

Coordination Mechanisms in Energy Efficiency at EU Level: Analysis of Best Practices and Formulation of Policy Recommendations

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Abstract

The aim of the current paper is the analysis of the existing coordination mechanisms in the field of energy efficiency and the in-depth examination of the identified best practices at EU level so as to contribute to the confrontation of the potential barriers and to facilitate the effective fulfilment of the established energy efficiency targets. The analysis of the current coordination mechanisms and the best practices was performed within the framework of multEE project, which targets to strengthen the consistency and quality of energy efficiency policy planning and implementation through innovative monitoring & verification schemes as well as through the improved coordination between the different administrative levels.

The mapping and analysis of the existing coordination mechanisms was carried out through the establishment of a structured methodological approach including the development of a questionnaire and the participation of key stakeholders from different States. Totally, 29 States were examined (28 Member States in EU and the FYR of Macedonia) analysing essential aspects of their coordination mechanisms. Moreover, a methodological approach was developed for the identification and the analysis of the best practices in order to facilitate the formulation of specific policy recommendations.

The major policy recommendations, which are accompanied by the demonstration of specific best practices, include the systematic involvement of the local and regional authorities in the policy formulation process, the facilitation of formal policy coordination structures with the establishment of informal coordination fora or networks, the active engagement of stakeholders from academia, business or civil society into the policy formulation and implementation, the imposition of legal obligations with carefully designed financial support schemes and the development of specialised review mechanisms for the various adopted energy efficiency policies with the participation of different stakeholders in the evaluation procedure.

Keywords: Coordination mechanisms; Energy efficiency policies; Best practices; Policy recommendations, Stakeholders' involvement

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1. Introduction

The untapped potential in energy efficiency can be characterised as considerably high at EU level despite the promotion of energy efficiency measures and policies within the framework of the Energy Service Directive (ESD-2006/32/EC) and the Energy Efficiency Directive (EED-2012/27/EU). The developed energy efficiency plans at municipal and national level are often not sufficiently harmonised and pursue divergent goals, while the vertical integration of energy planning on the different governmental levels cannot be characterised by highly efficient in many Member States leading to the implementation of ineffective energy efficiency measures.

The improvement of the existing and the introduction on new coordination mechanisms is expected to be realised through the contribution of multEE project. Specifically, the aim of the multEE project "Facilitating Multi-level governance for Energy Efficiency", which is financed by Horizon 2020 program, is the improvement of the consistency and the quality of energy efficiency policy planning and implementation through the introduction of innovative monitoring and verification (M&V) schemes as well as through the establishment of improved coordination mechanisms among the different administrative levels. This specific goal can be achieved both with the introduction of innovative M&V schemes based on bottom-up data ensuring that the impact of energy efficiency measures will be correctly monitored and evaluated, while simultaneously the future energy efficiency planning will be facilitated and the vertical coordination between the different administrative levels will be benefited exploiting effectively the full potential of the integrated M&V schemes and improving the overall quality of energy efficiency planning.

The current paper aims at presenting the obtained results from the comparative analysis of the existing

coordination mechanisms in EU so as to provide valuable insights for the design of more effective and innovative coordination mechanisms. The analysis of the existing coordination mechanisms was performed in accordance with the requirements of the ESD and EED aiming at the identification of the States, which can be considered as best practices taking into consideration all the aspects, and the replication of the most effective elements from other States. Therefore, the objective of the current paper was the conduction of a holistic assessment of the existing coordination mechanisms in relation to the already implemented and designed energy efficiency policies and measures without focusing only on individual aspects as realised in the existing bibliography.

The second section describes the conducted methodological approach, while the main conclusions, as were derived by the mapping of the current status of the coordination mechanisms and the analysis of the identified best practices, are presented in the third and fourth sections correspondingly. Finally, the main conclusions and the concluded policy recommendations are summarised in the final section of the paper.

2. Methodological approach

The issue of multi-level coordination has been recognised as crucial for the fulfilment of the energy efficiency targets. Specific projects and studies have been conducted in order to examine the basic elements of the coordination mechanisms and to identify specific case studies as best practices [1-3]. Specifically, IEA identified trends and initiatives developments in multi-level governance for different geographical and political contexts through the evaluation and comparative analysis of specific case studies [1]. Moreover, a handbook for multilevel urban governance in Europe was prepared providing valuable insights for the various aspects of the coordination mechanisms [2]. Finally, COOPENERGY project identified examples of the collaboration of local and regional authorities so as to develop and deliver sustainable energy action plans and initiatives, while a guide to multi-level governance was published [3].

Nevertheless, none of them managed to carry out a comparative analysis of the existing coordination mechanisms within a holistic framework considering all the energy efficiency policies and measures at the different governmental levels.

The implemented methodological approach was based on the development of a specialised questionnaire giving the opportunity to map and analyse both of the existing coordination mechanisms and the identified best practices. It should be noted that the derived conclusions and the examined aspects of the multi-level

mechanisms from the existing projects and studies were taken into consideration during the development of the questionnaire.

The questionnaire could be completed either for each State totally in the case that homogeneous coordination mechanisms were introduced for the majority of the implemented energy efficiency measures and policies or for each coordination mechanism separately in the case that specific differences would be determined among them in order to depict and report them efficiently within a State.

The mapping and the analysis of the existing coordination mechanisms was conducted focusing on the allocation of the legal responsibilities, the involved parties and the coordination bodies, the procedures for the specification of the involved authorities' priorities and needs, the required financial and human resources, the foreseen redesign procedures, the provision of incentive for more active participation, the access to data and information and the development of skills and knowledge [4].

Two different versions of the questionnaire were developed (online and excel-based versions) in order to facilitate its completion for all the examined States.

The proposed data collection procedure comprised by two different stages. Firstly, the questionnaire was sent to specific key stakeholders, who are involved with the energy efficiency issues so as to be completed according to their existing status of knowledge for the EU 28 Member States plus FYR of Macedonia (totally 29 States).

Additionally, a bibliographical review was conducted in order to identify and record supplementary information for the examined States. It should be highlighted that potential stakeholders from the ministries, which have undertaken the planning and the implementation of the energy efficiency policies, were invited to participate into the survey providing the necessary information and completing the questionnaire [4].

The submitted National Energy Efficiency Plans to the EC [5] constituted the primary source for the mapping of the coordination mechanism, while additional sources were studied also including indicatively the Country Profiles and National Reports from the ODYSSEE-MURE project [6], the prepared Sustainable Energy Action Plans and other technical reports from EU studies and projects [4].

Figure 1 illustrates graphically the implemented methodological approach for the mapping of the existing coordination mechanisms.

All the required information for the analysis of the examined coordination mechanisms for each State was collected through a reporting template in order to

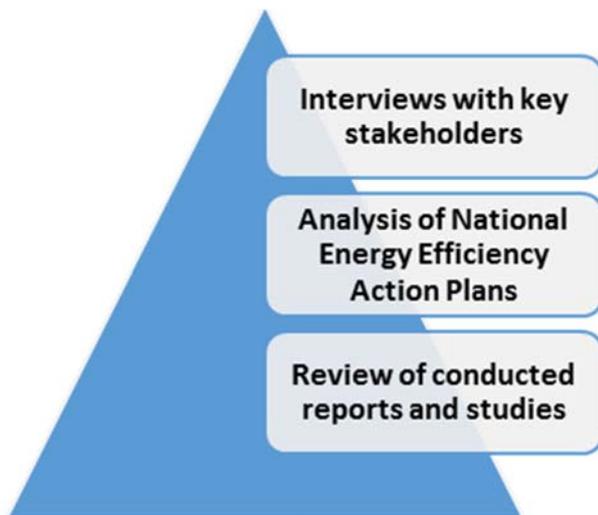


Figure 1. Implemented methodological approach

facilitate the elicitation of homogeneous outcomes. The completion of the reporting template led to the development of specific fact sheets for all the examined States highlighting the main identified aspects as were derived by the analysis of the examined coordination mechanisms [7].

Moreover, the identification of the States, which can be characterised as base practices, was based on the elaboration of the collected information by the completed questionnaires and the corresponding reporting templates regarding the design and the performance of the coordination mechanisms taking into consideration specific criteria.

Specifically, the criteria, which were utilised for the identification of the best practices, focused on the following aspects of the coordination mechanisms:

- **Criterion 1:** Existence of formal or informal coordination bodies between the national and the regional and local levels.
- **Criterion 2:** Active involvement of regional and local authorities into the national energy efficiency formulation.
- **Criterion 3:** Identification of the priorities and needs of the different involved regional and local authorities during the design of energy efficiency measures and policies.
- **Criterion 4:** Sufficient financial and human resources for the efficient planning and implementation of energy efficiency measures and policies.
- **Criterion 5:** Assessment of the energy efficiency measures and policies among the involved authorities in order to redesign them.

Each criterion was assessed qualitatively through a three-level qualitative Likert scale using a score equal to 3 for the case of effective compliance of each examined State with the objective of the criterion regarding the existing coordination mechanisms, 2 for the case of partial compliance and 1 for non-compliance.

Finally, all the performances for each criterion were added leading to the final rank, which was used for the comparative analysis of the examined States and for the identification of the best practices.

3. Mapping of the existing coordination mechanisms

The results of the mapping of the existing coordination mechanism, which were derived by the conduction of the respective methodological approach, are presented in Figure 2 [7].

The comparative analysis of the examined States confirmed that the legal responsibility considering the design and implementation of energy efficiency measures and policies has been undertaken by the national level and in limited cases by the regional and local level.

In the majority of the examined States, more than one ministry is involved in the formulation of energy efficiency measures and policies, while in less than the half of the examined States the legal competence for the design and implementation of energy efficiency measures and policies lies on only one ministry.

The responsibilities for the design and the realization of the energy efficiency measures and policies are usually clearly defined between different governmental layers, while the establishment of formal or informal coordination bodies for the formulation and the implementation of the energy efficiency measures and policies among the different level for energy policy have been constitutes a popular initiative.

Furthermore, there is the tendency to involve and consult systematically and actively the local and regional authorities during the national energy efficiency policy formulation.

Generally, the priorities and needs of the different involved authorities are taken into consideration during the design of the energy efficiency measures and policies in the majority of the examined States, while specific organized actions and adopted regulations can foster essentially the active engagement of the regional and local authorities into the formulation and implementation of the energy efficiency measures and policies.

To this direction, indicative initiatives for the motivation of the involved regional and local authorities can be

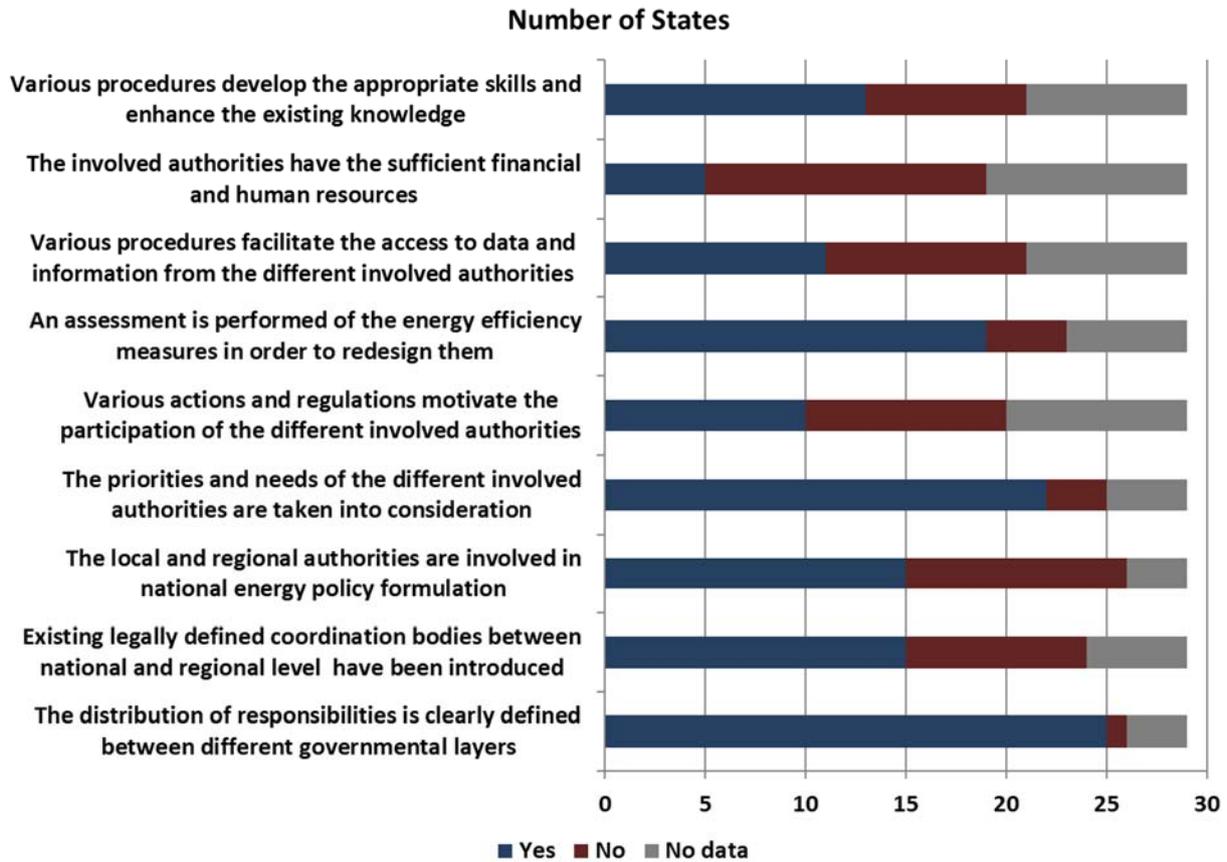


Figure 2. Results considering the evaluation of the existing coordination mechanisms

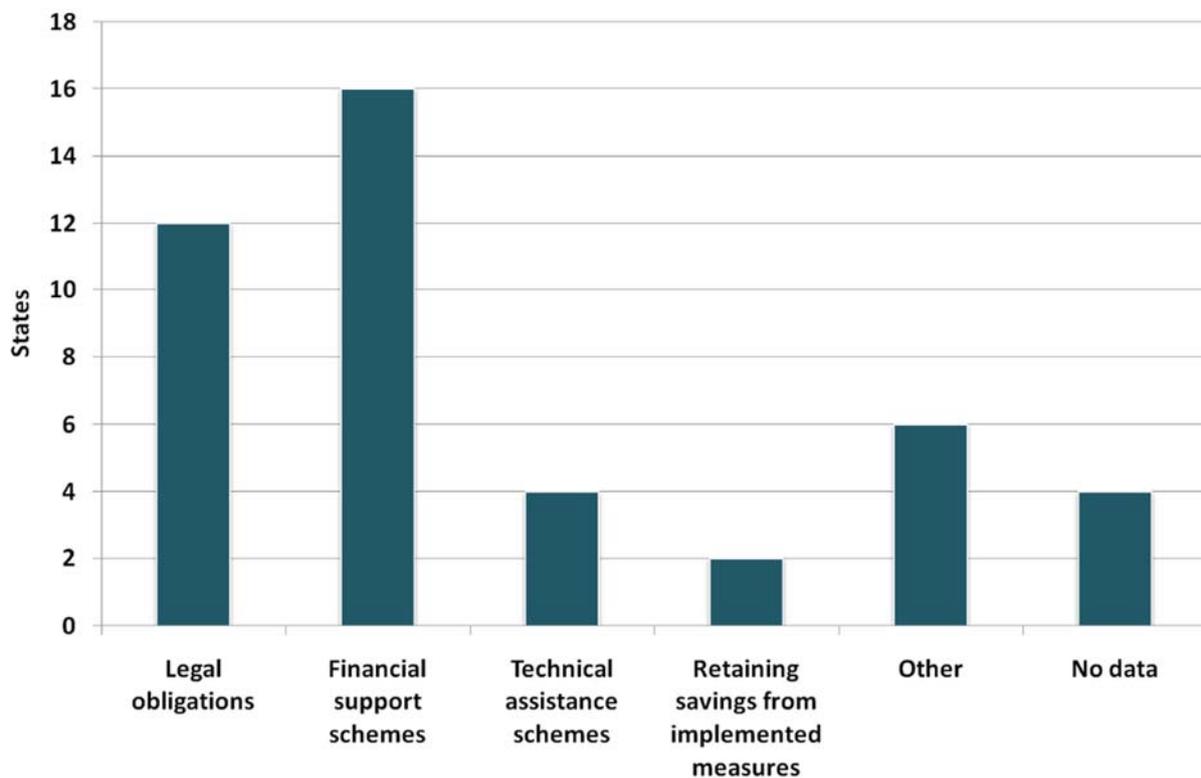


Figure 3. Mechanisms for the promotion of energy efficiency measures and policies

include the establishment of specialised working groups, the organization of public consultations and the development of regional and local energy plans.

The involved authorities especially on the local level seem to lack sufficient financial and human resources for planning and implementing the required energy efficiency measures and policies. Nevertheless, specific procedures for the development of appropriate skills and for the enhancement of the existing knowledge of the different involved authorities during the planning and implementation phase of the energy efficiency measures can be realised, such as the conduction of specialised workshops and training activities.

The regular assessment of the energy efficiency measures among the involved authorities in order to redesign them is crucial, while it can be achieved effectively through the compilation and submission of the annual reports for the evaluation of the progress on the achievement of energy saving targets within the framework of the EED.

Moreover, specific procedures for the facilitation of the access to data and information from the different involved authorities during the planning and implementation phase of the energy efficiency measures and policies have been implemented. These procedures comprise the constitution of technical working groups and mechanisms for exchanging the necessary information, the signature of memorandums of understanding between the regional and local authorities and the development of specialised template so as to facilitate the collection of data within the framework of the developed action energy plans and the submitted reports.

Finally, the adoption of legal obligations and the development of specific financial support schemes constitute the most common instruments for the incentivisation of the local and regional authorities in order to promote the required energy efficiency measures and policies according to the results of the Figure 3.

Furthermore, the promotion of cooperative projects within the Sustainable Energy Action Plans and energy saving initiatives, which are financed indicatively by the ERDF and the White Certificates Schemes, can be assessed as alternative mechanism for the design and implementation of energy efficiency measures and policies.

4. Best practices of the existing coordination mechanisms

According to the developed methodological approach, the collected information from the mapping and analysis of the existing coordination mechanisms was utilised for

the identification of the States, which can be characterised as best practices, taking into account specific criteria. The calculated performances for the examined States considering the existing coordination mechanisms are presented in Table 1 [8].

It should be noted that the main target of the ranking was the most efficient selection of the best practices in order to conduct a more in-depth analysis of the existing coordination mechanisms in the specific States.

Moreover, the analysed States were classified into best practices and good practices utilizing a certain threshold to the estimated total rank. Specifically, the States that were assessed with a score higher than 13 (highlighted with blue colour) can be considered as best practices, while the remaining States as good practices (highlighted with grey colour).

After the identification of the States that can be characterised as best practices, an in-depth evaluation of the various aspects of the existing coordination mechanisms was implemented so as to conclude to specific policy recommendations. The objective of this analysis is the elicited policy recommendations to be taken into account either during the improvement of the existing coordination mechanisms or during the establishment of new coordination mechanisms [8].

Table 2 depicts the identified aspects from the analysis of the best practices, which are replicable.

5. Conclusions

Generally, a kind of exchange between national and regional and to a lesser degree local level during the design and implementation of energy efficiency policies and measures was recorded, while significant variations were observed among the examined States considering the intensity, the grade of formalisation and the inclusiveness of the coordination process. Therefore, the analysis of the best practices can provide valuable insights emphasizing both on the horizontal and vertical dimensions of the coordination mechanisms and on the crucial aspects and procedures during the planning and implementation energy efficiency measures and policies.

The current analysis of the various aspects led to the acquisition of specific policy recommendations, which can improve the existing and facilitate the design on new coordination mechanisms. These policy recommendations include:

- The systematic involvement of the local and regional authorities in the formulation of energy efficiency measures and policies exploiting their expertise and knowledge.

Table 1: Performance of the examined States considering the coordination mechanisms

Country	Criterion1	Criterion 2	Criterion 3	Criterion 4	Criterion 5	Score
Austria	2	2	2	1	1	8
Belgium	3	1	1	1	1	7
Bulgaria	1	3	3	1	3	11
Croatia	3	3	3	1	3	13
Cyprus	1	3	1	1	3	9
Czech	1	1	1	1	1	5
Denmark	1	1	3	1	1	7
Estonia	1	1	3	1	1	7
Finland	1	3	3	1	1	9
France	3	3	3	1	3	13
FYROM	3	1	3	1	3	11
Germany	3	3	3	3	3	15
Greece	1	1	3	1	3	9
Hungary	3	1	3	1	3	11
Ireland	3	3	3	1	1	11
Italy	3	3	3	3	3	15
Latvia	3	3	3	1	3	13
Lithuania	3	1	3	3	3	13
Luxembourg	1	1	1	1	1	5
Malta	1	1	3	1	1	7
Netherlands	3	1	3	3	3	13
Poland	1	1	1	1	3	7
Portugal	1	3	3	1	3	11
Romania	1	3	3	1	3	11
Slovakia	3	3	3	1	3	13
Slovenia	3	3	1	1	3	11
Spain	3	3	3	1	3	13
Sweden	1	3	3	1	1	9
UK	3	1	3	3	3	13

Table 2: Identified aspects of the best practices

Country	Element	Brief description
France	Coordination bodies	CNEN
France	Coordination bodies	Nationwide network of local energy advice centers called Espace Info Energie or EIE
France	Coordination bodies	Strategic Committee with the participation of the Environment and Energy Ministry and national associations of municipalities, departments and regions (AMF, ARF, ADF)
France	Coordination bodies	Coordination Committee from national associations (of Local Energy Agencies, Environmental NGOs, etc.)
France	Coordination bodies	CNTE
Italy	Coordination bodies	Conferenza Stato Regioni

Country	Element	Brief description
Slovakia	Coordination bodies	Permanent Interministerial Commission for the Preparation of Energy Efficiency Action Plans (NEEAP WG)
Latvia	Coordination bodies	Regional energy agencies (Riga Energy Agency, Zemgale Regional Energy Agency (Zemgales reģionālā enerģētikas aģentūra, ZREA) and LALRG
Croatia	Involvement of regional and local authorities	National INFO WEB site and preparation of three-year energy efficiency plans from local authorities
Slovakia	Involvement of regional and local authorities	Permanent Interministerial Commission for the Preparation of Energy Efficiency Action Plans (NEEAP WG)
Croatia	Involvement of regional and local authorities	Role of the regional energy agencies and the regional development agencies
Germany	Involvement of regional and local authorities	Role of Bundesrat, associations of local level representatives and the annual working group of the responsible government officials of federal and federal state level (Bund-Länder-Arbeitskreis Energieeffizienz)
Germany	Other coordination fora and networks	Inter-ministerial working group (Interministerielle Arbeitsgruppe, IMA)
Germany	Other coordination fora and networks	Informal coordination mechanisms and platforms in combination with research institutes
Germany	Other coordination fora and networks	Stakeholder consultations and stakeholder debates with the participation of industry, NGOs, consumer associations and representatives of civil society
Latvia	Other coordination fora and networks	Ministry of Economics' Advisory Boards
Slovakia	Other coordination fora and energy networks	SIEA as a member of the platform supporting municipalities in activities related to Covenant of Mayors, while specific workshops are organized to this targeted audience
UK	Other coordination fora and energy networks	Role of universities and Higher Education Funding Council for England (HEFCE)
Croatia	Legal and economic instruments	Provision of financial incentives such as the Eco fund
Slovakia	Legal and economic instruments	Provision of financial incentives from EU investment and structural funds as well as through provision of information and guidance (conferences, consultancy of SIEA to municipalities)
Lithuania	Legal and economic instruments	Provision of financial incentives from State budget, ES Structural and Cohesion Funds and local EE Funds
France	Legal and economic instruments	Subsidies schemes targeting, among others, local authorities, and the energy efficiency obligation scheme
Latvia	Legal and economic instruments	Provision of financial incentives from available EU Funds, and national budget Green Investment schemes
France	Capacity building	Hired shared energy experts
France	Capacity building	Some initiatives of cities network are also implemented in cooperation with the French energy agency ADEME
France	Capacity building	Resources centers by the ADEME regarding local energy and climate plans, GHG assessment, Cit'ergie® process or the "ClimatPratic" tool
Germany	Policies redesign and access on data and information	Authorities interact to safeguard access to data and information informally and on ad hoc basis

Country	Element	Brief description
Latvia	Policies redesign and access on data and information	Re-design of the measures' content in order to increase their effectiveness within EU Funds 2007-2013 programming period
Latvia	Policies redesign and access on data and information	The Regional Energy Agencies provide information relevant for energy efficient renovation of multi-apartment buildings

- The enhancement of the energy efficiency policy coordination through the establishment of formal channels without neglecting informal fora or networks.
- The engagement of other stakeholders from academia, economy or civil society into energy efficiency policy formulation and implementation.
- The adoption of legal obligations for the promotion of local and regional support schemes with carefully designed financial support schemes.
- The introduction of a review mechanism for the different adopted energy efficiency policies with the participation of different stakeholders.

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