

# SECOND NATIONAL ROUNDTABLE ON FINANCE FOR ENERGY EFFICIENCY IN GREECE



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## EXECUTIVE SUMMARY

The European Commission, in cooperation with the Greek Ministry of Environment and Energy and the United Nations Environment Program (UNEP FI), organized a 2nd National Round Table on Financing Energy Efficiency in Greece on 07 March 2019. The event was attended by experts from Greece and European Institutions specializing in the financing of energy efficiency projects in various sectors of the economy. Representatives of the Government, municipal and regional authorities, the financial sector, various construction companies, as well as the general energy renovation supply chain, were among the participants.

The 2nd Round Table is a follow-up to the 1st roundtable held in Athens on 25 October 2018. The aim of the 2nd Round Table Discussion was to continue the dialogue among the key stakeholders in Greece on how to improve access to the financing of energy efficiency investments and to identify common objectives and possible improvements to be made both in the existing legislative framework and in the current business practices. The sessions focused on the creation of the first integrated One-Stop-Shop (OSS) for residential renovations in Greece, the financing of projects for energy renovation of public buildings and street lighting and the de-risking of energy efficiency investments in commercial buildings, focusing on the investors' point of view.

The 1<sup>st</sup> Roundtable resulted in the following five proposed key actions:

1. **Establishment and initiation of two OSS pilots:** One local government based, and one based on supporting island projects (possibly combined with a market-based approach involving the supply side). Advisory Groups should be set up, representing all stakeholders. Funding options for the pilots should be evaluated. Specification of needs and steps in relation to training, certification and standardization should follow (possibly as part of pilots and beyond).
2. **Awareness campaigns** targeting all stakeholders, including banks, combined with knowledge obtained from pilot setups and existing operating OSSs.
3. Energy managers should be appointed at regional level, in order to **record reliable data** to determine the potential for energy savings and appropriate savings measures.
4. Public buildings: **aggregation and prioritization of energy efficiency projects** emerged as most important steps.
5. **Encouraging the recording, in existing and developing databases,** of financial and technical characteristics of integrated projects, and of voluntary schemes for the certification of procedures for the execution of energy efficiency projects, as quality assurance mechanisms and risk mitigation measures.

The outputs from the three topic groups can be summarized as:

### **Topic group session 1: The establishment of the first One-Stop-Shop (OSS) for Home Renovation Services in Greece**

- Storytelling about the benefits of energy upgrading and renovation in buildings must be the primary service provided by an OSS. The aim is to inform the households concerned of the benefits of energy efficiency using plain, understandable language. Emphasis should be placed on global interventions and not just on "easy" renovations with a very short payback period.
- An OSS service should take account of local regulations to ensure the smooth operation and success of the action. A possible structure could consist of a central coordinating service that oversees the operation of a discrete OSS at municipal level. Conversely, a central OSS structure would be more appropriate for RES applications.
- Two different models were proposed for an OSS service. The first will focus mainly on informing and providing information on available energy upgrading options for buildings, with emphasis on particularities (islands, mountainous areas where there are many constraints) and a second coordination model that will lead to integrated energy savings interventions.
- Basic elements of designing an OSS are: to ensure the involvement of technical associations and sectoral operators, to ensure impartiality, transparency and credibility. In order to set up such a mechanism, it is very important to have a pilot application with all stakeholders involved to test it in real conditions, This will allow assessing the difficulties and the benefits, and further gaining experience for wider application and strengthening confidence and cooperation between stakeholders.

### **Topic group session 2: Financing Energy renovation of public buildings and public street lighting projects**

- Mechanisms for data recording should be set up at the regional level, to determine the potential for energy savings and to identify appropriate saving measures.
- There is a clear need for reliable data recording and comprehensive studies. Detailed documentation of the current situation is essential to monitor saving measures properly.
- Compatibility between the various public sector funding schemes is needed, particularly in municipal buildings (to overcome technical and legal problems).
- Public building: The lack of data on the energy efficiency of buildings is mainly since many are leased and belong to individuals. Clustering and prioritization of energy financing projects are top priorities.
- To save energy, education, change of habits and a change of attitude are essential.
- To facilitate aggregation of municipal building projects there is a need to strengthen the co-operation between regions and municipalities.

### **Topic group session 3: De-risking energy efficiency investments in commercial buildings - investors' point of view**

- There is still some incapability of appraisers to objectively record value and marketability of real estate in relation to the benefits deriving from energy efficiency measures, despite of available evidence. This is either due to a lack of a proper sample of comparative data or due to the absence of a standard valuation process. However, pioneers in the Greek real estate market have recognized the added value of these features in their properties, and relevant upgrades and certifications is key in their development strategy.
- Concerning the promotion of energy performance contracts, the following was recognized:
  - ✓ Involvement of insurance institutions, which could insure the declared energy savings, would significantly facilitate financing by banking institutions without the need for further collateral.
  - ✓ Standardizing project evaluation procedures and risk mitigation measures are of high importance.
- At a European level, the problem of financing energy efficiency projects has been recognized and important steps are being taken to facilitate these processes. Useful tools in this direction are both the existence of databases of financial and technical characteristics of integrated projects, as well as the existence of voluntary certification schemes for energy efficiency projects that can act as quality assurance and risk mitigation mechanisms.

For further details and background information please refer to the sections below.

## BACKGROUND TO THE EVENT

Under the "Smart Finance for Smart Buildings" initiative, the European Commission is organizing a series of "Sustainable Energy Investment Forums" to strengthen public-private partnerships to develop large-scale investment programs and funding schemes. Information about previous and upcoming SEI Forums is available on the SEI Forums website.

An initial regional conference on Financing Energy Efficiency in Greece and Cyprus took place in Athens on May 31, 2018. This event attracted 183 participants from the energy efficiency and finance sector, government agencies, as well as contractors, responsible for renovation projects and representatives of local authority.

A 1st National roundtable was held in Athens on 25 October 2018. The event was attended by 87 experts from Greece and European Institutions involved in the financing of energy efficiency projects. Representatives of the central government as well as local authority, financial sector actors, contractors and representatives of property owners participated in the discussion.

The aim of the discussion was to strengthen dialogue between stakeholders in Greece in order to facilitate access to finance for energy efficiency investments. Furthermore, possible improvements to the current political and business framework were discussed. During the discussion, emphasis was placed on renovations of energy renovation of dwellings as well as on the reduction of the investment risk of energy efficiency investments and energy renovation of public buildings. The 2nd Roundtable was the continuation of the discussion at the 1st Roundtable. At both roundtable discussions, considerable time was devoted to dialogue and interaction between participants for all views to be heard and to ignite the formation through discussion of specific proposals for the next steps that need to be taken.

## INTRODUCTORY PLENARY

### Introductory Remarks

#### **Michalis Verriopoulos, Secretary General of Energy, Ministry of Environment and Energy**

According to Mr. Verriopoulos, the Ministry's main goal is to enhance new strategies of promoting energy efficiency and savings projects based on the 3 key quantitative goals of the National & European policy by 2030 (reference year: 2005). A reduction of 16% in greenhouse gas emissions, a 31-32% contribution of RES to the national energy mix and a 33% benefit through energy saving are foreseen. To achieve the 40,000 houses / year renovation target, the current framework needs to be exceeded. The aim is to implement open programs, which will be standardized by 2030, targeting the public sector, small and medium-sized enterprises and individuals. However, these will remain unexploited unless they are linked to market-based measures, such as enforcement regimes - the measure has already covered the four-year target in its two years of operation. As announced by the General Secretary, the regulatory framework on the auctioning of emission allowances for high energy efficiency units is currently under development, while the general objective remains to provide comfort and heating for all citizens.

#### **Panagiotis Korkolis, Secretary General of Public Investments, Ministry of Economy and Development**

Mr. Korkolis stressed that funding remains problematic. EKO (SAT, Save At Home) II will be launched shortly, along with 2 actions to boost energy efficiency projects in enterprises (EPANEK), up to the amount of € 0.5 billion. The EIB is expected to finalize the first batch of mature energy-saving projects, like the Philodemos program, in March. The aim of this body is to commit more resources to energy efficiency projects to renovate the building stock by 2030, with open programs and the implementation of social criteria for the grant.

#### **Charalampos Syropoulos, Management Organisation Unit of Development Programmes S. A.**

According to Mr. Syropoulos, the specialization of the resources that will be allocated for energy savings has been completed and calls have already been published for interventions in public buildings, hospitals, educational institutions, local authorities and sports facilities. An overview of the ERDF allocation to regions (available: € 167.5 million) with 5 calls for projects has been reviewed.

Mr. Syropoulos pointed out that a variety of interventions are being funded even beyond the typical shell or window frames of the building, such as small cogeneration units. A special call for electric vehicles and bikes will be also announced shortly. In addition, he pointed out that costs related to advisory services and technical studies are covered. The response of stakeholders has been positive so far, as in the case of hospitals, where the cost of the requested funding is € 84 million.

#### **Dimitris Athanasiou, DG ENERGY, European Commission**

Mr. Athanasiou presented the main directions in which action is needed to improve the pace of energy renovation in Greece, one of which is the creation of one-stop-shop (OSS) services in the field of building renovation. He stressed that the maturity of the projects is still low and that more

effort is needed to reduce the investment risk. He also referred to the practical problems that need to be addressed, such as the development of a common language among project designers and financial institutions. It was noted that after a decade of low investment in energy efficiency, there was a renewed interest from 2014 onwards. Mr. Athanasiou then presented the EED and EPBD Directives related to energy efficiency and specifically analysed the correlation of the EPBD with the need to renovate the old building stock, especially for Greece.

### Presentation

#### **Giorgos Kampourakis, Director, Hellenic Bank Association**

Mr. Kambourakis presented the Bank's views on the overall availability of funding for the energy renovation of the building stock, which agreed with the analysis of the representatives of the national agencies. Within 2018, loans of € 45 million were given for investments in energy efficiency, but needs are multiple of today's market size. The absence of a tangible end-product makes it difficult to attract smallholders, but with the rise of AirBnB, the interest in small-scale renovations is gradually increasing. There was a need to provide money for the energy renovation of buildings to investment security view, thus emphasizing the importance of reducing investment risk.

#### **Giorgos Stasinou, President, Technical Chamber of Greece**

Mr. Stasinou pointed out the need for financial incentives in the field of savings, such as the possibility of deducting a part of the tax expenditures in order to reduce tax evasion and accelerate investments that are likely to be delayed. Other needs mentioned by Mr Stasinou during the discussion are the reduction of value added tax and the reduction of the required bureaucratic procedures. A serious problem is the lack of co-operation between operators and the lack of incentives in the form of tax exemptions or acceleration of depreciation for individuals and small and medium-sized enterprises, which can act as indirect financing tailored to the needs of the individual owner.

## TOPIC GROUP SESSION 1:

### THE ESTABLISHMENT OF THE FIRST ONE-STOP-SHOP (OSS) FOR HOME RENOVATIONS SERVICES IN GREECE

**Moderator: Christos Tourkolias, Energy Expert, Centre for Renewable Energy Sources and Saving (CRES)**

#### Findings from the JRC report "One-Stop-Shops for Energy Renovations of Buildings"

**Christos Tourkolias, Energy Expert, Centre for Renewable Energy Sources and Saving (CRES)**

Mr Tourkolias presented the most important points and conclusions drawn from the JRC study on the implementation of one-stop services in several EU countries. This introductory presentation served as a guide to the subsequent debate, highlighting the current experience and challenges remaining, as recorded by similar efforts on improving the energy efficiency of the building stock. The JRC review has resulted in five (5) basic OSS types based on their structure and the main involved stakeholder (industry, local authority, ESCO, etc.). The survey showed that the main interest was the renovation of housing, while fewer initiatives were targeted at public sector buildings. The degree of involvement of OSS at various stages of the renovation process has been found to vary from simple information services on available technologies to services that can even undertake bank negotiations. Cases from France were mentioned as examples, in which the OSS takes over the implementation of the interventions and participates with own funds. In addition, it was reported that other OSS services in North Europe involve energy providers offering integrated energy services. Most services include energy audits before and after the energy renovation certification procedures. Finally, regarding the legal status of OSS, it was reported that a new legal entity is usually created to implement the service.

[Presentation](#)

#### Experiences from the INNOVATE project – Setting up one-stop-shops in several EU member states, including Aradippou, Cyprus

**Panagiotis Michael, National Technical University of Athens (NTUA)**

Mr. Michael presented the experience gained during the implementation of a "one stop" service (OSS) to improve the energy efficiency of houses in the Aradippou Municipality in Cyprus. This service was implemented in the framework of the European project Innovate and aimed at improving the Municipality's general building stock built between 1980-2000.

Mr. Michael presented the two main types of OSS, namely the information model and the coordination model, pointing out that the second one has a major impact on the promotion of renovations and was thus also chosen in Innovate. Regarding the structure of the OSS, three

levels were chosen to carry out the interventions, focusing on minimizing public costs and ensuring the functioning of the free market through transparent procedures. As was analysed, the program is not binding on the number of companies that will take on the interventions. The primary role of the Municipality is to provide advice, guidance and coordination with financial institutions and construction companies, without directly involving complex internal procedures that govern the operation of, for example, a bank. Concerning the latter point, the threshold of service reaches up to meetings between owners and financial institutions.

The service also supports industry bidding procedures. In general, the chains formed during the implementation of the interventions include the actions coordinated by the one-stop shop (contacts with financial institutions and companies, mapping of energy renovation actions, support of citizens in implementation, recording of projects, etc.) the actions coordinated by the bank (mainly financing approval), as well as actions controlled by the Chamber of Commerce (project proposal, implementation of interventions, energy audit, etc.). The service provides energy audits before and after the interventions, and a link to Building Renovation Passports is foreseen. Another future objective of the program is to implement interest rate subsidy measures to reduce or even eliminate them. Finally, regarding the project site, the small size of the population of the Municipality allows for the use of the City Hall for direct communication with the citizens.

[Presentation](#)

## My path towards an energy efficient home

### **Alice Corovessi, Institute of Zero Energy Buildings (InZEB)**

Alice Corovessi presented the possibility of step-by-step renovation as a solution to the lack of funding, as well as the correlation with the building renovation passports and the relevant EU directives. According to the results of the iBRoad program, there are possibilities for defining a set of interventions for each building that can be implemented over a longer time horizon and specified for each building. Especially in the case of linking a service with building renovation passports, useful experience could be included in the program. iBRoad focused on private renovation passports for single-family houses, with renovations being realized on a 15-20-year horizon.

Overall, this tool could be a continuation of the energy performance certificate. In addition, the project has discussed the possibility to make a link with financial instruments that exist in some countries but were not used (example of Bulgaria).

[Presentation](#)

## Background

The 1st Roundtable, focused on how to support homeowners at all stages of energy renovation (such as identification of the energy efficiency measures, selecting construction companies, supervision of the works, structuring the financing plan, etc.) based on the idea that an integrated service (one-stop-shop) can simplify to a large extent the renovation process and thus increase renovation rates. Examples were presented from the PadovaFIT project and the Latvian Baltic Energy Efficiency Facility (LABEEF).

The main outputs from the topic group session at the 1st roundtable can be summarized as:

- There is a need to promote the one-stop-shop concept covering all the needed steps for implementing Energy Efficiency measures.
- Facilitators need to be engaged in identifying, recruiting and assisting project implementation. Facilitators must have the necessary technical qualifications, as well as communication skills for convincing consumers to take part in the energy renovation programs.
- Stakeholders need to assist in the simplification and standardization of procedures, developing databases or platforms with document templates for energy efficiency contracts, business plans, legal forms, key efficiency indicators and other relevant information. One-stop-shop solutions could also provide technical, financial and legal support for a series of issues related to renovation of the building stock.
- Peculiarities, for instance the difficulties arising in implementing projects in regions such as the Greek islands, as well as the existence of numerous unauthorized constructions, were also mentioned, as intrinsic issues of the Greek real estate market.
- There is a clear need to assess the potential role of ESCOs in the residential market.

The 2nd Roundtable Discussion focused on how the establishment of a one-stop-shop (OSS) in Greece may support homeowners for the energy renovation of their buildings. Specifically, the idea of an OSS service is particularly relevant for the residential sector and especially for the initiation of pilot projects in order to provide guidance for the implementation of necessary measures covering various issues such as the conduction of the foreseen measurement, monitoring, and verification methods, the compilation of business plans, the preparation and publication of standardised documents and templates and the provision of technical assistance for various emerging legal and financing problems. Moreover, public awareness could also be improved through the development of specialized databases with energy efficiency products and interventions, which will be introduced by owners and companies through certified and standardized procedures. Finally, the appointment of facilitators, who will have both the appropriate technical background and communication skills, is imperative for the effective operation of the one-stop-shop service.

On this topic group session, the working group has harnessed the knowledge gathered from the previous roundtable in order to:

- Particularize the provided services for all the required steps from an OSS for the realization of energy savings (such as assessment, guidance, financing, implementation, quality assurance, verification).
- Analyze the available types of OSSs (such as industry driven, consultant driven, ESCO driven, local government driven and cooperative driven) focusing on the peculiarities of the Greek energy sector.
- Identify the potentially involved entities or actors focusing on the main roles and responsibilities.
- Propose indicative financing instruments to ensure the sustainability of an OSS.

### Key questions

- 1.1. What should be the key provided services and the expected benefits from the Operation of an OSS in Greece?
- 1.2. What is the most effective type of an OSS in Greece?
- 1.3. Which entities or actors should be involved in an OSS?
- 1.4. Which roles and responsibilities should be appointed to the involved entities or actors?
- 1.5. How can be ensured the financial sustainability of an OSS? Which instrument will be the most suitable for an OSS?
- 1.6. Are there potential synergies of an OSS with other policy measures such as energy efficiency obligation scheme or energy communities?

### Conclusions

- The necessity to establish an OSS in Greece was recognized unanimously. However, the identified best practices at EU level should be adapted to the national context of the energy sector.
- An OSS should provide technical assistance to the citizens and should operate as an intermediate actor for resolving potential problems and barriers in cooperation with the respective administrative authorities.
- Storytelling should be the primary service of an OSS. Specifically, an OSS should inform the interested households about various non-energy benefits in addition to the achieved energy savings using plain and understandable language. The OSS should focus on the promotion of integrated interventions, instead of “easy”, fast payback renovations.
- The provided services should also include the conduction of trainings, the determination of technical specifications, the provision of certifications to the involved installers, the development of specialized tools for the economic assessment of the potential energy

efficiency interventions focused on the payback period, the provision of information for the available technologies, the quality guarantee for all provided services, the implementation of the required measurement and verification procedures and the specialization of the energy efficiency interventions in accordance with the actual needs of each household separately through energy audits or the utilization of specialized tools.

- The design of an OSS should at least be performed at regional or local level and not at national level. One possible design can be the establishment of a central OSS under the administration of a prefecture, which will supervise the operation of a separate OSS established by the involved local municipalities within the prefecture.
- Two different structures of an OSS were proposed. The first alternative can focus solely on the provision of information about the potential energy efficiency interventions to the interested households. The second alternative can focus on the coordination and implementation of all the required steps for the realization of the energy efficiency interventions. European experience has shown that the second alternative can lead to a higher increase in energy renovation rates and more benefits for the citizens.
- The second alternative can be operated either through the involvement of a prefecture and the local municipalities or the Obligated Parties within the framework of the Energy Efficiency Obligation Scheme. The involvement of the local authorities will facilitate the implementation of the energy efficiency actions due to the creation of trust, while the Obligated Parties will focus on approaching their best customers in order to persuade them for the implementation of energy efficiency interventions and to fulfil the imposed energy savings target simultaneously.
- The potential involvement of ESCOs and banking institutions is not assessed as viable, judging from the experience gained in Cyprus, while the various citizens' associations can have indisputably an important role into the establishment of an OSS. Nevertheless, ESCOs can support technically the actors that will undertake the administration of the OSS such as the local municipalities and the Obligated Parties.
- The following aspects should be taken into consideration during the design of an OSS:
  - ✓ The involvement of the technical associations is imperative.
  - ✓ The transparency and reliability of the OSS should be ensured indicatively through the certification of the involved installers, the compilation and publication of the lists with the selected installers and contractors including the criteria for the selection and the verification of the achieved energy savings.
  - ✓ The distortion of the competition in the respective markets must be avoided.
  - ✓ The acquired experience from the Energy Savings at Home Program should be considered as it acts as an informal OSS. One alternative can be the potential expansion of the existing platform to operate as an OSS generally for the promotion of energy efficiency on residential sector.
- The synergies with the energy communities are not obvious since the primary objective of the energy communities will be on the installation of photovoltaic parks.

- The payment of the provided services by an OSS must be undertaken by the interested households through a market-based mechanism.
- A pilot establishment of an OSS with the involvement of all the crucial actors is essential to both assess precisely the importance and effectiveness of an OSS in Greece and to create the fundamental conditions of confidence and trust among all involved stakeholders.
- According to the results of the iBRoad program, a set of interventions for each building can be implemented over a longer time and specified for each building. Especially in the case of linking a service with building renovation passports, useful experience could be included in the program.

## TOPIC GROUP SESSION 2:

### FINANCING ENERGY RENOVATION OF PUBLIC BUILDINGS AND PUBLIC STREET LIGHTING PROJECTS

**Moderator: Vlasios Oikonomou, Senior Expert, Institute for European Energy and Climate Policy**

[Presentation](#)

#### Use of Financing schemes in the PRODESA Project

**Eva Athanassakou, EUDITI, Stelios Psomas, ENFINITY**

Ms. Athanassakou presented the project PRODESA (funded by the European Union's Horizon 2020) concerning supporting the financing of energy efficiency projects in 116 public buildings in 7 Municipalities of Attica as well as street lighting projects through project development assistance. She highlighted the necessary conditions to implement the projects through energy performance contracting. She further stressed the need to study the funding schemes and the resources available during the execution of the project in order to make the best grouping of projects (aggregation). Aggregation is important as it generates scale economies, improves payback periods for projects, reduces procedural costs, facilitates access to finance, and at the same time reduces the project execution time. Subsequently, local and national targets on climate change are faster achieved, while having a faster inflow of revenue.

[Presentation](#)

#### Basic requirements and specifications for EPC tender material

**Argyro Giakoumi, Centre for Renewable Energy Sources and Saving (CRES)**

Ms. Yakoumi presented the basic requirements that an Energy Performance Contract should meet for public sector buildings, as well as the obligations of the contractor and the public entity. She stressed the need for a clear approach to measure and verify energy savings. Energy auditing is required to assess energy savings and determine the respective obligations of the contractual partners. The duration of the project must be fixed at a level enabling the savings resulting from the interventions within the contracting period to equal or exceed the sum of payments to the contractor (including any loan instalments) and all other operating costs.

[Presentation](#)

#### Financing of street lighting projects in Greece.

**Leonidas Vergos, Sirecled AE**

Mr. Vergos represents the Sirecled SA, the company that opened the street lighting market with a first project in the Municipality of Dionysos. Mr Vergos stressed the importance of looking at the

credibility of such investments. The logic of the company is to provide the bank with high quality (bankable) products, enabling savings to be achieved from the beginning of the project. He then gave some examples of funding. He stressed the importance of changing conventional lighting in all municipalities and the importance of correctly recording the situation. A major problem with the EPC is that the contractor is required to sign the contract without knowing how it will be evaluated. For proper financial proposals, the municipality should be responsible to record its energy consumption. He also stressed the importance of education on energy-saving issues and the need to change habits and culture in terms of energy consumption.

### Presentation

## Background

The first Roundtable investigated how to increase the renovation rates for public buildings, which is often limited by the capacity of public building owners to identify and implement energy efficiency projects. Energy performance contracting could be part of the solution, but the market still needs to be developed and better structured in Greece.

In principle, energy efficiency investments in public buildings share many of the benefits of commercial buildings (size, energy intensity, concentrated ownership, professionalized facilities managers) but face additional challenges of more cumbersome procurement procedures, potential split incentives between different divisions responsible for procurement and for the energy bills, balance sheet restrictions and limitations under public accounting rules.

In the 2<sup>nd</sup> roundtable PRODESA project (funded by the European Union Horizon 2020 program) was presented. It includes project development assistance in relation to financing of energy efficiency projects in 116 public buildings and street lighting (aggregation of projects from 7 municipalities). The project will highlight the requirements that should be included in the procurement documents to implement these projects through Energy Performance Contracting.

Furthermore, experiences on the main steps of the Energy efficiency Contracting was shared from companies that are active in public-private partnership in public buildings and street lighting, alongside with the importance of asset valuation, the requirements from Regional and Local authorities and the supportive instruments from the governmental level.

The conclusions from the previous roundtable that was taken as a basis for the 2<sup>nd</sup> Roundtable were:

- Municipalities need to be motivated around standardization procedures, one-stop-shop facilities and project aggregation, ideally integrating energy renovation actions in regional and municipal strategic plans.
- Particularly in relation to EPCs, the need for standardization and standard templates was emphasized. This would also include standard procedures and standard catalogues for key measures (with key figures). Banks called for simplified procedures and standards to make energy efficiency projects more understandable and manageable by banks.
- EPCs can be a main vehicle to implement energy efficiency measures in public buildings, but they would need to be based on strict requirements (codes) from the public building

owners (in relation to guarantees, payback times etc.) and public procurement tenders should include requirements for high energy efficiency standards and overcoming barriers.

- Energy Managers must be appointed to each public building to assist in identifying saving opportunities and measures and monitor and verify energy consumption and savings.
- Energy renovation projects are hindered by lack of energy data on buildings. This is mostly because many are leased and owned by private individuals.
- Special provisions need to apply for public buildings which are regarded as cultural heritage.

Based on that, the roundtable focused on providing recommendations and concrete actions in relation to the key questions below:

### **Key Questions**

- 2.1. For most energy efficiency renovations of old buildings, there is a need for a public grant for leveraging private funding through energy performance contracting. What are the restrictions set by the public bodies inhibiting this mix of funds and what are the specific requirements for enabling such mix?
- 2.2. How could the regions support the aggregation of energy efficiency projects across municipalities (especially for small municipalities)?
- 2.3. Sound bankable energy efficiency improvement options must be based on reliable energy consumption data. What actions are needed for the municipalities and regions to ensure such availability?
- 2.4. In order to develop pipelines of bankable energy efficiency projects, the budget should be realistic and estimated with market prices and asset valuations. How could this be adopted by the public bodies?
- 2.5. Which requirements and specifications are needed for EPC tender material and aggregated projects?
- 2.6. What is needed to upscale the market for energy performance contracting, including legislative support and assets valuation. How can regions and municipalities facilitate the adoption of the EPC concept?
- 2.7. Which kind of procedures and standardisation measures are needed to facilitate financing of energy efficiency projects?

### **Conclusions**

- Certification of technical data on energy consumption of public buildings is important for gaining confidence when entering an EPC.

- EPCs for street lighting should last for up to 7 years and it is important to have a first financier (before investing) to initiate the study and the licensing process. Also, the monitoring system should be relevant to the type of interventions.
- Before entering the EPC, it is important to consider state aid opportunities.
- The static adequacy of public buildings is important (since the extent of the intervention will be determined from minor to radical renovation). In an EPC, there could be a condition for a static post-operation problem that would allow the contract to be terminated - the responsibility will burden the municipalities if the problem existed before the intervention.
- Accounting standards - should also be applied to public buildings. The basic principle of real estate valuation is very important.
- Availability of funds is important for ESCO projects, such as for example a guarantee fund for timely payment of obligations.
- Studies need to be thoroughly documented (e.g. street lighting) when drafting an EPC. For street lighting projects a detailed light bulb recording (both functioning and broken) is needed to enable a fully calculation of the savings.
- An element to be included in public-sector dialogue is fair value (which is different from market value). Essentially it will be what appears in the books (if kept in the public accounting plan and valued). It is essential to increase value of properties after upgrades when leasing or renting (as upgrading increases the rental price of real estate).
- Banks need collateral, and therefore EPCs with a long repayment period will often not be profitable. Banks also have applications where elements (like KPIs) and energy data can be inserted to ensure some sort of initial recording. For public buildings, bank financing in the case of EPCs will go to the owners of the buildings rather than to the tenants, and in order to overcome this split incentive, banks on some cases require both parties to contribute.
- EPCs should also consider the social benefit of public buildings (as an added value, depending on the type of use of the building).
- Aggregation problem – An existing problem is the different ownership of buildings that makes it difficult to contract - certainly there could be an aggregation clause in the contracts. Also, the region can function as an aggregator of cross-municipal projects but only if it has its own financial instrument (e.g. Bank of the Peloponnese). Apart from grouping/aggregating, it is also important to prioritize projects at regional / municipal level.
- Large entities with large dispersion of buildings have property problems and investment is difficult. Any contract in homogeneous buildings must include maintenance obligations.
- It is also necessary to find the complementarity and compatibility of the various public funding, such as subsidies / WFP / NSRF / Infrastructure Funds and EPCs.
- To facilitate decisions on energy savings in public buildings, the promotion of non-energy benefits can help (e.g. health, building values, indoor comfort etc.).

## TOPIC GROUP SESSION 3:

### ENERGY EFFICIENCY INVESTMENTS IN COMMERCIAL BUILDINGS – CHALLENGES AND BARRIERS

**Moderator: Nikos Gkonis, Senior Energy Efficiency Expert, GIZ**

#### The outcomes of the RenoValue project

**Yiannis Daskalakis, Institute of Zero Energy Buildings (InZEB)**

Mr. Yannis Daskalakis presented the RenoValue program. This project has created a training tool kit for property valuation professionals on how to factor sustainability into the valuation process. The importance of the assessor's role throughout the life cycle of a property was emphasized, and therefore there is a need for ongoing training and active involvement of professionals in the evaluation of investments in energy efficiency.

[Presentation](#)

#### Integration of energy efficiency interventions into building renovations and their support from appropriate financial instruments

**Kostas Pavlou, Piraeus Bank**

Mr. Pavlou stressed through the review of Piraeus Bank's activity over the past decade, that there is a positive outlook for the development of investment in the building sector as we tend to reach the 2006 investment levels. In addition, an opportunity for new energy efficiency improvement projects building stock will be the PF4EE (Project Finance for Energy Efficiency) project, through which EUR 100 million will be earmarked for relevant projects. Also, the differences in project financing strategy (in terms of collateral requirements) were highlighted, depending on the size of the project, the ownership status and the type of interventions. A particularly important element for the easier financing of energy efficiency projects is the creation of a "white list" of energy interventions, which can be financed without the need for energy audits or other analytical calculations of potential savings.

[Presentation](#)

#### Standardization of the evaluation procedure of energy efficiency projects

**Charis Andreosatos, Centre of Renewable Energy Sources and Saving (CRESS)**

Mr. Haris Andreosatos presented a proposal to standardize the process of evaluating energy efficiency projects on the part of financial institutions in order to minimize the risk. This considers all stages of the project from the implementation to the operation and the recording of the

achieved savings. Several criteria were proposed for the qualitative assessment of both the project and the contractor, such as the existence of certification of consultants and installers.

### Presentation

## De risking energy efficiency financing: Current and future efforts

**Assoc. Prof. Haris Doukas, Management & Decision Support Systems Laboratory, School of Electrical and Computer Engineering, NTUA**

Mr. Doukas presented three European, current and future project standardization actions to reduce investment risk, namely the action of the EEFIG program, which also led to the development of the Underwriting Toolkit tool, the DEEP platform, but also the action of clustering and standardizing projects through the Investor Confidence Project (ICP). He further announced the launch of the European research project Triple A, in the same direction, and with the participation of NTUA and Piraeus Bank.

### Presentation

## Background

The topic group discussion focused initially on the key aim of this session, which is to determine the next steps in relation to the conclusions of the first Round Table of October 2018.

During the 1st roundtable, the discussion focused on how energy efficiency investments are viewed from different stakeholders' perspective and in this context whether energy efficiency investments can be deployed at the necessary scale and become a real case in the Greek market. Particularly focus was given to explore whether and how the common de-risking mechanisms of such investments can succeed in boosting energy efficiency through sustainable retrofits in commercial buildings and if the particularities of Greek real estate market can be faced adequately.

Under current market conditions energy efficiency investments are characterized by a certain level of risk due to their nature and are not sufficiently attractive for investors. The small size of such projects, the lack of standardization as well as the split incentive phenomenon are among the factors behind this situation. Banks often make loan agreements based on the credit status of their clients or the property value whereas the benefits arising from the energy efficiency improvements are often not considered.

The Public Conference in May 2018 included presentations giving an overview of the work carried out to standardize energy efficiency projects under the EEFIG de-risking products, the **Underwriting Toolkit** and **DEEP**. The group discussion at the first roundtable was stimulated by presentations from the Greek Sustainability Council and Joule assets on the **eQuad** platform.

The main outputs from the topic group session at the first roundtable can be summarized as follows:

- The further promotion of energy efficiency projects in the Greek real estate market needs to be strategically planned bearing in mind important factors such as the Greek market size, structure and particularities.
- Standardized methodologies need to be developed for assessing / calculating energy benefits and non-energy benefits, including the increase in property values, from the implementation of energy efficiency measures, in order to improve risk mitigation and decrease costs through standardization.
- The creation of a database is proposed, to enable project aggregation through benchmarking and standard key performance indicators, as well as standardized procedures and standard documents/protocols (possibly connected with EEFIG, DEEP).
- The creation of consortia between ESCOs and energy providers was mentioned as a potential solution to develop mediators who will facilitate the maturing of projects and attract investors

Building on that, the roundtable focused on providing recommendations and concrete actions in relation to the key questions below:

### **Key Questions**

- 3.1 Which initiatives are needed to promote energy efficiency projects in the Greek real estate market (defining the next steps). Who will be the actors, and which would be their role?
- 3.2. Which is the impact of energy efficiency and sustainability projects to the asset value? Is the real estate market aware of it and how can we measure it?
- 3.3. Who are the pioneers in the Greek market, << and which is the rationality behind their business models? What else can we expect from them?
- 3.4. Who can undertake the role of aggregator of small energy efficiency projects acting as intermediary between property owners, tenants and financial institutions? Which are the barriers and the challenges?
- 3.5. Can energy efficiency projects be the case for the Greek technical companies and developers?
- 3.6. How are energy efficiency investments perceived from the side of financial institutions? Can the evaluation procedure of such kind of projects be standardized?
- 3.7. De-risking energy efficiency projects: Which are the available approaches and what can we expect in the near future?
- 3.8. Market based instruments (EEOS and EE auctions) are already in place in the energy efficiency policy framework. Are these instruments adequate for fostering the energy efficiency market and who can be the players of this market (Energy providers, ESCOs, construction companies e.g.)?

## Conclusions

- The conclusions that emerged from the discussion were that despite the fact that there is evidence to link the sustainable and energy characteristics of properties to their value and marketability, there is still a weakness on the part of the appraisers to objectively record these features. This is either due to a lack of a sufficient sample of comparative data or due to the absence of a standard valuation process. However, pioneers in the Greek real estate market have recognized the added value of these features in their properties, and relevant upgrades and certifications is key in their development strategy.
- Regarding the promotion of energy efficiency measures, insurance institutions should be engaged to insure the declared energy savings. This would significantly facilitate the financing from banking institutions without the requirement of further collateral.
- The importance of standardizing project evaluation and risk mitigation procedures has been recognized, but the potential increase in management costs that such a process may entail was highlighted. A very important conclusion, in direct connection with the involvement of the insurance institutions mentioned above, was also the fact that so far the process of evaluating the financing of energy efficiency projects does not take into account the projected energy and operating cost savings from the implementation of the measures, but only the credit characteristics of the applicant.
- At European level, the problem of financing energy efficiency projects has been recognized and important steps are being taken to facilitate these processes. Useful tools in this direction are both the existence of databases of financial and technical characteristics of integrated projects, as well as the existence of voluntary certification schemes for energy efficiency projects that can act as quality assurance and risk mitigation mechanisms. Finally, the results of the European research project Triple A, where NTUA and Piraeus Bank participate are particularly useful in this direction.