund, standardised contracts, removal of legal barriers (if any), other supportive framework conditions	• No mentioning of supportive framework for energy services in the NEEAP or MURE
Horizontal measures Rating: 2	At least the following horizontal measures are in place: energy taxes higher than EU minimum rates, R&D support.	• Energy savings obligation for energy companies; 2008 decision that targets be increased to annually 1.5% of final energy consumption

		• Increase of energy tax rates • Public Funding for Energy Research, Development and Demonstration (source: MURE)
MRV scheme Rating: 1.5	Advanced MRV system established, which combines (a considerable share of) bottom-up and top-down methods, and allows for differentiation between all and additional savings.	• National bottom-up method: used to assess savings from energy companies' obligations (major part of Danish energy savings), then adjusted to ESD requirements (non-ETS, 2016 savings) • Top-down method (as recommended by European Commission): used to assess savings per sector (except industry)

The following table illustrates how we address the second focus topic of our analysis, the effective sectoral policy packages. Here, the Estonian buildings sector was chosen as an example, because our assessment has shown that Estonia is on a good track.

Policy package buildings sector - Estonia		
Criteria and rating	**Indicators for achieving 2 point-rating ('fully implemented')**	**Explanation of rating**
Minimum Energy Performance Standards Rating: 1.5	There are MEPS for different building types (at least res./non-res.); ideally based on life-cycle cost studies; a process for regular revision and tightening of MEPS exists, ideally in form of a roadmap already announcing next tightening steps; a mechanism for compliance control and enforcement is in place.	• In place since 2008 & regular tightening foreseen • Control and enforcement strategy unclear
Other regulations Rating: 2	There are at least two other regulations, e.g. regarding energy-efficient spatial planning, building inspections, component requirements, energy management, etc.	• Spatial planning for district heating regions • Mandatory advice for buyers of HVAC equipment • Further regulations planned (HVAC inspections, individual metering)
Economic incentives Rating: 2	There are incentive programmes (e.g. tax breaks, subsidies, awards) for both new and existing, residential and commercial buildings; the level of support increases with the level of savings achieved; incentive scheme(s) are linked to the other instruments like MEPS, EPCs, advice etc.	• Subsidies for EE renovation of apartment buildings (up to 35% of project costs, depending on level of savings) • Incentives for audits • Tax incentives to foster EE renovation
Financing instruments[7] Rating: 2	Financing is available for single measures, comprehensive retrofits, and new construction; financing opportunities	• Large soft loan programmes for EE renovation (funded through EU structural funds)

7 Financing instruments differ from financial/economic incentives in that the former tackle the barrier of capital constraints, i.e. they make an investment possible in the first place, while the latter address the barrier of long payback/risk aversion by making an investment economically more attractive. In practice, these two types of instruments are often combined, e.g. in the form of soft loans with subsidised interest and/or a partial grant component.

	should be communicated widely through various channels (banks, architects, contractors, energy advisors); application process is simple and transparent.	
Energy performance certificates Rating: 1.5	National registry of EPCs; display is mandatory in all transactions (incl. in advertisements); system of quality assurance (e.g. accreditation of assessors, spot checks); EPCs feature reliable, easy-to-understand recommendations for improvements, ideally incl. cost-benefit estimates	• In place since 2009 • EPCs include improvement recommendations • Publication of EPCs required • Pilot project for training and certification of auditors (MURE) • Responsibility for quality assurance defined (MURE), but implementation unclear
Energy advice and audits Rating: 2	Impartial, customised advice is easily available (possibly subsidised; both initial and on-site advice should be available); the advisers inform about costs and benefits of different improvement options, and about financing opportunities; assisstance during measure implementation is also offered.	• Subsidies for audits • Audits required for public buildings • Assistance during design and construction for apartment associations • Planned: further develop auditing tools; training for auditors
Information tools Rating: 1	There are different information activities, specifically designed to meet the needs of different target groups; information is clearly linked to other instruments (regulation, incentives/financing, etc.); information tools should provide reliable cost-benefits estimates to end-users; information materials should be regularly revised to consider new (technology) developments.	• Only one awareness raising programme mentioned in NEEAP • However, according to MURE many different activities, mostly project-based, have been taking place under this programme (e.g. media campaigns, brochures, creation of Energy Efficiency Consulting Centre, energy weeks, etc.) • Addresses only residential buildings
Demonstration Rating: 2	There are projects and/or awards for low-energy buildings and/or nearly zero-energy buildings (NZEB)	• €5 million funding for low-energy demonstration buildings from Swiss-Estonian cooperation programme • NZEB demonstration project planned
Education & training Rating: 0.5	Energy efficient construction/renovation is integrated in the vocational and academic education of all building professionals; there are also programmes for further training (and certification thereof); training materials are regularly revised to consider new (technology) developments	• Nothing implemented yet, but need for education and training of building professionals clearly recognised • Several measures planned in this area
Adequacy of the package Rating: 2	At least three of the following topics are considered/addressed: Supply and demand side of markets addressed; Different actors and their	• Supply and demand side addressed • Different actors considered • Policy mix is well balanced with

	barriers considered; Potentials considered; Policy mix well balanced (i.e. at least 'carrots, sticks and tambourines')	regulations, incentives, and advice.

Preliminary findings from cross-country analysis

While the main objective of both the NEEAP-based policy screening and the National Reports as a whole is to assess the policy progress that has been achieved at the level of a particular Member State and to derive suggestions as to how that Member State could improve its energy efficiency policy, there will also be a report summarising the sectoral assessments across Member States. In the following, we present some first results from such cross-country analysis.

Strengths and weaknesses of energy efficiency policy found in most Member States

Based on the analysis of so far 13 countries, we have drawn some preliminary conclusions on strengths and weaknesses of the policy frameworks in EU Member States. We can only present some examples as for now, and more strengths and weaknesses are likely to be identified in the EEW report to be published in autumn of 2012.

Cross-country analysis of strengths. Based on the NEEAPs screened so far, most Member States have shown 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 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 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 – 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 NEEAP 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.

Cross-country analysis of weaknesses. In most Member States analysed so far, we have identified significant policy gaps and/or implementation deficits in the following areas:

- **Energy services.** Even though fostering market development of, and improving the framework conditions for, energy services is one of the central objectives of the ESD, the analysis of the NEEAPs still shows a significant policy gap in this regard. Despite the fact that most plans do address the topic of energy services in some way, there is still a clear implementation deficit in terms of concrete policies or measures that would support the market development.
- **Education and training of building professionals.** As mentioned before, in the buildings sector the package approach has generally been implemented quite well. Nevertheless, one significant weakness clearly exists also in this area: 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.
- **Mobility management in the public sector.** Regarding the public sector, while there are a number of activities going on as mentioned above, a clear policy gap can be observed in terms of mobility management, where only very few Member States have implemented any measures at all.

Discussion: What lessons can we learn from the second round of NEEAPs?

Even though the EEW analysis is still work in progress, we are able to draw some general, yet strictly preliminary, conclusions from the NEEAP-based policy screening.

While it can be generally observed that NEEAPs have improved in their second edition, many still lack the level of detail in measure descriptions that would be needed to allow for assessing the quality of implementation and the impact/effectiveness of the different policies. Here, EEW with its two-tiered approach of comparing 'what is written in the documents' with 'what experts and practitioners report from the field' may be able to provide some valuable insights.

An even more important conclusion from this is that NEEAPs must not be seen as substitutes for independent policy evaluations. On the contrary, most Member States could benefit a lot from more in-depth evaluations of their energy efficiency policies and measures, particularly with bottom-up methods. These would also provide valuable insights for improving the policy implementation process, and also more reliability in the quantitative results announced.

In terms of evaluation, the preliminary results show large differences between top-down and bottom-up savings and some countries reportedly exceeding their targets based on top-down calculations of all energy savings and on including early actions. To make future reporting for the upcoming Energy Efficiency Directive (EED) easier to compare between Member States, we therefore conclude a need to achieve more harmonised calculation rules than were required for the ESD, e.g. concerning the setting and reporting of baselines and savings for energy efficiency obligations.

The non-mandatory NEEAP template provided by the European Commission has proven useful in guiding Member States towards using the plans not only as a mere reporting exercise but as a comprehensive policy planning and monitoring tool - while still leaving them the freedom to structure their plans according to their specific needs and circumstances. We therefore conclude that a mandatory template for structuring the NEEAPs might be counterproductive in that it may impede countries from building up coherent energy efficiency strategies that are adequate for their specific context. What could however be very useful would be to bindingly require Member States to meet certain quality criteria regarding the types and extent of detail of information provided when reporting on the setup of their overall energy efficiency strategy, the implementation of individual policies and measures, and the calculation of impacts.

Ultimately, it is essential to keep in mind that detailed plans and comprehensive policy packages will only be effective in achieving high energy savings if the funding required for their implementation can be secured and if skilled staff is available both in policy implementation and in markets. As a

support for the upcoming EED, it would also be very useful that the European Commission defines and monitors indicators about energy efficiency market development (e.g., overall and incremental investment in energy efficiency, and skilled staff employed). This would help energy efficiency activities to be recognized as a true industry and business, and it would form an interesting complement to the NEEAP assessments focussed on policies and measures.

One important achievement of the NEEAP process is that, in many Member States for the first time, the need to draft a NEEAP induced a comprehensive planning process for energy efficiency policies, targeting the most important sectors and potentials, as well as monitoring and evaluation of energy savings. This may even be viewed as the most important impact the ESD has had. Therefore, we see it as highly beneficial that the upcoming EED aims to keep up the requirements for reporting, monitoring and evaluation; but then again it might turn out as a great loss if comprehensive plans were to be no longer required in the future.

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