



**CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE**

**1st Plenary Meeting CA EED
Summary of Proceedings**

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1 Opening Plenary Session

In the course of the first Plenary Meeting of the Concerted Action for the Energy Efficiency Directive (CA EED) in Sofia over 130 experts, policy makers and implementers gathered together to discuss issues related to the implementation of the Energy Efficiency Directive (EED) in European Union Member States. The Plenary Meeting was designed to give EU Member States and Norway the opportunity to exchange experiences and learn from each other.

DG ENER and EASME gave an overview of news and updates on current activities.

Following on, each Domain coordinator gave an overview and introduction into their expert areas and Working Groups presented their results.

- Domain 1: Energy efficiency schemes and measures
- Domain 2: Public buildings and purchasing, long term renovation strategy
- Domain 3: Metering and billing, demand response and grid efficiency
- Domain 4: Energy services, audits, ESCOs and certification
- Domain 5: High efficiency CHP and heating/cooling
- Domain 6: Finance, information and training

2 Parallel Sessions

The Parallel Sessions of the 1st Plenary Meeting covered the following topics: Energy Efficiency modelling – the role in Energy Efficiency Directive (EED) implementation, New renovation strategies and solutions to de-risk investment, What are Member States currently doing for article 14? and Consumer Feedback through ICT.

2.1 Energy Efficiency modelling – the role in Energy Efficiency Directive (EED) implementation?

The session was planned and targeted mainly at policy makers and EED implementers. The aim was to explore the role of energy modelling in the context of EED implementation and to get participants into dialogue with each other to share information and discuss energy efficiency (EE) modelling and its role, possible challenges, opportunities and future activities in the field of EE modelling.

As expected, the vast majority of the participants were policy makers or EED implementers. Two participants considered themselves to be modelling experts and four participants were from other areas of expertise / organisations (statistics, evaluator, EASME, DG ENER). Over half of participated policy makers or EED implementers also had a connection to modelling.

Participant expectations covered a wide range of issues that could be summarised at the high level as, the need to better understand modelling tools and their purposes for use in other MS. In addition, modellers were looking to better understand the needs of policy makers.

Participants discussed possible challenges and opportunities around the working relationship between different parties in the context of modelling. Among several challenges, the following were highlighted: data availability and quality, resources and competence, lack of models or complex relationship with different models, cooperation and coordination between different parties as well as how policy makers might influence modelling results. Correspondingly some opportunities which were highlighted were: to get more evidence based data, to improve cooperation between parties, to improve coordination between different policies, to get good investment / policy decisions and to rationalise debates. The individual actors involved in modelling and the working relationships between modelling experts, policy makers and other stakeholders varied somewhat from country to country. In some countries there were no regular exchanges at all, in some countries some 'ad hoc' groups are established while in others, there are systematic steering or other groups which meet several times.

Participants were also asked to identify issues that work well in the context of modelling. Most important seems to be continuous communication between modelling experts and end-users, clear roles and involving all parties from the beginning. Long term commitment and resources is also seen a success factor and is also seen important to keep the expertise and to maintain the model over time. Increasing cooperation between different parties can also help in some cases with data availability.

The Sustainable Energy Authority of Ireland presented how in Ireland they have already worked to fulfil input to the coming NECPs as well as other reporting requirements and national purposes. They have linked existing modelling tools to get consistent assumptions with a national energy modelling framework that is flexible and responsive to key policy questions, propositions and trade-offs.

In the presentation from the Sustainable Energy Development Agency in Bulgaria participants got a concrete case example of bilateral sharing experiences between MS in the field of modelling.

2.2 New renovation strategies and solutions to de-risk investment

The session started with a brief overview of survey results, in which representatives from each of the member states were asked to comment on their states Long Term Building Renovation (LTBR) Strategy. The survey asked about the extent to which the LTBR strategy had changed since 2014, to identify good practice and the main stakeholders involved in the development of the strategy.

Following this, participants were asked to take part in two exercises:

- Identify what were the main barriers to building renovation strategy;

- Identify the three most important aspects of a successful building renovation strategy and give examples of practical applications of these.

The main barriers identified were lack of finance, long payback times for retrofit, a need for better monitoring and data collection on the actual potential for and performance of renovation measures as well as uncertainty about the political commitment/will of future governments. Practical measures suggested for improving renovation included, setting interim as well as long term targets that run alongside action plans.

A selection of speakers gave presentations on successful renovation programmers:

Walloon region renovation strategy

A representative of the Walloon region presented the renovation project there as part of the region's target to reduce its GHG emission from 95% within 2050 (compared to 1990 level). The goal for 2050 in the residential sector is for all homes to be A rated ($\leq 85\text{KWh/m}^2$). 3 tools were identified to reach these objectives:

- the energy passport for buildings;
- the one-stop-shop for renovation advice and access;
- a building renovation roadmap.

Findings from programs involved in the strategy showed that energy efficiency subsidies can be an effective way to stimulate renovation. However, it was shown that it can be less effective for low income households, as these are less likely to have the means to pay for the rest of the capital costs of a renovation. Further details of the scheme can be found in the presentation which is linked to in Section 5.

Means to de-risk the EE investment: the EU initiatives & the Investor Confidence Project

As the lack of data and energy performance benchmark were identified as a barrier to EE investment, the EEFIG De-risking Project was presented by Ioannis Orfanos: since November 2016 this open source database has gathered more than 11,000 energy efficiency projects.

This database, which is far from complete or exhaustive, aims to gather financial data such as financial performance of retrofitting project, granted amount for renovation.

The French local initiatives for building renovation

Finally, a presentation was given on local building renovation initiatives in France. France has local initiatives to support energy efficiency renovation in the residential sector. To respond to the dwellings needs, the French energy agency has supported different initiatives at the local level including diagnosis, financing, technical support and/or performances monitoring. The French energy agency ADEME piloted in particular in 2014 the concept of local platforms for local energy renovation through call for tenders (target: 100 pilots). The first results show a variety of initiatives (status, funding sources, objectives, scope...) and various types of support:

The presentation focused on the Picardie Pass Rénovation initiative to substitute private banks that do not lend money to low income dwelling to fund energy renovation works by providing a packaged services offer including diagnosis, technical engineering, project management, pre-financing, assistance and energy savings monitoring 5 years after building works.

2.3 What are Member States currently doing for article 14?

Discussions about the results of the national comprehensive assessments showed that it has helped some countries to include new policies and measures in their National Energy Efficiency Action Plans (NEEAPs). Focus is moving from national to local level where proper tools and data are needed, supported by clear goals and targets from national policy level. Financial sustainability of district heating (DH) systems was recognised as one of the key challenges today for decarbonisation and competitive operation of existing and implementation of large investments in new DH systems.

The presented Dutch uniform calculation method for reporting on the sustainability of DH networks is in line with European guidelines and anticipates on the proposed revisions of the Renewable Energy Directive. Three developed indicators (CO₂ emissions per unit of delivered heat, primary fossil energy use per unit of delivered heat and share of renewable heat), based on the existing standards (EN 15316-4-5) and employing data sources that are either publically available or already annually gathered by the involved stakeholders, could be used as a basis for a calculating method for other European countries. The discussions proved that reporting is the first step for the

successful sustainable transition of DH systems so we can follow where we are and how we are progressing, whereas on the other side reliable information for consumers is very important for the necessary increase of awareness and acceptance of DH.

The presented final [progRESsHEAT](#) project results emphasise the necessity of the harmonised actions on EU, national and local policy level to enable the implementation of sustainable heating and cooling (H&C) solutions. Strategic H&C planning needs to become a core pillar of regional and local decarbonisation activities where beside detailed analysis of heating and cooling consumption patterns (mapping), clear political commitments and binding targets are crucial for the success of modern, efficient, reliable and renewable H&C alternatives. Acceptance of the change in H&C systems by the consumers is a key element and sustainability reporting can help getting their acceptance.



2.4 Consumer feedback through ICT

“Consumer feedback is not the same as billing information”, but the moment of billing is an important communication opportunity to think about energy consumption for many consumers.

The development of various kinds of smart metering has allowed the creation of new real-time feedback services, supporting the final consumer in a very useful way and with positives results in a very short time.

A recent Irish study on consumer feedback through ICT shows significant savings from In-Home Displays providing real-time data on energy consumption. Other research on apps as feedback tool shows that simplicity and usability are important. Consumer research in this case showed that 24% of respondents claim to have reduced their energy consumption.

Additional experiences in the Netherlands show that feedback via or related to the energy bill is most effective, if (initially) sent by regular postal mail. Use of email is often considered as spam and therefore relatively less effective.

Within the context of the EU-project Natconsumers, research into the most effective way of tailoring advice to consumers has been performed. Following a segmentation of consumers into attitudinal groups based on consumer values it is possible to create advice that is relevant, interesting and useful to each individual consumer. This method could be used for tailoring advice in applications based on ICT.

A global outlook on the rapid development of ICT tools for consumer feedback was given in the third session. It is clear that the market is evolving rapidly and there is an abundance of tools, but most of them are targeted at tech-savvy consumers. In the following SWOT-analysis of ICT tools for consumer feedback it was clear that the risk of excluding some consumer segments along with data privacy concerns are key issues related to the development of ICT tools for consumers. However, the identified strengths and opportunities were plentiful – such as possibilities for demand response, savings opportunities, direct feedback that can give incentives to behavioural change and possibilities for a market driven development.

The main conclusions of the session were:

- Scientific research in some cases have shown persistent savings of about 5% for natural gas and 2,2% for electricity;

- In the Netherlands, United Kingdom and Ireland, similar examples and research are in line with each other, the amount of savings achieved are the same;
- The commercial price of smart meter service (real time feedback) is still high for residential use, however in some MS it is possible this service is free of charge in case of subscription to a long contract with the energy supplier (usually 3 or 4 years);
- In Home Display are crucial for effective feedback, causes family interaction;
- Market for feedback systems is imperfect in the Netherlands: supply mostly for already engaged, not for 'novice' consumers.
- Billing information to consumers utilizing new technologies
- State of art (e.g. the rollout of smart meters) varies in MSs
- Importance is growing (due to digitalization, demand response, Internet of Things (IOT) ...)
- Different tools already available
- Not only energy savings, but also multiple benefits such as demand side management, comfort and integration with home alarm
- Communication is crucial - tailored messages for different consumers

ICT enables many possibilities for consumer feedback and the topic is likely to be more important in the future due to the need for demand side management for the integration of variable renewable energy production, therefore it is recommended that the CA EED revisits this topic.

3 Other Parallel Sessions

Other Parallel Session were organised to inform participants about developments on specific topics: Information on standardisation work for energy audits and ESCOs, Energy Efficiency and RES – working together, Energy efficiency and consumers – understanding (mutual) impacts; results from H2020-projects.

3.1 Information on standardisation work for energy audits and ESCOs

This session focused on showcasing expertise by CEN-CENELEC, Budapest University of Technology and Economics and the Investor Confidence Project (ICP).

The key message by Katerina Kokesova from CEN-CENELEC was to show how organized and professionally credible the EU and CENELEC coordinate common work across Europe and produce verified methodologies for commitments and obligations. For a new European standard to be developed, it takes an average of 2.5 years, and according to the best practice methodology in standards it only follows the decision by the CEN and CENELEC members. The Member States' need to manage their political activity also by strategy and operative activity these international processes. This is key to ensuring good quality for e.g. energy audits and effective, efficient and sustainable policy measures.

It is important mentioning the revision of the EN ISO 50001:2011 'Energy management systems - Requirements with guidance for usage. The real problem in this ISO system efficiency is the lack of external expertise and the lack of adequate audit quality. So there is a need to improve this standard and this improvement is very important for Art. 8. This is could be an important topic for future discussion.

Dr. Zoltán Magyar from the Budapest University of Technology and Economics spoke about the experiences of audits in Hungary, highlighting that while the EED standards are fully translated, the translation of EPBD standards in Hungary is completely missing. Very important is that key standards will be translated for every state language in the EU, so it would be useful to concentrate on this in the EU support program or obligations.

He pointed out the difference between energy certification and energy auditing. It is very important to understand this difference and to pay attention to the separate handling of these two things in the relevant policy measures.

The importance of clearing the criteria by verification was stressed and it was mentioned that this criterion should be based generally on the expected measurement data (and not benchmark).

He emphasized that reducing energy consumption or reducing energy costs often results in a different priority order of the offered action by energy audits.

The ICP presented by Quiterrie de Rivoyre is a project certification system adopted by the EU Committee as a best practice. The certificate is used to qualify for a preliminary assessment and certify projects as *Investor Ready Energy Efficiency*, so it can greatly help find favourable financing. The certification process is based on standards generally.

They deal both with market projects and with the pre-qualification of state policy measures. Using this technically and widely accepted system as a policy equipment, the politically independent certification scheme can be a useful solution for state loan programs. The projects or measures could be validated and certificated regardless of size range.

This voluntary market instrument is a real and important aid to the implementation of Member States' actions and one of the possible guarantees of the credibility and transparency expected from policy workers.

3.2 Energy Efficiency and RES – working together

Energy efficiency and renewable energy policies each have their own targets however utilizing synergies results in a far larger CO₂-emission reduction potential than the individual policies. This is strongly endorsed by a recent IRENA reports from IRENA and Fraunhofer Institute.

The session was well attended with over thirty participants and included a presentation by Hans-Paul Siderius from RVO/Delft Technical University on Energy Efficiency in a decarbonised electric power system and a presentation by Louise Vickery from the IEA on Energy Efficiency Renewable Policy Alignment - Coordinating Policy to Optimize Energy Savings. The two presentations set the scene for the discussion and input on possible areas of cooperation

between the Concerted Action for the Energy Efficiency Directive and the Concerted Action of the Renewables Directive where cooperation would be of value to both groups. Amongst these were:

- Integrated funding mechanisms for EE & RES
- Art 7 EE and RES
- Digitization

In addition, further input was provided on the following topics:

- Article 15 – energy storage
- Building renovation - Promoting the integration of small scale RES in building renovation
- Art 9 and 10 – interfaces between smart meters and flexible demand

3.3 Energy efficiency and consumers – understanding (mutual) impacts; results from H2020-projects

Energy efficiency has benefits that go much beyond cost and energy savings. During the session representatives of the research teams behind the projects COMBI, ODYSSEE-Mure and BriskEE shared their empirical insights on the multiple benefits of energy efficiency.

Johannes Thema presented the COMBI project, which aims to quantify the non-energy related benefits, namely effects on health and social welfare, ecosystems, use of natural resources, as well as on the macro-economy and the energy system. The project database is open-source and accessible via the COMBI online tool. The tool allows users to model the non-energy related impacts of energy-efficiency and make country and sector comparisons, for the purpose of policy recommendations.

Part of the COMBI project focuses on the co-benefits of energy efficiency investment on air pollution, public health and welfare. Nora Mzavanadze presented this aspect of the project and shared insights gained from modelling the impact of energy-efficiency improvements on cold weather mortality, asthma attributable to indoor dampness and levels of air pollution, as well as the monetary value of these improvements.

Wolfgang Eichhammer presented the Behavioural response to investment risks in energy efficiency (BriskEE) project, which addresses household decision-making to invest in energy efficiency. The project aims to support the design and evaluating of energy efficiency policy in the residential sector. Discount rates are key parameters in energy-economic models used by policy makers and where the focus of the presentation. During the session the issue of how to overcome non-monetary barriers was discussed and acknowledged as complex.

4 Presentations

A number of presentations provided participants with valuable insights into Member States' EED implementations as well as examples from EU projects and information from the European Commission.

Energy Efficiency modelling – the role in EED implementation?

[SEAI National Energy Modelling Framework](#) – Jim Sheer, Ireland

[The modelling cooperation case](#) – Tsvetomira Kulevska, Bulgaria

New renovation strategies and solutions to de-risk investment

[Walloon renovation strategy and residential grants](#) – Valérie Pevenage, Belgium

[De-risking energy efficiency finance](#) - Ioannis Orfanos, UK Department for BEIS

[Local building renovation initiative](#) – Catherine Guermont, France

What are Member States currently doing for article 14?

[Implementing Article 14](#) – Lyudmil Kostadinov, Svetlana Yordanova, Bulgaria

[Progress Heat case studies](#) - Richard Buchele, Energy Economics Group, TU Wien

[Reporting on the sustainability of district heating networks](#) – Mirjam Harmelink and Lex Bosselaar, Netherlands

[Reporting on the sustainability of district heating networks](#) - Mirjam Harmelink

Consumer feedback through ICT

[Consumer Feedback through ICT](#) – Albert Jordan, Ireland

[Intelligent energy feedback](#) - Caitlin Bent, Energy Saving Trust

[Real-time feedback to kick-start consumer interest](#) – Henk van Elburg, Netherlands

[ICT tools for Energy Efficiency](#) - Phillip Lewis, VaasaETT

Information on standardisation work for energy audits and ESCOs

[CEN and CENELEC Standardisation in the field of energy efficiency](#) - Katerina Kokesova, CEN-CENELEC

[Investor Ready Energy Efficiency](#) - Quitterie de Rivoyre, ICP

[EED implementation in Hungary](#) - Zoltán Magyar, Budapest University of Technology and Economics

Energy Efficiency and RES – working together

[Energy efficiency and renewable energy in a decarbonized electric power system](#) - Hans-Paul Siderius, RVO

[Energy Efficiency Renewable Policy Alignment](#) - Louise Vickery, IEA

Energy efficiency and consumers – understanding (mutual) impacts; results from H2020-projects

[Behavioural response to investment risks in energy efficiency \(BRISKEE\)](#) - Wolfgang Eichhammer, Fraunhofer

[COMBI project](#) - Johannes Thema, Wuppertal Institut

[COMBI Odyssee-MURE multiple benefits of EE](#) - Wolfgang Eichhammer, Fraunhofer

[COMBI health and social co-benefits](#) - Nora Mzavanadze, Manchester Urban Institute, University of Manchester

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