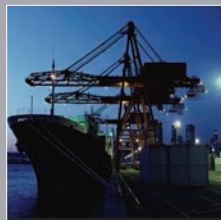




Implementing the Energy Services Directive - the role of the Energy Agencies

European Energy Network



Introduction to EnR, the European Energy Network

EnR , the European Energy Network

Founded in 1991, EnR is a voluntary network of 22 European energy agencies promoting sustainable energy; disseminating best practice; and strengthening collaborative working across Europe. The network provides a unique channel for pan-European technical support on matters of energy policy, strategy, evaluation, marketing, programme design and delivery. Information exchange is encouraged through a series of working groups that also act as forums for the conception and delivery of joint projects funded by the EU, and as platforms for joint responses to consultations.

Our vision

EnR seeks to be at the forefront of Europe's drive to improve energy efficiency, increase the use of renewable energy and mitigate the damaging effects of climate change. We aim to achieve this vision by acting as a bridge between national activities and those of the European Community and other relevant international bodies.

For more information, please visit the EnR website:

www.enr-network.org





Foreword by the EnR president

Improving energy efficiency is recognised as the key solution in addressing energy security, climate change and economic competitiveness. It is now, in times of economic and financial turmoil that this becomes even more of a priority.

Amongst the EU initiatives and directives aimed to improve energy efficiency, the Energy Services Directive has the broadest energy efficiency scope. It defines targets for energy savings, establishes National Action Plans, and involves the energy companies in improving energy efficiency of the end-users. As part of the Romanian Agency for Energy Conservation's 2008/9 Presidency of EnR we prepared with SenterNovem a report on contribution of the National Energy Agencies to implementing the ESD Directive. The research work was undertaken in the last months of 2008, and I would like to express our thanks to SenterNovem and to all our partners who contributed to the survey as shown to the right.

I am delighted that this EnR report will be launched at the EU Sustainable Energy Week in February 2009. On behalf of EnR, we hope that the findings of this report will strengthen the contribution of the network and its member national agencies to the successful implementation of this Directive by all Member States.



Dr. Tudor Constantinescu, EnR President
February 2009





Executive summary

EnR, the European Energy Network, conducted a survey on the role of energy agencies in the implementation of the Energy Services Directive (ESD) in the EU and associated countries using the expertise of EnR members. 20 EnR members responded to the survey: 16 members participated, while four members indicated they were not involved in the implementation of the ESD by their Member State. The focus of the report is on overall targets, the exemplary role in public procurement, promotion of energy end-use efficiency, and on the preparatory process for the first and the second National Energy Efficient Action Plans (NEEAPs).

The majority of the energy agencies can be classified as Influencers (44%), i.e. they have an advisory (influencing) function towards their Ministry. Other energy agencies can be classified as Controllers (31%), i.e. they have a decision function and Promoter (25%), i.e. they have a promotions function. It can be concluded that energy agencies have different roles compared to each other.

The key areas in which the agencies are involved are monitoring the results of the energy end-use in the public sector (Art. 5) and energy audits (Art. 12). On the other hand, implementing measures and monitoring for metering and informative billing of the consumer (Art. 13) is rarely done by the agencies and also has not so much priority (yet) in the Ministries.

The general recommendation towards both the Commission and the Member State is:

It appears that the energy agencies expect many challenges in the preparation towards the second NEEAP, such as the interpretation of the ESD, calculating the energy savings target, reaching the national target and organisational issues.

Both the Commission and the Member States should be aware of

these challenges and act upon these issues by facilitating knowledge and best practice exchange such as the Concerted Action (CA) and the EnR Energy Efficiency, Monitoring Tools and Transport Working Groups.

The main recommendations towards the Commission are:

1. To ensure that the Directive reaches its goals and objectives, future legislative work should look more specifically into the additionality that such measures would bring to existing national policies.
2. Development and timely dissemination of bottom-up calculation methods for the Energy Climate Package target 2020. EnR could play an advisory role in developing this bottom-up calculation through its Working Group on Monitoring, as it did with the development of the top-down calculation method for the ESD.

The main recommendations towards the Member States are:

1. Member States can use Art. 13 (smart metering and informative billing), in which not many Member States are involved yet as an opportunity to involve energy agencies, since many agencies are experienced with auditing and monitoring.
2. The national energy agencies can bridge the gap between EU and national legislation at one hand and implementation at the other. Especially in the area of efficiency they are the crucial factor. Therefore, the knowledge and know-how of the national energy agencies should be used to its full potential by their governments.



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1. Introduction

Europe can play a leading role in global efforts to reduce energy consumption and CO₂ emissions. Energy efficiency is at the core of European sustainable energy policies as it remains the most cost-effective manner to achieve the goals of sustainability, security of supply and competitiveness of the European economy.

A valuable tool for a more energy-efficient Europe is the Energy End-use Efficiency and Energy Services Directive (2006/32/EC), or ESD. The purpose of this Directive is to encourage energy efficiency through the whole supply chain, through the development of a market for energy services, and the delivery of energy efficiency programmes and measures to end users.

The Directive sets a minimum energy saving targets for Member States (MS) of 9% by 2016. Each MS has to draw up National Energy Efficiency Action plans (NEEAP), which have to be submitted to the European Commission for approval in 2007, 2011 and 2014. Targets in the ESD are indicative rather than binding, however MSs have a clear legal obligation to adopt and aim to achieve the target in a cost-effective way. Each MS approaches implementation from a different starting point, reflecting existing national policy frameworks.

The ESD defines a 'toolbox' for MSs, setting the framework for activities in a number of areas rather than prescribing exact measures. It sees an important role for the public sector as a market-driver, allows governments to impose public service obligations on energy distributors or retailers, sets requirements on metering and billing, and encourages the use of instruments such as energy performance contracting.

The ESD has the potential to drive real improvements in energy efficiency across the entire EU. However, this will require significant efforts in all MSs to implement the Directive. The extent of the success is largely dependent on the level of ambition of individual MS. In this report EnR has considered the role of the energy agencies with regards to implementation of the ESD in their Member State.

EnR consists of 22 national energy agencies. The agencies vary in their relationship to their national governments and their role in implementing the ESD. EnR members who are responsible for the implementation of the ESD are aware of the current status of implementation in their countries.

This report gives more insight into the role of the energy agencies in implementing the ESD. Through the course of this research, besides the role of energy agencies, it has also become more apparent what the status of the implementation is, and what kind of challenges the energy agencies foresee. From the results, recommendations have been developed to contribute to future

discussions on the ESD. The survey and data analysis were conducted in a timely manner to allow the report to be launched at the EU Sustainable Energy Week in Brussels in February 2009.

2. Methodology

The ESD covers a whole range of aspects. However, since the goal of the report is to see what the role of the energy agencies is in implementing the ESD not all these aspects needed to be covered by the survey and in this report. EnR therefore opted to focus on certain aspects of the Directive where a clear role for the energy agencies is apparent, as referenced in the certain articles of the ESD. These aspects are the overall targets, the exemplary role in public procurement, promotion of energy end-use efficiency, and on the preparatory process for the first and the second National Energy Efficient Action Plans (NEEAPs).

To map the contribution of EnR members to their own Member State's efforts in implementing energy efficiency policies and measures, a questionnaire was sent to all EnR members in December 2008. In addition to the questionnaire, clarifications or additional information was requested from the respondents through telephone interviews and/or by e-mail.

The draft report and results were discussed with the Dutch agency SenterNovem, which ran the project, and the EnR Troika, which consist of the members who held EnR's Presidency last year (Energy Saving Trust, UK), this year (ARCE, Romania) and the forthcoming year (ADENE, Portugal).

In total, 16 out of 22 members of the EnR participated in the EnR survey. Four members fell out of the scope of the questionnaire because they had no role in implementation the ESD. Two members were non-responsive. The countries that responded are shown in the table below.

Table 1: Respondents to the questionnaire

Member state	EnR Member
Austria	AEA
Bulgaria	EEA
Finland	Motiva
France	ADEME
Greece	CRES
Ireland	SEI
Italy	ENEA
Netherlands	SenterNovem
Norway*	ENOVA*
Portugal	ADENE
Romania	ARCE
Slovakia	SEA
Spain	IDAE
Sweden	STEM
Switzerland*	SwissEnergy*
UK	EST

* Note: Two members who did participate marked by a star are not part of the EU and therefore not obliged to implement the ESD. They filled in only that part of the questionnaire taking the measures into account, which are in line with the ESD.



3. Results

This chapter provides the results of the survey. Section 1 provides results on the classification of energy agency regarding their role in implementing the ESD. Section 2 presents results about the responsibilities of energy agencies regarding specific aspects of the ESD. Section 3 provides results on the preparatory process towards the first and second NEEAP and the future role of the agency. Section 4 presents the answers to some statements regarding the ESD and the role of the energy agency.

The Annex to this report provides best practice examples of various EnR members regarding activities which fall under the ESD.

3.1 Role of the energy agency

To find out what the role is of the energy agency in implementing the ESD, a closer look is taken at the agencies staffing and distinguishing different classes of agencies. Classification of the energy agencies provides the possibility to compare the types of agencies. In this study, the typology classification developed by Heather Greer was used, which uses three typologies:

- **Promoter:** responsibility for promotion, information dissemination and education/training.
- **Influencer:** Next to promotion, the agency is also involved in inducement, such as networking, preparing standard agreements, increasing policy input
- **Controller:** Next to promotion and inducement, the agencies who are controllers have a say in policy plans and can make choices in policy measures taken.

Figure 1 illustrates that the majority of the energy agencies can be classified as Influencers (44%). The classification of Controller (31%) and Promoter (25%) are quite equally distributed over the last two classification types.²

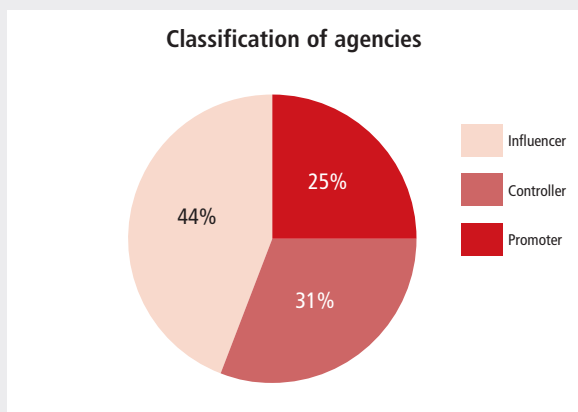


Figure 1: General classification of EnR members

1 H.Greer & M.Bazilian (2005) A Benchmark Study of Selected National Energy Agencies Heather, SEI, Ireland

2 On agency classified itself between promoter and an influencer and is now added as influencer

Classification per Directive

The ESD overlaps with other energy related Directives. Therefore the agencies were asked to classify their agency per other Directive as well. When the classification of the agencies is made per Directive (Figure 2), also most of the energy agencies are Influencers. Notable is that for the Co-generation Directive and the Labelling Directive none of the energy agencies is a Controller. Also, it becomes clear that not all agencies are involved in all directives.

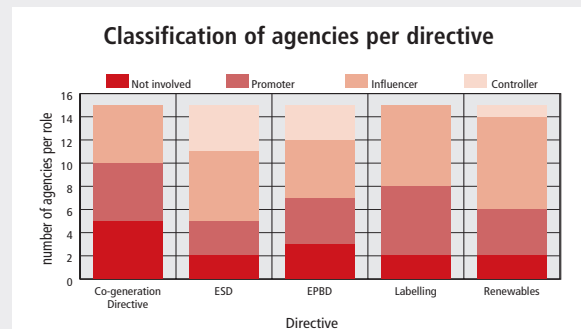


Figure 2: Classification per directive (n=15)

The survey also asked energy agencies to state, which Ministry is commissioning the Directives to ascertain whether the classification of the energy agencies is dependant on the commissioning Ministry. Our results show that the co-generation Directive, ESD, Labelling and Renewable Directive are commissioned by the Ministry dealing with Economics (among other things) between 70%-90% of the time. The EPBD is either commissioned by the Ministry of Economic affairs (36%), the Ministry of Environment (36%) or the Ministry of Development (27%). No specific trend could be found between the commissioning Ministry and the classification of the energy agency.

Classification per sector

Figure 3 illustrates the classification of the agencies for several given sectors are shown. The classification Influencer was assigned the most frequently in all sectors. Usually an agency sticks to its classification in all sectors, but some are in one or two sectors either Promoter or Controller. Two of the agencies can be classified in all three classes, depending on the sector.

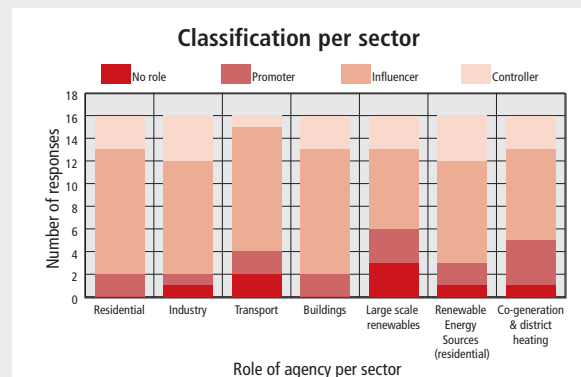


Figure 3: Classification of EnR members per sector (n=16)



In the survey the number of staff involved in the activities of the agencies in energy-related issues, such as Energy Efficiency (EE) and Renewable Energy Sources (RES) was registered by the agencies, to ascertain whether the general classification of the energy agencies is dependant on the staffing of the agency. Table 2 shows the four size classes in which the energy agencies are split up. 50% of the time more staff are involved in EE than RES related activities. No specific trend could be found between the staffing and its EE or RES related activities and the classification of the agency.

Table 2: Size classes of the energy agencies (n=15)

Size	% of the energy agencies
$x \leq 50$	33%
$50 < x \leq 100$	33%
$100 < x \leq 200$	13%
$x > 200$	20%

3.2 The energy agency and specific aspects of the ESD

Figure 4 illustrates, article by article, the responsibility of the energy

agencies with regards to implementation of the ESD. For each article we have also indicated how the agency is involved. The agency can be involved in all advising, implementation and/or monitoring.

The majority of responding agencies are:

- advising policy-makers in their country about almost all the articles in the ESD, except for tariffs (Art. 10) and metering (art. 13);
- implementing measures to make information available (Art. 7);
- monitoring the results of the energy end-use in the public sector (art. 5) and energy audits (art. 12).

Only a few agencies are:

- involved in any way in the net bound energy activities;
- either implementing measures for or monitoring for metering and informative billing of the consumer (Art. 13) or transposition activities (Art. 18).

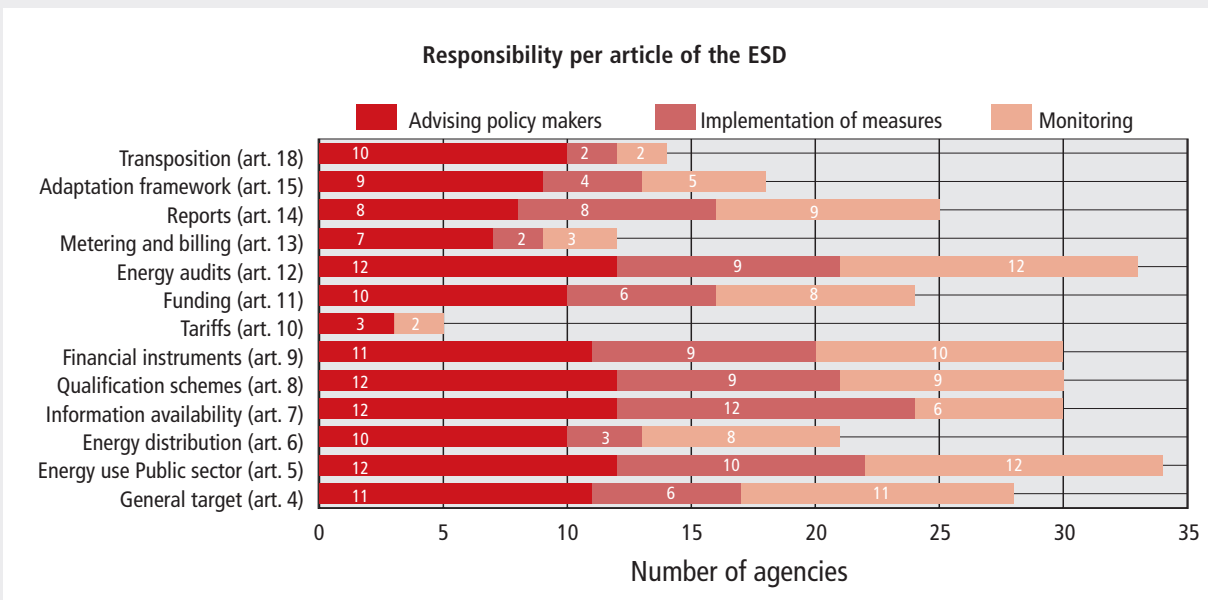


Figure 4: The responsibilities for each article and how many agencies are involved in advising, implementation and monitoring

In the following section, specific activities within the ESD are highlighted, to demonstrate how various energy agencies are involved /responsible for, in relation to the Ministries of the MS.

Note: The activities of the energy agencies are not always initiated by the ESD. A number of Member States and energy agencies have already been working on various aspects, which now fall under the ESD.



Achieving the national energy savings target

In order to achieve the indicative energy savings target set out in the ESD, measures can be taken in several sectors to improve energy efficiency on both the demand and the supply side (Annex III ESD).

EnR members were asked to indicate in which sectors their respective Ministries are implementing measures and in which sectors the energy agency is involved.

Table 3 shows that the Ministries are involved directly in most of the areas. 50% of the agencies are involved in horizontal measures, cross-sectoral measures and measures in the transport sector. In the industry and residential sector the agencies are very much involved. In addition, in these two sectors the majority of responding energy agencies stated that these are the sectors in which the highest improvement in energy efficiency are expected through measures implemented by the agency.

Table 3: Involvement of government and agency

Sector	Ministry	Agency
Residential	88%	88%
Industry	88%	88%
Transport	88%	50%
Cross-sectoral measures	88%	50%
Horizontal measures	88%	50%

In the ESD several measures are provided which a Member State can implement. In most countries, a choice is made regarding, which sector measures are going to be implemented in each sector. The role of the energy agencies in this choice is shown in Figure 5.

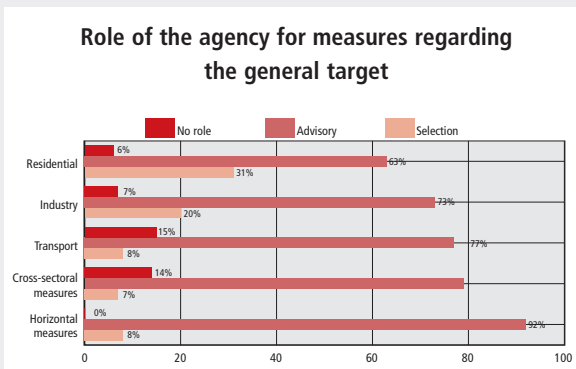


Figure 5: Role of the energy agency in the choice of areas/sectors

The majority of respondents act in an advisory role to their respective Ministries regarding which sectors to take measures in. In the industrial and residential sector respectively 20% and 31% of the energy agencies select the sectors where measures are to be implemented.

Energy Efficiency Public Procurement

Under Article 5 of the ESD, Member States must ensure that energy

efficiency improvement measures are implemented by the public sector to demonstrate its exemplary role. (Annex VI of the ESD).

In their responses to our survey, EnR Members indicated which eligible energy efficient public procurement measures are (or will be) implemented by the Ministry and, in particular by the energy agency as illustrated in Table 4. Financial instruments is the most utilised measure by both Ministry and energy agency, and purchasing or renting energy efficient buildings by the public sector is the least utilised by Ministry and energy agency.

Table 4: Public Procurement measures taken by the Ministry and agency

Measure	Ministry	Agency
Financial instrument	81%	63%
Purchase equipment and/or vehicles from EE specs	75%	38%
Purchase equipment EE consumption	56%	25%
Replace or retrofit existing equipment	38%	25%
Energy audits	75%	56%
Purchase or rent EE buildings	25%	19%

Figure 6 shows that most responding energy agencies advise their respective Ministry on energy efficiency procurement measures.

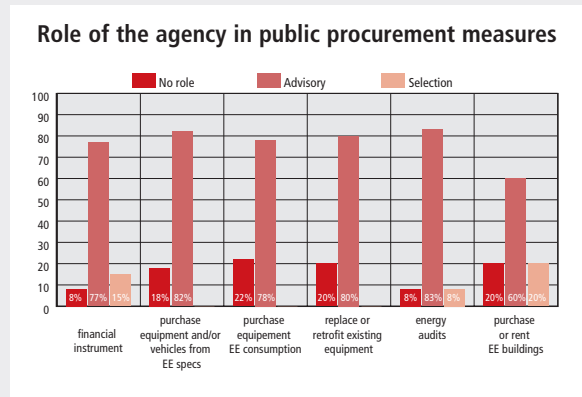
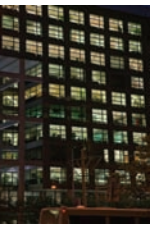


Figure 6: Role of the energy agency in public procurement measures

In addition, the responding energy agencies indicated which activities they undertake to raise public awareness of the exemplary role of the public sector with regards to energy efficiency. Of the agencies:

- 88% advise employees on how to behave in an energy efficient manner at home.
- 75% are developing methods to communicate best-practices from the public sector towards citizens.
- 63% are implementing energy efficiency measures in their own tender guidelines.



Promotion of Energy End-use Efficiency and Energy Services

Promotion of energy end-use efficiency can be carried out in several ways, which affects both the end-user side (e.g. promoting energy efficient products) as well as on the delivery side (energy distributing companies).

Figure 7 shows that monitoring, energy audits self completion, qualification and advising public sector and promoting energy end-use efficiency are activities where energy agencies are more directly involved than governments, revealing an important role for the energy agencies in these activities. In addition, our results show that fines are not currently utilised extensively by both governments and/or agencies.

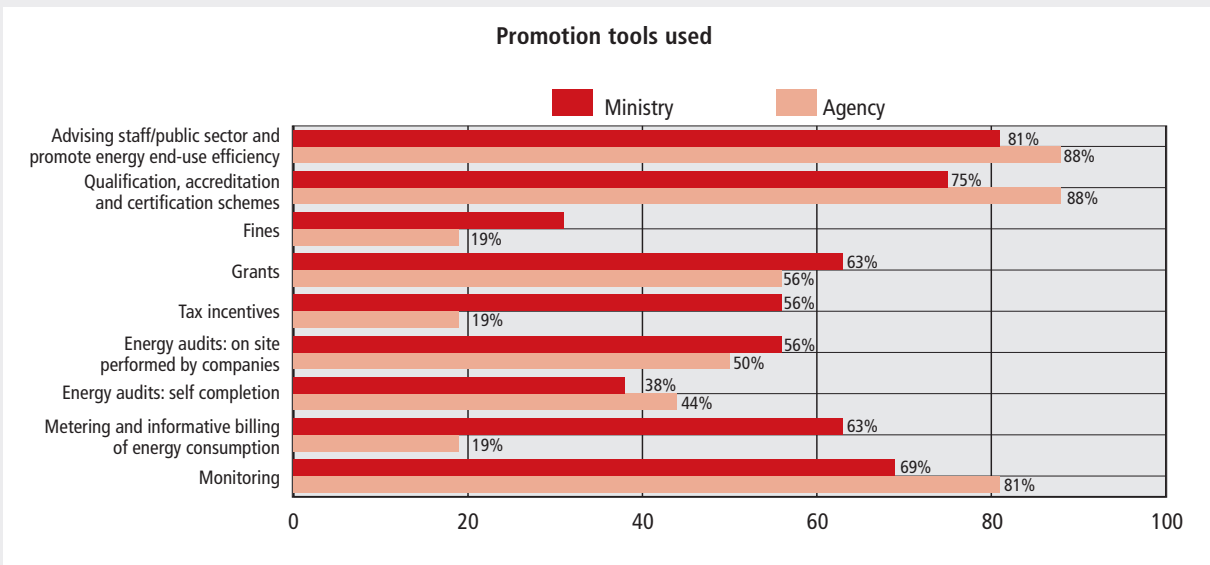


Figure 7: Promotion tools used by the Ministry and agency

While in all cases the agencies have a strong advisory role on the choice of instruments, the number of energy agencies that are responsible for selecting promotional tools in the areas of energy audits, certifications and information is slightly higher than other

aspects of the ESD (Figure 8). For almost all tools in which the agency is more directly involved than the Ministry, the high level of involvement of the agency corresponds with the slightly higher number of energy agencies who may select these tools.

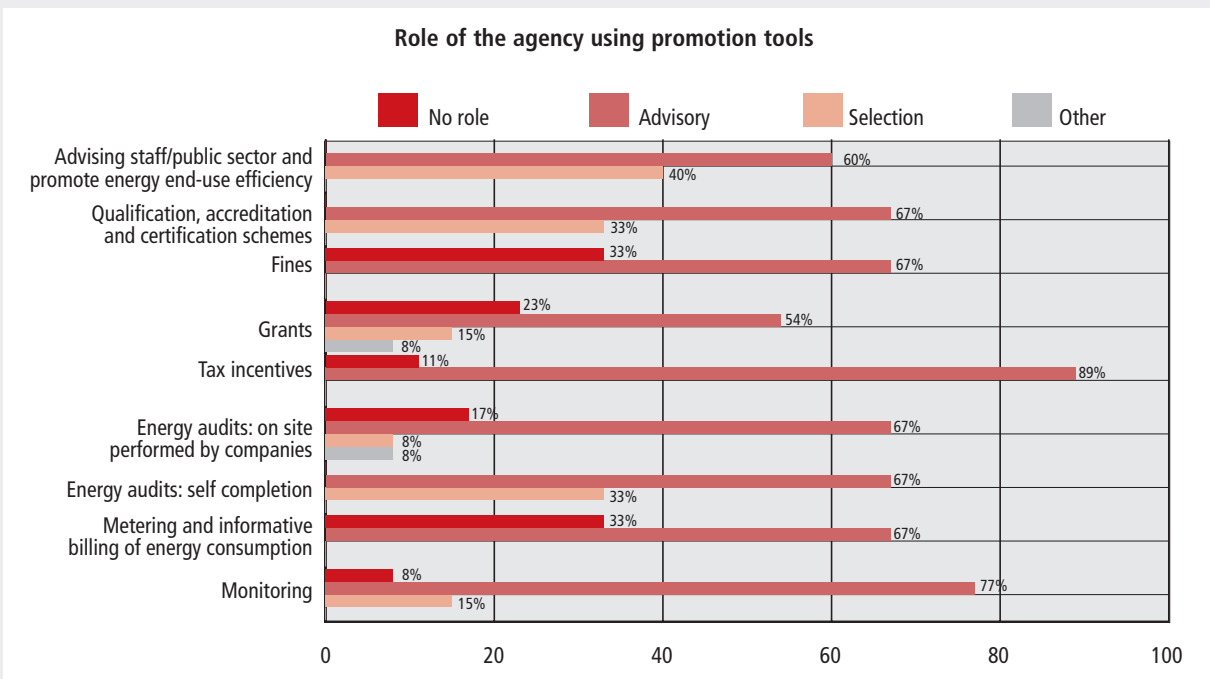


Figure 8: role of the energy agency in promotion tools



Individual and smart metering

Individual metering is one of the promotional tools used to influence the energy use of consumers and companies. In their responses to this question, six agencies stated that individual metering is not yet practised in their country. In the range of individual meters, a Member State can also choose to promote a smart meter. Smart metering includes remote reading and timely (by the hour or so) measurements for energy/gas/water use as well as ability to take a remote reading.

The stages at which responding Member States are with regards to implementing smart metering are illustrated in Figure 9. Most respondents are focussing on electricity metering when they refer to the use of smart or individual metering. The development of smart metering and the phases in which the Member States and the responding EnR Members vary. Not one clear phase can be distinguished. Most of the time, the Ministry has to decide on the implementation of smart meters.

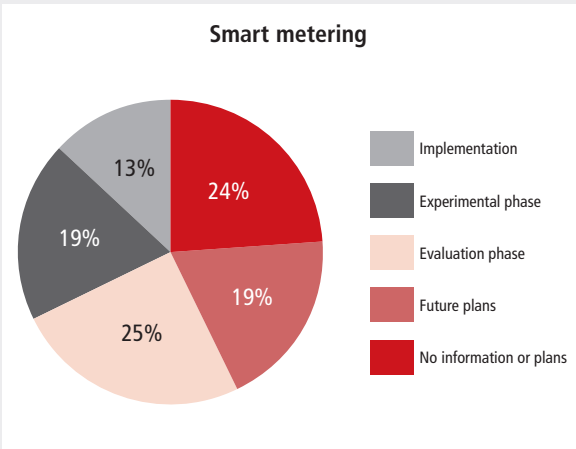


Figure 9: phases of smart metering in the Member States

3.3 Preparation process towards the 1st and 2nd NEEAP

Main challenges in the implementation of the measures and reaching target in first NEEAP were:

1. Interpretation of the ESD
2. Calculating the energy savings target and reaching the national target
 - reducing energy use/transition towards sustainable energy sources
 - choosing the most effective measures
 - Splitting ETS and non-ETS savings

- Lack of harmonised calculation methods to calculate the energy impact
 - Reliable data collection
3. Organisational issues
 - Unsure who is responsible for implementation of the ESD
 - Setting an example as the Public Sector to the Member State

EnR Members outlined several ways in which they plan to face the challenges mentioned above. Some examples are as follows:

- increase international cooperation (Concerted Action (CA), ESD, EnR Energy Efficiency, Monitoring Tools and Transport Working Groups;
- increase funds,
- voluntary agreements,
- increase awareness of consumers
- design own calculation methods for energy savings
- Involve stakeholders, market consultation.

Most of the responding energy agencies expect challenges when preparing for the second NEEAP. The main challenges mentioned are as follows:

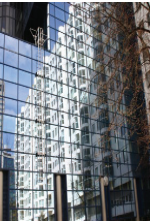
1. The lack of acceptable guidelines for saving calculations, benchmarking indicators, verification methods and the additional work required from agencies to do this
2. the evaluation of the first NEEAP
3. verification of the savings

Half of responding EnR Members feel that they can be more involved in the ESD for various reasons (e.g. assessment of the ESD, monitoring, selection and planning of measures).

Seven respondents expect a bigger role in the preparation process of the second NEEAP, six energy agencies expect the same role and two of the energy agencies are unsure about their involvement at all.

In general, most responding energy agencies felt that the transport, tertiary and residential sectors should have more focus within their agency. Some other activities were also mentioned as areas where increased priority within the agency was needed, namely:

- preparing the market for ESCO's
- white certificates
- coordination of EE measures within the country
- monitoring and measuring the savings
- involving stakeholders/educate households in EE behaviour



3.4 Statements about the ESD and the Energy Agency's contribution

As part of this EnR survey on the role of energy agencies in implementing the ESD, we asked respondents to select from a number of statements to indicate their support for these. The most noticeable results from the statements are:

1. Interpretation of the ESD
2. Calculating the energy savings target and reaching the national target

- 71% of the energy agencies **disagreed** with the statement that they should not be involved in policy development
- 50% of the energy agencies **agree** that they should have more responsibilities in the national implementation of the ESD
- 64% of the energy agencies think the influence on the choice of measures taken are strong enough

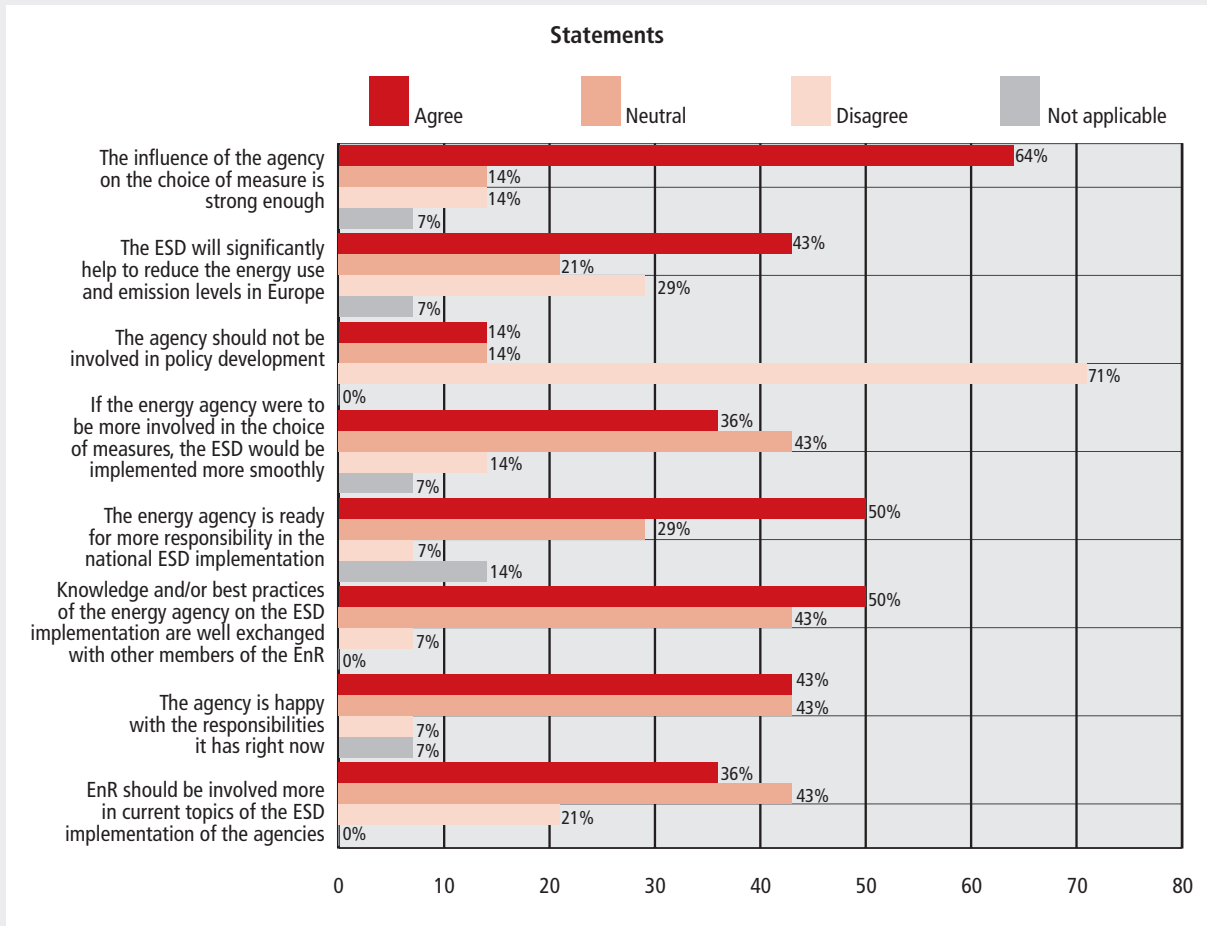


Figure 10: Answers to the provided statements

4 Conclusions and recommendations for improving the implementation of the ESD

4.1 Conclusions

It can be concluded that energy agencies have different roles compared to each other. The general typology category shows that the majority of the energy agencies can be classified as Influencers (44%). Other energy agencies can be classified as Controller (31%) and Promoter (25%). The majority of the energy agencies have an advisory (influencing) function towards their Ministry in almost all aspects of the ESD.

It also appeared that within the energy agency, roles and

responsibilities could change depending on the topic or area. As an example, the promotion tools for energy end-use efficiency monitoring, energy audits self completion, qualification and advising public sector and promoting energy end-use efficiency are activities where energy agencies are more directly involved than governments. Also, in these areas, more energy agencies are involved in the selection of the tools instead of advising. This reveals an important role for the energy agencies in these activities compared to the other measures or even other topics of the ESD.

The key areas in which the agencies are involved are monitoring the results of the energy end-use in the public sector (Art. 5) and energy audits (Art. 12). On the other hand, implementing measures



and monitoring for metering and informative billing of the consumer (Art. 13) is rarely done by the agencies and also has not so much priority (yet) in the Ministries.

It appears that the energy agencies expect many challenges in the preparation towards the second NEEAP, such as the interpretation of the ESD, calculating the energy savings target, reaching the national target and organisational issues.

Especially the calculation methods for the bottom-up approach is seen as a challenge. In the EMEEES project people are still searching for an appropriate calculation method. Since there is no harmonised ESD calculation method as yet, several Member States are starting to make their own calculations. It is therefore important that Member States are provided with clear guidelines and a harmonised calculation methodology to enable them to make well-defined impact assessments of the measures implemented.

4.2 Recommendations

Both the Commission and the Member States should be aware of the challenges as mentioned in the conclusions, and act upon these issues by facilitating knowledge and best practice exchange, for example through the CA ESD and various EnR Working Groups.

Towards the Commission

1. The Energy Services Directive has set ambitious goals for the regulation of energy savings and for creating a level playing field across the Member States for developing and implementing specific energy efficiency policies. However, several respondents mentioned that the regulations which now fall under the ESD were not initiated by the ESD in their country (i.e. they were already in place). To ensure that the Directive reaches its goals and objectives, future legislative work should look more specifically into the additionality that such measures would bring to existing national policies.

2. Robust and comprehensive data is crucial to enable governments to monitor performance against the ESD. To enable such data to be available and usable, partnerships must be developed and maintained between data holders, aggregators and analysts. The Residential Data Frameworks pilot in the UK is an example of how good partnerships can be built to ensure that comprehensive data can support the implementation of ESD (see Best practice case study of the UK).

3. We have learnt and recognised that it is crucial to develop a harmonised calculation method at the very beginning of a Directive (as was the case with the top-down calculations of the ESD). EnR is involved in the top-down indicators project through the Odyssee project under the EnR Monitoring Tools Working Group. The Odyssee project thus provides an important input to the ESD top-down calculation method. In addition Odyssee is the starting point for the top-down calculation within the EMEEES project. As for the bottom-up approach, EMEEES is still searching for an appropriate calculation method. It is therefore recommended to start early with developing a bottom-up calculation for the Energy Climate Package target 2020. EnR could play an advisory role in developing this bottom-up calculation through its Monitoring Tools Working Group, as it did with the development of the top-down calculation method for the ESD.

Towards Member States

1. The key areas in which the agencies in general are involved are monitoring the results of the energy end-use in the public sector (Art. 5) and energy audits (Art. 12). However, implementing measures and monitoring for metering and informative billing of the consumer (Art. 13) is rarely done by the agencies and also not have so much priority (yet) in the Ministry. As a Member State one can use this as an opportunity for the energy agencies, since many agencies are experienced with auditing and monitoring.

2. The national energy agencies can bridge the gap between EU and national legislation at one hand and implementation at the other. Especially in the area of efficiency they are the crucial factor. Therefore, the knowledge and know-how of the national energy agencies should be used to its full potential by their governments.

3. The relation between Ministry and energy agency of great importance. The experience of energy agencies can provide a valuable contribution to make the right decisions on e.g. high impact measures for energy savings.

4. Smart metering is in many Member States in the evaluation and the development phase. Most of the time, the Ministry has to decide on the implementation of the smart meters. Between Member states, knowledge about pilot and experiment results should be well exchanged.



Best Practice The national Energy Awareness Week in primary schools (Finland)

Background

The national Energy Awareness Week in Finland is an annual theme week in October (week 41) during which schools, companies and other organisations concentrate on energy efficiency activities. It was first introduced in primary schools in 1996 and a year later extended to other target groups. The size of the target group has been 20,000-25,000 per year since 1996, which is roughly half of the age group.

The energy topic is studied during one to two lessons every day during the theme week. The theme week at schools culminates in a national energy saving competition. Local energy companies support schools by providing education packages, organising visits to energy utilities and awarding the schools locally. Teaching material is published by LastenKeskus (Children's Centre publishing house specialized in children's material) and developed in cooperation with teachers and Motiva.

Results

Evaluation was carried out in 2001 as a part of a SAVE Project. Evaluation data was collected by testing the pupils and using questionnaire-based surveys for parents and teachers. Altogether 211 pupils, 12 teachers and 180 parents took part in the evaluation.

Key evaluation results are:

The knowledge of pupils on energy saving has been high after the theme week. 96% of responding pupils stated that they find energy saving sensible, but sometimes difficult (one third). More than 90% of the parents believe that it is important to teach children how to save energy and over 80% of the parents believed that the education received during the theme week had a good influence on their child and the children attempted to save energy at home.

Energy saving was discussed together with the whole family. Only 17% of the families did not have any joint conversations about the subject. Unfortunately it looks like the majority of the active discussions faded soon after the week had passed. This indicates that energy issues should be studied in the class during the whole semester.

According to the teachers, pupils were really interested in energy saving during the education. The teachers firmly believe that energy efficiency education affected the pupils in a positive way.



Best Practice Bonus-Malus on vehicles (France)

Background

Introduced in January 2008, the ecological bonus-malus system for automobiles is one of the first measures adopted at "Le Grenelle de l'environnement" (discussions with business, local communities, unions, and associations organised by the French government in the second semester of 2007). This applies to the purchase of a new vehicle with a financial incentive, calculated in relation to expected CO₂ emissions. The bonus-malus system relies on the energy-CO₂ label made mandatory for new vehicles in 2006. An eco-responsible motorist can thus benefit from a bonus of at least 200€ for any vehicle emitting less than 130g of CO₂/km, the bonus can even reach 5000€ for an emission level less than 60g of CO₂/km (essentially electrical vehicles). On the other hand, purchasing a model emitting more than 160g of CO₂/km is penalised by a minimum malus of 200€, but which cannot exceed 2600€.

Results

When this system was being set up, more than half of car sales were involved. Primary evaluation results (from the CCFA-Comité des Constructeurs Français d'Automobiles), issued in the first trimester of 2008, show a strong increase in the number of category B vehicles sold (100-120g of CO₂/km) in relation to the first trimester of 2007: 20-31% of total sales. This first encouraging result is supported by the decreasing number of vehicle sales in the high polluting categories, ranging from D to G (> 140g of CO₂/km) each of which has a diminished market share.

If the results obtained in the first trimester of 2008 are transposed into a fuel price increase context, the probable success of the bonus-malus system applied to cars could lead to its application in other product areas. This list has not yet been communicated. The system will be reviewed at the beginning of 2009. More information can be found on: www.ademe.fr

Best practice White certificate schemes (Italy)



Background

White certificates scheme was introduced first in Italy with respect the entire world. White certificates tradable documents that certify that a certain energy saving has been attained. It was managed by the Electricity and Gas National Authority in the beginning. Due to the previous expertise accumulated in the field of the energy efficiency, ENEA was afterwards chosen to manage the technical aspects of the mechanism; in the near future ENEA is expected to play an even bigger role by managing the entire mechanism, thanks to the good results reached. White certificates are issued by the Electricity Market Operator (GME) once it has been certified that a defined amount of energy saving will be attained by project implementation.

Results

The mean success factors of the schemes are: 1. The simplicity and the accurateness of the rules: 2. Flexibility for market operators to meet their goals: 3. Credibility and transparency of the policy approach

The scheme combines the guaranteed results of regulation with the economic efficiency of market-based instruments. The tradability of the certificates promotes the development of a market for energy efficiency products and services.

At the moment ESCOs are still used in certain areas and it is important to spread the attention of the white certificates to all the country.

Best Practice Long Term Agreements on energy efficiency (The Netherlands)



Background

Since the early 1990's, the Ministry of Economic Affairs has been making long-term agreements (or covenants) with various energy-intensive sectors as part of Dutch energy policy. The voluntary long-term agreements, or LTA's, are aimed at promoting energy savings in the Netherlands. The voluntary long-term agreements on energy efficiency (LTA's) are agreements between the government and companies and institutions on the more effective en efficient use of energy.

Results

Over the past 15 years LTA1 and LTA2 have led to an overall energy efficiency improvement of more than 2% per year; at the end of 2007 there are more than nine hundred participating companies from almost 30 sectors. In 2007 the overall energy efficiency improved even by 3.9%.

The success of the LTA can be found in the savings percentage of the programme. Even more important is the fact that the participants deal with energy in a systematic manner, because energy forms a fixed part of their business operations. What also makes LTA to a best practice is that the LTA is constantly evolving. The first covenants focused primarily on process efficiency. In LTA2 energy management outside the direct process (chain efficiency) and the use of renewable energy also became an important point of interest for the LTA participants.

At the moment LTA3 is in progress since 2001, which is a 'sustainability agreement' in which VNO-NCW, MKB Nederland and LTO make clear agreements with the national government. Due to the success of the previous LTA's, LTA3 has a term of validity until 2020.

More information can be found on: www.senternovem.nl/ita



Best Practice Energy Certification System (Portugal)

Background

The Energy Certification System includes mandatory shares of efficient classes for new buildings and large rehabilitation works. Additionally, specific regulations may be developed, aimed at encouraging improvements in the energy classes of existing buildings. The objective of this measure is to certify 475 thousand homes in new or rehabilitated buildings by 2015, i.e., to achieve a 10% share for energy class B- or higher.

Expected Results

Energy certification may result in average energy savings of 30% to 40%, resulting from intervention in least five areas: renewable energies, insulation, heat bridges, glass surfaces and shading.

Energy savings are evident when energy consumption is analysed for

a 4-people family, following urban consumption standards, consuming 4.4 thousand kWh per year. By implementing energy saving measures, this family may achieve savings of approximately 30%, corresponding to 16.5% savings from solar equipment, 6.6% from insulation, 0.7% from heat bridges, 5.7% from glass surfaces and 0.4% from shading.

On the other hand, if impact is analysed exclusively considering the thermal component and not considering use of biomass, it is concluded that the Certification may induce very significant energy savings, by reducing consumption for heating purposes by more than two thirds. This result strengthens compatibility of this plan with the National Climate Change Action Plan (PNAC), establishing a more ambitious 50% target. The certification is estimated to contribute with over 94 ktOE in energy savings, based on the aforementioned assumptions.



Best Practice Improving EE in energy intensive industries (Sweden)

Background

The Programme for improving energy efficiency in energy-intensive manufacturing industry (PFE) is intended to increase energy efficiency in energy intensive manufacturing industries. It is a cost effective program in which networking as a way to obtain information. Companies which join the programme are granted tax relief on their electricity costs. Companies have to introduce an energy management

system (EMS). By the end of the programme period, the companies have to show that they have achieved an improvement in the efficiency of their electricity consumption.

Results

More efficient use of electricity, more energy efficiency investments, more uses of energy management systems (EMS).



Best Practice Energy auditing (Romania)



Background

In the last four years, since 2004, ARCE was entrusted by the Ministry of Economy to adopt and implement rules related to the authorisation of energy auditors for industrial audits and the attestation of energy managers for companies with consumption more 1,000 toe/year. The Romanian auditing system allows the development of energy services market and increases the energy efficiency measures that can be applied. In this way the monitoring of energy consumption (losses are being identified and are highlighted the energy measures for increasing energy efficiency) is assured. These audits are made annually or every second year, taking into account the level of energy consumption. Auditors are physic or legal persons authorized, with professional competency and experience in the energy efficiency field.

Results

Increase the numbers of energy audits in industry sector. A significant number of energy auditors and energy managers were authorised: 230 physic persons and 33 companies (legal persons) on energy audit activity and 277 energy managers. This contributes to increase the role of energy managers inside the companies on energy efficiency investment projects and implemented measures on energy efficiency at the energy end users. Based on the results of the energy audits the energy consumers establish their energy efficiency programs that conduct to energy savings.

As success factor we can consider the number of auditors on the market. As the audits and auditors number is higher, in the same way the number of energy efficiency improvement measures is higher.

Best Practice Renovation plan for electric appliances (Spain)



Background

In Spain, a cooperation scheme with regional governments was established by IDEA to apply for public funds to promote energy efficiency projects. This cooperation scheme entails voluntary agreements between public administrations so 19 agreements (one per region) were signed with IDEA. The stakeholders involved in the agreements are, on the one hand, the National Public Administration, which, through IDAE, provides to the Autonomous Communities the necessary budget to carry out measures of energy efficiency, and, on the other one hand, the Autonomous Communities that manage the funds received through IDAE. The regions co-managed the 70% of the budget and IDAE chooses the measures, which the regions are going to implement. The remainder 30% of the total budget is spent through IDAE on multi-regional projects.

Results

The Renovation plan for electrical appliances is an example project to promote energy efficiency. The aim of the programme is to reduce electric power consumption in the household sector by replacing fridges, freezers, washing machines, dishwashers and ovens with equipment labelled class A or higher. The calls for these plans have been done on an annual basis since 2006. In the two first calls, as many as 1,400,000 electric appliances were replaced, out of which 50% were washing machines, 36% fridges, 11% dishwashers and the remaining 3%, freezers.

The programme is considered to be successful since, after its application in the two first calls (2006 & 2007), it can be stated that the offer for more efficient equipment on the market has become generalised, the citizen knows better the electric appliance energy labelling system and takes the equipment energy consumption among the features into account when making purchase decisions.



Best Practice Residential Data Frameworks (UK)

Background

The Homes Energy Efficiency Database (HEED) has been developed by the Energy Saving Trust on behalf of UK Governments to register the uptake of sustainable energy measures and related survey data throughout the UK housing stock. The database captures and integrates data at individual property address level from a wide range of sources including energy suppliers, industry bodies and government programmes. This allows national, regional and local analyses of measure uptake, remaining potential and energy/carbon savings to be made and acted upon.

To support the UK's implementation of the Energy Services Directive, a Residential Data Frameworks pilot programme is being undertaken. This will pilot HEED as the UK's data repository for household energy policy and programme monitoring, targeting and evaluation. The pilot will incorporate meter point level annual gas and electricity consumption data from the periods 2004-2007 together with data from Energy Performance Certificates as well as the wider data within HEED. The first stage of the pilot will provide enhanced consumption profile analyses by attributes such as property type, age of construction and consumer segmentation. Subsequent stages will examine areas such as the efficacy of measures and impacts of behavioural change and smart metering.

Results

The pilot is ongoing with the consumption data having only just been made available for analysis and the initial results will be available during March 2009. However, this is a first step as there are a wide range of data and other analyses that Government and the other actors in the sustainable energy sector require. The support received by the Energy Saving Trust from the Department for Energy and Climate Change (DECC) as well as the energy suppliers has been crucial in enabling this activity to proceed.

To date, HEED has grown to provide data on over 8 million UK homes, over 30% of the housing stock and has facilitated the monitoring of performance and has improved activity targeting for residential energy efficiency programmes. HEED also provides the Scottish Government with a central repository of residential Energy Performance Certificates and will therefore provide a means to help evaluate EPBD as well as ESD.



Best Practice Stakeholders process to developing Monitoring (Austria)

Background

The energy agency AEA used a stakeholder's process to develop a monitoring system for the ESD energy savings. The stakeholder process was a well-designed process, with clear rules on how to participate and the influence of the results of participation on decisions made, known by the participants before the participation starts. AEA prepared a proposal for bottom up methods to be used in Austria to monitor the energy savings. This proposal was discussed in a course of three one-day workshops involving all stakeholders and five thematic discussion groups, involving only up to eight experts. The stakeholders determined the topics and the participants involved in the thematic discussion groups.

Also, a database is being developed to be filled with energy savings

measures by stakeholders concerned by the ESD and providing information on the savings achieved by each stakeholder and Austria as whole in order to meet the overall ESD-target.

Results

The proposal for bottom up methods was adjusted according to the results of workshops and discussion groups. Also new methods were included and default values have been changed after accurate check by the AEA. The results of every workshop and discussion group have been made transparent by putting the minutes for download on the monitoring website.

In the database is still in a test stage and it will be seen if the database is used by the stakeholders.







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