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REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

SEACAP 4 SDG

Med SE(A)CAP integration through uniform adapted assessment and financing methods, mainly targeting buildings in education and health sectors, for sustainable development goals in a smart society

Reports on SEACAP SDG Living Labs - (Output 4.2)

EE Innovative Solutions Living Lab in Greece

Developed by

UNIVERSITY OF PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

This document/publication has been produced with the financial assistance of the European Union under the ENI CBC Mediterranean Sea Basin Programme. The contents of this document are the sole responsibility of University of Patras and MEDREC and can under no circumstances be regarded as reflecting the position of the European Union or the Programme management structures

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SEACAP 4 SDG

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1. Summary

The EE Innovative Solutions Living Lab in Greece, part of the SEACAP 4 SDG project, aims to bolster the capabilities of public building owners and managers in implementing energy-efficient practices. It's a collaborative platform that brings together a diverse range of stakeholders, including public building officials, decision-makers, research institutions, universities, technical chambers, innovative companies, and more. This diverse mix ensures a comprehensive approach to energy efficiency and sustainability.

Key objectives of this Living Lab encompass:

- Knowledge Transfer: The LL will facilitate the transfer of valuable knowledge, best practices, and tools from the SEACAP 4 SDG Toolkit, fostering a shared understanding of effective energy efficiency measures.
- Engagement and Exchange: Stakeholders will actively exchange experiences and concerns related to Energy Efficient Public Buildings, promoting open dialogue and peer-to-peer learning.
- Enhanced Cooperation: The LL seeks to establish robust interactions, improve transnational collaboration, and encourage deep networking among participants, enhancing the impact of energy efficiency initiatives in the region.

Participation in the LL offers stakeholders access to state-of-the-art knowledge and tools, opportunities for collaboration, networking, and a chance to contribute to sustainable energy practices. The Living Lab will be a catalyst for positive change in Greece's energy efficiency landscape, benefiting local communities and the broader region.

In the context of the SEACAP 4 SDG project, Greece hosted the EE Innovative Solutions Living Lab. This local Living Lab, abbreviated as LL, was conducted in two informative sessions. The inaugural session, titled "Computational Tools for Public Buildings Energy Efficiency Plans," took place on 1st of February 2023 in Aigio (Aigialeia), Greece, and aimed to elevate the skills of stakeholders involved in building-stock energy management and planning. The second session, themed "Developing Smart Communities for Youth: Sustainability, Innovation, and Transition to Sustainable Energy," took place on the 8th of June 2023, in Patras, Greece and delved into topics related to smart communities, sustainability, and the transitions towards sustainable energy practices.

2. Setting up the EE Innovative Solutions Living Lab in Greece

The creation of the EE Innovative Solutions Living Lab in Greece was an intricate undertaking marked by a series of meticulous steps and considerations. This Living Lab played a pivotal role in advancing sustainable energy solutions, necessitating thorough planning, collaboration, and adaptation to unique challenges.

Identification of Need and Objectives: The initiation of the EE Innovative Solutions Living Lab in Greece commenced with a discerning assessment of the imperative need for such an institution. Acknowledging the significance of promoting sustainable energy practices and innovations, stakeholders within the SEACAP 4 SDG project conceptualized this Living Lab. Its primary objective was to establish a dynamic platform wherein stakeholders could gain knowledge, foster collaboration, and catalyse innovations to address energy efficiency challenges.

Definition of Scope and Focus: With the objectives outlined, a paramount step was the precise delineation of the Living Lab's scope and focus areas. This pivotal task required extensive deliberations and consultations with experts, project partners, and local stakeholders. The decision was reached to structure the Living Lab into two sessions, each marked by distinct focal points. The first session aimed at capacity building in energy management and planning for public buildings, whereas the second session delved into topics related to smart communities, sustainability, and the transitions towards sustainable energy practices.

Collaborative Planning: Establishing the Living Lab was contingent on the close collaboration of multiple entities. The University of Patras, as a key partner in the SEACAP 4 SDG project, played a central role in orchestrating the planning and execution. Additionally, the Municipality of Aigialeia provided invaluable support, furnishing facilities and resources vital for the successful realization of the first session. This collaborative synergy was instrumental in ensuring a comprehensive and well-structured event.

Adaptation to Challenges: As with any ambitious project, challenges were encountered during the establishment of the EE Innovative Solutions Living Lab. The ongoing COVID-19 pandemic presented logistical hurdles, necessitating the incorporation of stringent safety measures and strict adherence to health guidelines. To address these challenges effectively,

a flexible approach was adopted, allowing for both online and physical sessions to accommodate diverse needs and regulatory constraints.

Promotion of Engagement and Knowledge Exchange: An integral facet of the Living Lab's formation was the cultivation of active engagement and robust knowledge exchange. To achieve this, the organizers proactively extended invitations to a diverse spectrum of stakeholders, including local decision-makers, policy architects, energy specialists, engineers, students, and experts from related projects. The objective was to foster a multidisciplinary environment conducive to the free exchange of ideas and experiences.

Continuous Enhancement: Throughout the journey of setting up the EE Innovative Solutions Living Lab, the planning team remained receptive to feedback and opportunities for enhancement. It was crucial to develop an environment wherein participants could contribute insights, offer suggestions, and provide recommendations to elevate future Living Labs, ensuring their sustained efficacy.

2.1 Connect and self-assessment

2.1.1 The coordinator of the EE Innovative Solutions Living Lab in Greece

The University of Patras is the coordinator of the Living lab in Greece and is a distinguished academic institution located in Patras, Greece. Committed to advancing research, education, and community engagement, the university has earned recognition for its contributions to various fields. Its diverse range of faculties, departments, and research centers underscores a commitment to multidisciplinary collaboration and academic excellence.

The University of Patras is engaged in multifaceted activities encompassing advanced research, educational programs spanning undergraduate to postgraduate levels, participation in national and international projects, and the development of sustainable solutions to address societal challenges.

The coordinator from the University of Patras plays a pivotal role in orchestrating the activities of the EE Innovative Solutions Living Lab in Greece as part of the SEACAP 4 SDG project. This role involves overall coordination, strategic planning, collaborative leadership, event execution, knowledge sharing, and fostering a culture of continuous improvement. They are instrumental in ensuring the Living Lab's success and adaptation to challenges, exemplified by their effective management during the COVID-19 pandemic.

2.1.2 EE Innovative Solutions Living Lab stakeholders

The process of identifying stakeholders for the EE Innovative Solutions Living Lab in Greece was meticulous and structured, primarily guided by the following steps:

Utilization of Existing Partnerships: We capitalized on established partnerships through the SEACAP 4 SDG project, thereby engaging stakeholders already connected to the initiative. The Municipality of Aigialeia, as an institutional decision-maker, played a pivotal role, considering its role as a beneficiary municipality of the support mechanism.

Participation in Local and Regional Events: Actively participating in local and regional workshops and events dedicated to energy efficiency, sustainability, and innovation was instrumental. These platforms allowed us to connect with stakeholders who shared a common interest in our Living Lab objectives.

Online Outreach: Leveraging online platforms, including project websites and social media, we disseminated information about the Living Lab, attracting stakeholders who were interested in our sustainability and energy efficiency focus.

Collaboration with Academic Institutions: To align with our emphasis on youth involvement, collaboration with local academic institutions was pursued. This collaboration allowed us to involve students, professors, and researchers as stakeholders.

In total, we reached out to approximately 30 stakeholders, encompassing various stakeholder types described in the LL Methodology. These included Institutional Decision Makers, Building/Energy Managers, Socio-economic Operators, End Users, and others.

Fulfilled List of Stakeholders: See Annex 1 for a detailed list of approached and/or participating stakeholders and Annex 6 for the registration list of the Living labs participants.

The engagement and composition of stakeholders for the EE Innovative Solutions Living Lab in Greece are diverse, representing a comprehensive cross-section of individuals and organizations committed to advancing sustainability, energy efficiency, and innovation. As we delve into the stakeholder typologies, it becomes evident how this diversity contributes to the richness of perspectives and expertise within our Living Lab.

Institutional Decision Makers (23%): A substantial segment of our stakeholders comprises institutional decision-makers, representing 21 individuals. These stakeholders wield the authority and influence needed to shape policies, allocate resources, and drive initiatives within their respective organizations and regions. Their active involvement signifies a strong commitment to sustainability and energy efficiency at the institutional level.

Building / Energy Managers (12%): Another integral component of our stakeholder community is the 11 building and energy managers who play a pivotal role in the practical implementation of energy efficiency measures. Their hands-on experience and insights into the challenges and opportunities of managing building energy systems contribute significantly to the Living Lab's objectives.

Socio-economic Operators (9%): Our stakeholders from socio-economic operator backgrounds, numbering 8, bring a unique perspective to the Living Lab. Their involvement underscores the intricate relationship between socio-economic factors and sustainable energy solutions, offering valuable insights into the broader societal impact of our initiatives.

Other (Students/Professors) (57%): The largest stakeholder group, constituting 53 participants, consists of students, professors, and researchers affiliated with the University of Patras and the University of Peloponnese. Their presence injects a significant academic dimension into the Living Lab. Their innovative ideas, research capabilities, and academic expertise greatly enrich our discussions and actions.

This diverse stakeholder composition aligns with our Living Lab's mission of fostering collaboration, knowledge sharing, and cross-disciplinary dialogue. The varied perspectives and expertise represented within our stakeholder community are essential in addressing the multifaceted challenges of sustainability, innovation, and energy efficiency, making our Living Lab a dynamic and vibrant platform for meaningful engagement.

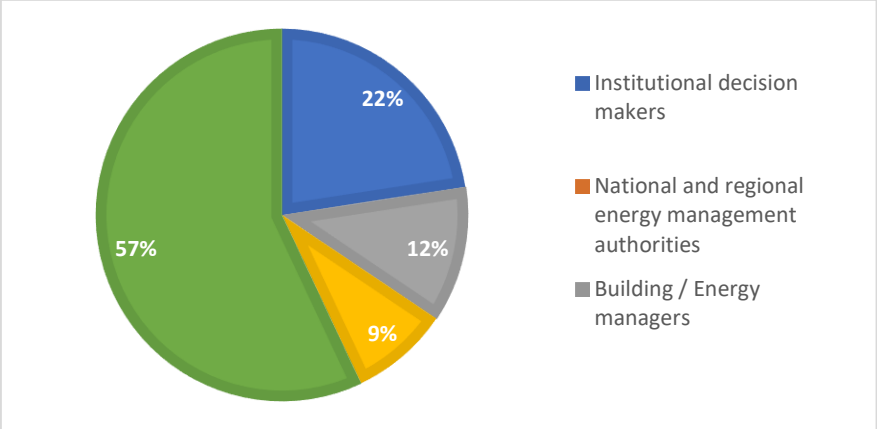

Figure 1 Stakeholders participating in LL per typology

2.1.3 The EE Innovative Solutions Living Lab in Greece scope

The establishment of the EE Innovative Solutions Living Lab in Greece was driven by a thorough assessment of pertinent challenges and needs within the local context. Identifying critical issues necessitated a comprehensive evaluation of the region's energy efficiency landscape and the broader objectives of the SEACAP 4 SDG project.

One of the primary issues recognized was the suboptimal energy performance of public buildings within the Municipality of Aigialeia. This concern resonated with the overarching goals of SEACAP 4 SDG, which aims to enhance energy efficiency in public infrastructure, mitigate climate change, and advance sustainable urban development. Energy inefficiency not only contributes to increased operational costs for public entities but also represents a significant environmental burden. Addressing this challenge aligns with the project's commitment to fostering sustainable, resilient communities.

Furthermore, the scope of the EE Innovative Solutions Living Lab extends beyond energy efficiency; it encompasses broader themes of sustainability, innovation, and the engagement of youth in sustainable energy transitions. These dimensions were identified as critical facets of holistic urban development. Promoting smart communities that engage with the challenges of sustainability and encourage innovative solutions is pivotal to achieving long-term resilience and progress.

Additionally, the involvement of local stakeholders, including decision-makers, policy developers, and engineers, underscores the need for capacity building and knowledge sharing. Establishing a Local Living Lab focused on these aspects creates a dynamic platform for learning, collaboration, and problem-solving. This engagement reflects the aspiration to empower local entities with the tools and expertise needed to drive meaningful change.

In conclusion, the scope of the EE Innovative Solutions Living Lab in Greece is intentionally comprehensive. It not only addresses pressing issues related to energy inefficiency but also embraces broader sustainability objectives and actively involves local stakeholders. By doing so, it contributes to the overarching mission of SEACAP 4 SDG to create sustainable, resilient communities and fosters a culture of innovation and sustainable energy transition among the youth, ensuring a brighter and more sustainable future for the region.

2.1.4 The EE Innovative Solutions Living Lab in Greece action plan

1. LL Objectives

The main aim of the EE Innovative Solutions Living Lab in Greece is to develop and implement innovative, sustainable, and energy-efficient solutions for public buildings within the Municipality of Aigialeia. The primary goals of the Living Lab are:

- To improve the energy performance of public buildings, reducing their environmental footprint and operational costs.
- To engage and empower local stakeholders, including decision-makers, policy developers, and engineers, in the process of identifying, implementing, and evaluating energy-efficient solutions.
- To foster a culture of sustainability and innovation within the community, with a particular focus on youth involvement.
- To create a replicable model for energy efficiency initiatives that can be applied to other municipalities and regions.

2. LL Activities

The EE Innovative Solutions Living Lab will undertake a series of activities to achieve its objectives, including:

- Conducting energy audits and assessments of select public buildings to identify energy-saving opportunities.
- Developing and implementing energy efficiency action plans for the selected buildings.
- Organizing training sessions, workshops, and knowledge-sharing events to build the capacity of local stakeholders.
- Facilitating collaboration among partners, stakeholders, and experts to explore innovative solutions.
- Monitoring and evaluating the outcomes of implemented energy efficiency measures.
- Engaging with youth and educational institutions to promote sustainability and innovation.
- Disseminating best practices and lessons learned to a wider audience.

3. Stakeholders' Role and Responsibilities

- LL Coordinator (University of Patras): The coordinator will lead LL activities, organize meetings, and oversee the overall implementation of the Living Lab. They will also facilitate communication among partners and stakeholders.
- Municipality of Aigialeia: The Municipality will provide access to public buildings for energy audits, support the development of energy efficiency action plans, and actively participate in training and capacity-building activities.
- MES Energy: MES Energy will contribute its expertise in energy efficiency and provide training on cutting-edge tools. They will also assist in the development of financial schemes for energy efficiency projects.
- Local Stakeholders: Decision-makers, policy developers, engineers, and the local community will actively engage in the Living Lab's activities, offering insights, participating in workshops, and supporting the implementation of energy efficiency measures.

4. Special Agreements

- Meetings will be held both in-person and online to accommodate various stakeholders' preferences and ensure inclusivity.
- Information shared within the group will be treated as confidential unless explicitly agreed otherwise.

- Partners will collaborate to secure funding for any associated costs, such as external experts or tools required for energy audits and assessments.

5. Cost Issues

Costs associated with LL activities will be primarily covered by the SEACAP 4 SDG project budget. However, partners may explore additional funding sources or sponsorships if needed for specific initiatives.

6. Profit Issues

No profits are expected to arise from the activities of the EE Innovative Solutions Living Lab. Any potential benefits will be reinvested to further the Lab's objectives and sustainability goals.

7. Risk Issues

Potential risks include delays in activities due to unforeseen circumstances, such as external restrictions or limited availability of resources. To mitigate such risks, the Living Lab will maintain flexibility in its approach, allowing for adjustments to timelines and activities as necessary. Additionally, backup plans will be developed to ensure the continuation of critical activities in case of disruptions.

2.2 Educate and plan

2.2.1 Educate/train stakeholders

In the context of the SEACAP 4 SDG project, Greece hosted the EE Innovative Solutions Living Lab. This local Living Lab, abbreviated as LL, was conducted in two informative sessions. The inaugural session, titled "Computational Tools for Public Buildings Energy Efficiency Plans," was followed by the second session, themed "Developing Smart Communities for Youth: Sustainability, Innovation, and Transition to Sustainable Energy."

The first session of the Local Living Lab- training seminar in Greece was organized by the University of Patras and the Municipality of Aigialeia aimed at capacity building and skills development in building-stock energy management and planning. It took place on February 1, 2023, at the Municipality's premises. The seminar primarily targeted departments relevant to building-stock energy management and planning, decision makers, policy makers, energy responsible individuals, and engineers of technical services.

Figure 2 Local LL in Greece 1st session

The training session was jointly conducted by a team of experts hailing from the University of Patras and the esteemed external entity, MES Energy. During this informative session, the University of Patras assumed the responsibility of introducing and elucidating the SEACAP 4 SDG project in its entirety. This encompassed a comprehensive overview of the project's objectives, methodologies, and the fundamental framework that underpinned the concept of Living Labs. Furthermore, the University of Patras provided valuable insights into the intricate

Living Labs framework, expounding upon the specific methodologies and processes integral to its successful implementation. This served as a foundational understanding upon which the subsequent training components were built.

Figure 3 Local LL in Greece 1st session

MES Energy participated as the key rapporteur in a training seminar organized by the University of Patras in collaboration with Municipality of Aigialeia. The training seminar covered various topics related to energy efficiency action plans and the utilization of cutting-edge tools for conducting reliable energy efficiency actions. The training seminar comprised several key sections:

1. **Introduction to SEACAP 4 SDG Toolkit:** The seminar began with an overview of the SEACAP 4 SDG toolkit, highlighting its essential computational tools designed for the development of energy plans for public buildings.
2. **Hands-on Training:** Participants received hands-on training in utilizing the computational tools. This involved practical sessions covering aspects such as manipulating building data, conducting energy analyses, and generating databases of key performance indicators (KPIs) for building stocks.
3. **Case studies:** Case studies were presented to illustrate how these computational tools can be effectively applied in real-world scenarios. These examples helped participants grasp the practical implications of the toolkit.

4. **Prioritizing Projects**: Training sessions included guidance on how to prioritize energy efficiency projects and develop a phased plan for upgrading energy systems gradually.
5. **Financial Planning:** Participants also received instruction on developing financial schemes for the implementation of energy efficiency projects, emphasizing the importance of securing funding for **sustainable actions.**
6. **Exploiting SEACAP 4 SDG Toolkit:** The training delved into how the SEACAP 4 SDG toolkit can be optimally utilized to create energy action plans like Sustainable Energy and Climate Action Plans (SECAP) and Local Building-Stock Energy-Efficiency Action Plan) (SEAK).

The **second session of the Local Living Lab** conducted in Greece as part of the SEACAP 4 SDG project was under the title of "Developing Smart Communities for Youth: Sustainability, Innovation, and Transition to Sustainable Energy." This initiative sought to create an environment conducive to exploration and discussion around these pivotal themes.

Taking place on the 8th of June 2023, the event was situated at the prominent "Agora Argyri," strategically located in the heart of Patras, Greece. This occasion was thoughtfully integrated into the broader context of the "GreenBuilding Open Day," project operating within the framework of the ENI CBC Med Programme, amplifying its significance and reach.

Figure 4 Local LL in Greece 2nd session

The primary objective of this Local Living Lab was to facilitate an informed discourse and exchange of ideas on topics related to smart communities, sustainability, innovation, and the transition to sustainable energy. It served as a platform for meaningful engagement with the

local community, stakeholders, and experts interested in sustainable energy action plans, energy upgrades, and related domains.

The event featured a comprehensive report presentation by Ms. Panagiota Saranti, offering valuable insights into the diverse activities and tangible outcomes achieved by the SEACAP 4 SDG project. This presentation was tailored to cater not only to the local citizenry but also to a broader audience of stakeholders with a keen interest in sustainable energy initiatives.

Recognizing the inherent value in cross-disciplinary collaboration, the organizers proactively extended invitations to representatives from related projects and experts specializing in Sustainable Energy Action Plans (SEAPs). Ms. Chrysoula Christia, delivered an illuminating presentation detailing the outcomes of the pilot study conducted in the Municipality of Aigialeia under the auspices of SEACAP 4 SDG. Her presentation provided practical insights into the transformation of a public building into a more environmentally friendly entity, drawing from real-world experiences.

Figure 5 Local LL in Greece 2nd session

The event served as an engaging forum where attendees from diverse backgrounds contributed their perspectives, initiatives, and ideas, fostering an environment of collaborative thinking and knowledge sharing. The session reached its conclusion with a focus on the innovative ideas presented by students, offering a glimpse into their vision for the development of Smart Cities, Infrastructure, and Transport.

See Annex 4 for the invitation and agenda of each event and Annex 5 for the certificate that was shared to the participants in the first session.

2.3 Implement

2.3.1 Process of implementing the IMPULSE tools and Methodologies

The tools selected as the most suitable for the beneficiary's needs (Municipality of Aigialeia) in the implementation of the SEACAP 4 SDG project are the IMPULSE tools and methodologies. The IMPULSE tool is a set of specialized tools developed in the framework of projects IMPULSE and IMPULSE PLUS Interreg MED 2014-2020.

The IMPULSE tools provide templates for recording energy-related data for all buildings and for grouping buildings into representative Typologies. They also include an MS Excel tool that automatically projects Key Performance Indicators (KPIs) from one Typology Ambassador building to all buildings of the same Typology. This accelerates the production of KPIs' database for the entire building stock. Additionally, there is a specialized MS Excel tool that provides the energy renovation plan for the selected buildings. This tool helps in the development of a gradual renovation plan by considering parameters such as primary energy savings, CO2 emissions avoidance, and initial investment cost.

The IMPULSE tools are recommended by the Greek Ministry for Energy and Environment for the conduction of Municipal building energy efficiency plans. They are embedded in the Ministry's webpage dedicated to local and regional plans for public-building energy efficiency. The IMPULSE tools play a crucial role in the implementation process by facilitating the estimation of existing buildings' energy performance, analyzing financial schemes, and developing a gradual renovation plan.

The chosen solution for the building stock renovation is a gradual renovation plan, which involves different levels of retrofitting: medium, major, and deep renovation. The implementation process involves the use of the IMPULSE tool, specifically the "KPIs-processor PLUGIN" tool, to prioritize and plan the renovation projects.

The first step is to input the KPIs (Key Performance Indicators) for the Ambassador buildings into the tool. These KPIs include parameters such as primary energy consumption, CO2 emissions, energy cost, initial investment cost, and payback period. Once the KPIs are inserted, the tool generates projected KPIs for each building based on the selected renovation level (medium, major, or deep). The projected KPIs include annual reduction of primary energy

consumption, annual CO2 emissions avoidance, annual reduction of energy cost, initial investment cost, and payback period. To develop a gradual renovation plan, the "KPIs-processor PLUGIN" tool is used again. The tool takes into account parameters such as primary energy savings, CO2 emissions avoidance, and initial investment cost, with different weights assigned to each parameter. These parameters are used in the objective function of the decision-making scheme to prioritize the renovation projects. The result of the gradual renovation plan is a prioritized list of renovation projects, considering the projected KPIs and the assigned weights to the parameters. This plan helps in determining the order in which the renovation projects should be implemented.

Name of Excel CITY/REGION File	D3.4.1_KPIs_compl.xlsx

Key Performance Indicators - Units	Weight factor
24. Total annual primary energy savings - kWh/yr	30
36. Total annual avoided CO2 emissions - kg/yr	10
22. Estimated Investment cost - National Currency	60
53. Simple Payback period - yr	0
54. Total investment cost per total annual energy saved - National	0

Other ponderable categories	Option	Weighting (± 30%)
Building Typology	PBT1	0%
Type of Retrofit	Deep retrofit	0%
RES	RES	0%

Only applies on 7, 8, 32, 33 and/or 34 KPIs.

Baseline year	0
Relative annual retrofitting area	5%
Total floor area (m^2)	17.557
Annual retrofitting area (m^2)	878

TARGETS check	
CO2 reduction (%)	0%
kWh reduction (%)	0%
RES share (%)	0%

Renovation scenarios	Combination
Minor	5%
Medium	20%
Major	50%
Deep	100%

LIMITS check	
Annual Investment	0 €

	Minor retrofit	Medium retrofit	Major retrofit	Deep retrofit
PBT1	✗	✓	✓	✓
PBT2	✗	✓	✓	✓
PBT3	✗	✓	✓	✓
PBT4	✗	✓	✓	✓

Figure 6 Input parameters in the decision-making scheme of the «KPIs-processor PLUGIN» tool towards the development of a gradual energy renovation plan.

2.4 Improve and Evaluate

2.4.1 Generation of potential improvements of LL in Greece

The process of generating potential improvements for the SEACAP 4 SDG Living Lab (LL) in Greece was a collaborative endeavor involving active engagement with stakeholders. We facilitated this through workshops, meetings, and open channels for feedback. During the LL activities, stakeholders were encouraged to provide their input and insights. These interactions allowed us to collect a wealth of suggestions and ideas for potential improvements to the LL.

Improvements proposed by stakeholders covered a broad spectrum of aspects related to LL effectiveness and efficiency. These included enhancements in the knowledge transfer process, suggestions for more interactive engagement, and ideas for expanding the scope of LL activities. While some of these improvements may not be feasible within the current framework, the aim was to gather a comprehensive range of ideas to ensure all potential avenues for refinement were explored. This initial phase focused on ideation, with the next steps involving a thorough evaluation of these proposals for practical implementation.

2.4.2 LL in Greece and overall LL evaluation

In assessing the SEACAP 4 SDG Living Lab (LL) in Greece, a comprehensive evaluation strategy has been employed. This strategy encompasses the evaluation of both the specific LL outcomes and the overall performance within the SEACAP 4 SDG project. To appraise the effectiveness of the showcased solutions within the LL, feedback collection was carried out among LL participants. For the broader evaluation of the overall LL performance within the SEACAP 4 SDG project, the questionnaire developed by the University of Patras, as detailed in Annex 2, was adopted. This comprehensive questionnaire provides a structured framework for assessing various facets of LL performance.

Following the collection of these questionnaires, a thorough analysis of the responses received was conducted. This analysis encompasses both quantitative and qualitative assessments of the data to derive meaningful insights into the LL's performance. Graphs have been incorporated for the main evaluation questions to enhance clarity and comprehension.

The evaluation results, derived from both the specific solutions questionnaire and the comprehensive University of Patras questionnaire, are presented in the subsequent sections. Additionally, the fulfilled evaluation questionnaires from stakeholders are included in the annex to provide supplementary context for the evaluation process.

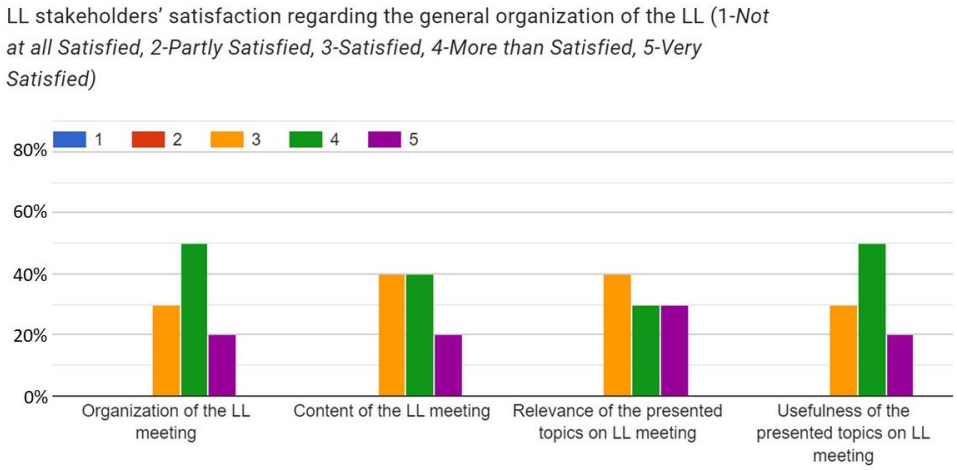

Figure 7 LL stakeholders' satisfaction regarding the general organization of the LL

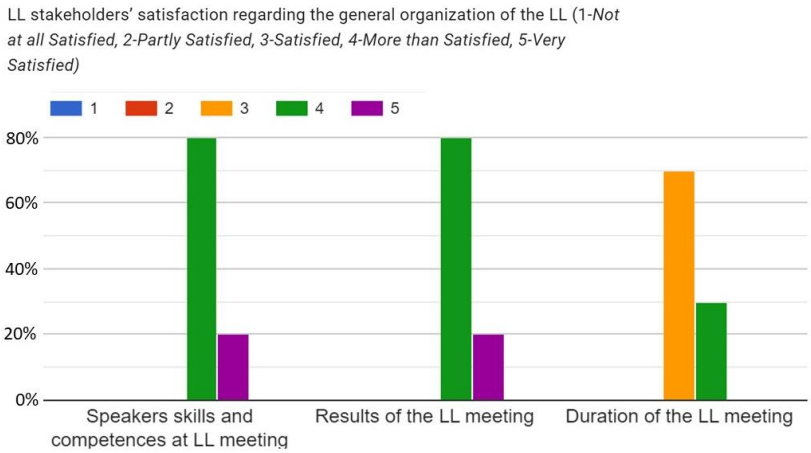

Figure 8 LL stakeholders' satisfaction regarding the general organization of the LL

Benefits gained by participating in LL (1-*Strongly disagree, 2-Disagree, 3-Neither agree or disagree, 4-Agree, 5-Strongly agree)*

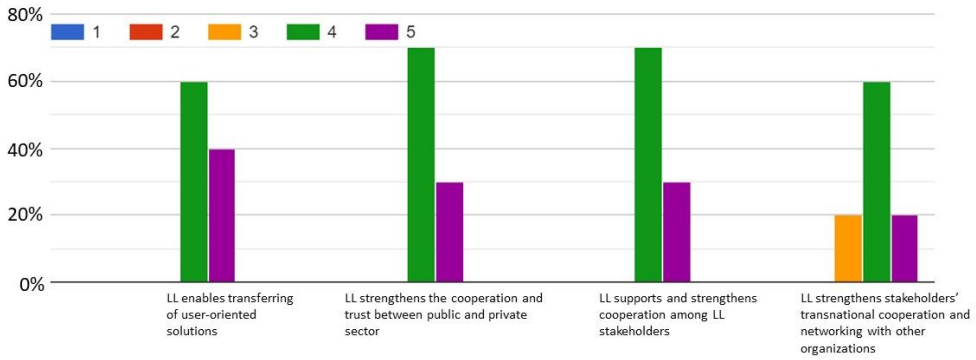

Figure 9 Benefits gained by participating in LL

Benefits gained by participating in LL (1-*Strongly disagree, 2-Disagree, 3-Neither agree or disagree, 4-Agree, 5-Strongly agree)*

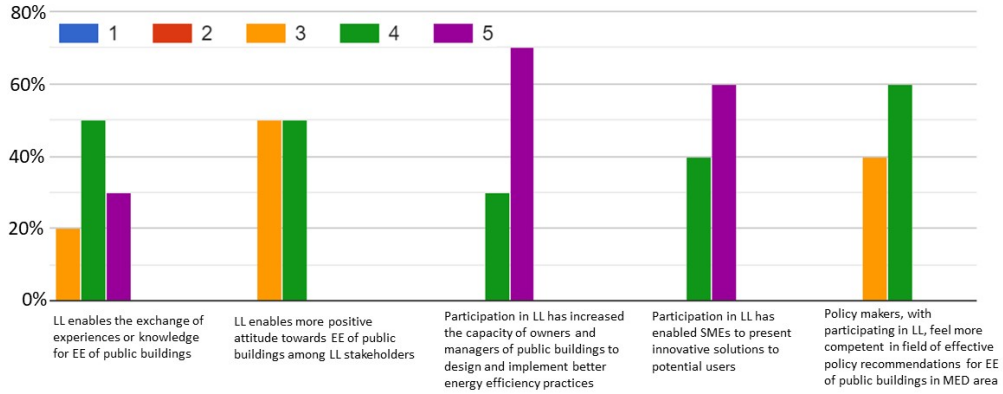

Figure 10 Benefits gained by participating in LL

Stakeholder knowledge on the topics below before and after participating in LL- ***Before*** participating in LL (1. Poor, 2. Fair, 3. Good, 4. Very good, 5.Excellent)

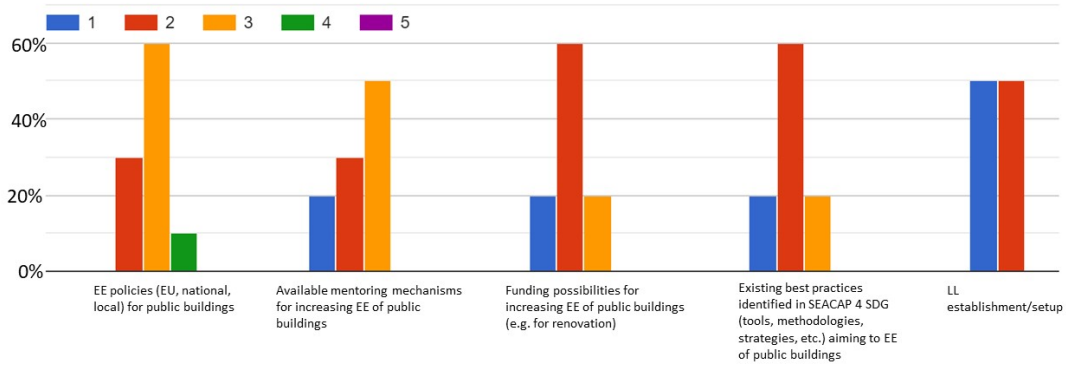

Figure 11 Stakeholder knowledge on the topics of SEACAP 4 SDG & EE before participating in LL

Stakeholder knowledge on the topics below before and after participating in LL- ***After*** participating in LL (1. Poor, 2. Fair, 3. Good, 4. Very good, 5.Excellent)

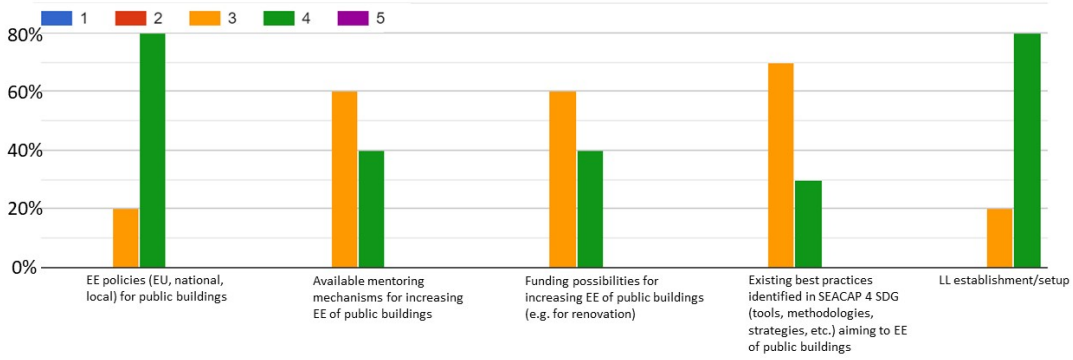

Figure 12 Stakeholder knowledge on the topics of SEACAP 4 SDG & EE after participating in LL

2.4.3 Measurement of Key Performance Indicators (KPIs)

The evaluation of the SEACAP 4 SDG Living Lab's performance in Greece involved the review of proposed Key Performance Indicators (KPIs) and the identification of necessary adaptations or additional KPIs tailored to the specific characteristics of our LL. This assessment aimed to summarize the main findings regarding LL performance, considering the criteria outlined in Annex 3, which provided a comprehensive list of KPIs.

The process began with an examination of the initially proposed KPIs provided by the University of Patras. These KPIs encompassed various aspects of LL activities, from stakeholder outreach to the impact of LL meetings and the knowledge gained by participants. The main findings from this assessment highlighted the need to emphasize certain KPIs related to stakeholder involvement, particularly in areas such as engaging National and Regional Energy Management Authorities and End Users. Additionally, the evaluation revealed the importance of measuring the transnational cooperation and networking of LL stakeholders, as this aspect is crucial in a broader Mediterranean context.

In the evaluation of Key Performance Indicators (KPIs) for the SEACAP 4 SDG Living Lab in Greece, it is important to note that no revision was made to the originally proposed KPIs. However, it should be highlighted that the Living Lab in Greece does not actively participate in the Level 2 demonstrator activities of the SEACAP 4 SDG project. Consequently, the KPIs related to actions and studies specific to this level were not filled in. Our focus primarily revolves around Level 1 activities, which primarily target energy efficiency improvements in public buildings and do not encompass Level 2 activities.

2.4.4 Guidelines and recommendations

Drawing from the assessment of the solutions and the overall performance of the Living Lab (LL), we present a set of comprehensive guidelines and recommendations. These insights aim to secure future enhancements and the enduring sustainability of the established LLs.

Diversify Stakeholder Engagement: Broaden the spectrum of stakeholders involved in LLs. Encourage participation from a wider range of actors, including local communities, NGOs, and governmental bodies, to bring fresh perspectives and foster inclusive, cross-sectoral collaboration.

Tailor Solutions to Local Context: Recognize the unique characteristics and challenges of each local context. Customize LL activities and solutions to address specific regional energy efficiency needs, taking into account local regulations, resources, and community dynamics.

Capacity Building: Prioritize capacity building initiatives for stakeholders, including training, skill development, and knowledge sharing. Empower participants with the tools and expertise needed to drive sustainable energy practices independently.

Documentation and Knowledge Sharing: Establish a robust system for documenting LL outcomes, best practices, and lessons learned. Make this knowledge readily available to a wider audience through reports, publications, and online platforms to maximize its impact.

Long-Term Collaboration: Encourage ongoing collaboration and knowledge exchange among LL participants. Foster a sense of community and shared responsibility for driving energy efficiency improvements beyond the LL's initial phases.

Measurable Impact: Define clear, measurable indicators to assess the impact of LL activities on energy efficiency outcomes. Regularly track progress against these indicators and use the data to refine strategies.

These guidelines and recommendations provide a roadmap for LLs to evolve, adapt, and continue making meaningful contributions to sustainable energy practices. By following these principles, LLs can remain dynamic, responsive, and effective in addressing energy efficiency challenges in their respective regions.

2.5 Disseminate

The dissemination plan for the SEACAP 4 SDG Living Lab (LL) in Greece has been meticulously designed to effectively communicate the key outcomes and insights derived from the LL setup. This plan prioritizes several crucial elements: The primary focus of our dissemination strategy is to clearly convey the substantial benefits resulting from the LL activities. This encompasses the tangible improvements in energy efficiency, sustainability, and overall quality of life within our communities, all attributed to the solutions identified within the LL. To enhance the impact of our message, we intend to highlight the positive experiences of LL participants. Their success stories and testimonials will serve as compelling real-world examples of how collaborative initiatives can drive meaningful change.

In addition to personal experiences, we will widely share the materials and guidelines developed or refined during the LL setup. These resources represent valuable tools for stakeholders interested in energy efficiency and sustainable practices. Furthermore, we are considering the creation of new promotional materials or guidelines, if necessary, to effectively communicate the LL's goals and achievements. We will also identify key events within our country where LL results can be disseminated to a broader audience. Our dissemination efforts will specifically target stakeholders who can benefit from the LL's outcomes. This includes government agencies, local authorities, educational institutions, businesses, and the broader public.

3. Conclusions

The LL was established with the aim of addressing energy efficiency issues in public buildings, fostering transnational cooperation, and cultivating a diverse stakeholder ecosystem. The main issue addressed in the LL was improving the capacity of public building owners and managers to implement more efficient energy practices. The LL enlisted the participation of a wide range of stakeholders, including public building stakeholders, policy influencers, research institutions, businesses, and others.

A notable benefit emerged from the LL's efforts, as stakeholders began to gain access to cutting-edge knowledge and tools. They engaged in collaborative dialogue, fostering cooperation among various actors and strengthening their transnational networking capabilities. Despite difficulties and constraints, they were effectively resolved through adaptive approaches and open communication.

Stakeholder feedback was critical in shaping LL outcomes. Their insights into solutions, processes, and the LL experience were priceless. Insights were also gained from the implementation of solutions. Stakeholders frequently requested changes to specific aspects, suggesting refinements to improve solution efficacy. Furthermore, stakeholders reported that LL activities had a positive impact on their business processes, demonstrating the practical relevance of LL activities. The evaluation process provided us with a better understanding of LL performance. It revealed important information about stakeholder satisfaction, solution effectiveness, and LL dynamics. These insights will be critical for future improvements.

In terms of sustainability, the SEACAP 4 SDG LL in Greece is expected to have a long-term impact after the project is completed. Fostering ongoing collaboration among stakeholders, knowledge transfer, and an adaptive approach to address evolving challenges will be critical to ensuring sustainability. These recommendations are the foundation of our strategy for ensuring the LL's legacy lives on and contributes to a more energy-efficient and sustainable future.

4. Annexes (attached)

Annex 1. List of potential and participating stakeholders

Annex 2. Questionnaire for the evaluation of the overall LL performance

Annex 3. List of Key Performance Indicators (KPIs) -Evaluation of LL performance

Annex 4. Invitation and agenda of the LL events

Annex 5. Certificates of participation in the LL in Greece

Annex 6. List of participants in LL events

Annex1-List of Approached and/or Participating Stakeholders

Name of Stakeholder	**Municipality of Aigialeia**
Type of stakeholder	*Institutional decision makers*
Short description of stakeholder	*The Municipality of Aigialeia is a local government authority located in Greece. Aigialeia is a region in the northern part of the Peloponnese peninsula, and the municipality serves as the administrative body responsible for governing and providing services to the residents and communities within its jurisdiction.*
Short description of cooperation in the project	*Beneficiary municipality of the support mechanism*
Advantage for stakeholders	*The Municipality of Aigialeia, an institutional decision-making stakeholder in the SEACAP 4 SDG project, offers several advantages to the initiative. These benefits include its role in local governance and decision-making, regional expertise, access to local resources, community engagement capabilities, policy implementation authority, monitoring and reporting capacities, and a focus on sustainability.*
Disadvantage for stakeholders	*NA*
Other notes	*NA*

Name of Stakeholder	**Region of Western Greece**
Type of stakeholder	*Institutional decision makers*
Short description of stakeholder	*The Region of Western Greece represents the administrative authority responsible for governing and providing services to the Western Greece region, overseeing various aspects of regional development, including energy and environmental policies, infrastructure, and socio-economic development.*
Short description of cooperation in the project	*The Region of Western Greece, as institutional decision maker, plays a vital role in shaping and implementing the project's objectives and initiatives within its jurisdiction. Their involvement in the local Living Labs reflects their commitment to sustainable development and their dedication to addressing climate change challenges.*
Advantage for stakeholders	*Having the Region of Western Greece as stakeholders enhances the project's effectiveness, relevance, and potential for long-term success within the region.*
Disadvantage for stakeholders	*NA*
Other notes	*RWG is an associated partner in the SEACAP 4 SDG project*

Name of Stakeholder	**Region of Peloponnese (RoP)**
Type of stakeholder	*Institutional decision makers*
Short description of stakeholder	*The Region of Peloponnese (RoP) is a governmental authority located in Greece, specifically responsible for the*

	administration and governance of the Peloponnese peninsula
Short description of cooperation in the project	*Their involvement (mainly through the GreenBuilding project) includes collaborating with UPatras and the SEACAP 4 SDG project in identification of their outputs to be included in the toolkit and the organisation of a Local Living Lab.*
Advantage for stakeholders	*The Region of Peloponnese's role as institutional decision-maker enhances its capacity to drive policy changes, allocate resources, and foster sustainable practices in the Peloponnese region, ultimately contributing to regional development and climate action.*
Disadvantage for stakeholders	*NA*
Other notes	*RoP is an associated partner in the SEACAP 4 SDG project*

Name of Stakeholder	**Municipality of Patras**
Type of stakeholder	*Institutional decision makers*
Short description of stakeholder	*The Municipality of Patras is a local government authority located in Greece, responsible for governing and providing services to the residents and communities within the city of Patras.*
Short description of cooperation in the project	*Discussions have been initiated to explore how the project's methodologies and tools can be applied in Patras, potentially leading to the replication of successful practices.*
Advantage for stakeholders	*By leveraging the knowledge and experiences gained from this collaboration, Patras can work towards enhancing its own*

	sustainability initiatives, benefiting both the municipality and its residents.
Disadvantage for stakeholders	*NA*
Other notes	*NA*

Name of Stakeholder	**Technical Chamber of Greece / Regional Department of Western Greece (TCG/RDWG)**
Type of stakeholder	*Socio-economic operators*
Short description of stakeholder	*The Technical Chamber of Greece / Regional Department of Western Greece (TCG/RDWG) is a public institution that operates as one of the 17 regional departments of the Technical Chamber of Greece and is under the supervision of the Ministry of Infrastructure, Transport and Networks.*
Short description of cooperation in the project	*With Its primary mission is to promote and advance Science & Technology within its members' disciplines, contributing to the economic, social, and cultural development of the country, TCG members were able to be informed about the training activities.*
Advantage for stakeholders	*The Technical Chamber of Greece holds the role of the official Technical Advisor of the Greek State, while the Regional Department of Western Greece is represented in numerous policy-making committees on regional and local level*
Disadvantage for stakeholders	*NA*
Other notes	*NA*

Name of Stakeholder	**European Regional Framework for Cooperation (ERFC)**
Type of stakeholder	*Socio-economic operators*
Short description of stakeholder	*ERFC is an NGO established in Western Greece, with an expanding network of offices in various Greek and EU regions. ERFC's members and associates include key EU integration executives, public bodies, academic institutions, and civil societies.*
Short description of cooperation in the project	ERFC collaborates with the SEACAP 4 SDG project by leveraging its expertise in EU integration, regional competitiveness, and project implementation. As a stakeholder, ERFC actively participates in the project's activities, providing insights and recommendations based on its extensive experience in EU-funded initiatives.
Advantage for stakeholders	*ERFC's expertise in EU regulations and project implementation enhances the quality and effectiveness of the project's activities.*
Disadvantage for stakeholders	*NA*
Other notes	*NA*

Name of Stakeholder	**Freelance engineers**
Type of stakeholder	*Building/Energy managers*
Short description of stakeholder	*Freelance engineers in this context represent professionals with expertise in architectural and civil engineering, particularly those who work independently.*
Short description of cooperation in the project	*Freelance engineers are actively involved in the SEACAP project as they participate in the training activities, and they gain specialized knowledge and skills in designing and*

	implementing energy-efficient solutions in various structures.
Advantage for stakeholders	*Their involvement allows them to expand their professional skill set and network with other experts in the field. Additionally, they contribute to the development of more energy-efficient and environmentally friendly solutions for municipalities, promoting sustainability in their work.*
Disadvantage for stakeholders	*NA*
Other notes	*NA*

Name of Stakeholder	***Students/professors and researchers***
Type of stakeholder	*Other*
Short description of stakeholder	*Students, professors, and researchers affiliated with the University of Patras and the University of Peloponnese, who are experts in various fields related to sustainable energy and climate action.*
Short description of cooperation in the project	*They engage in the SEACAP project by leveraging their academic expertise. They contribute to the project by participating in the Living Labs and proposing innovative renovation measures.*
Advantage for stakeholders	*The involvement of students, professors, and researchers benefits the project by infusing it with cutting-edge knowledge and innovative ideas.*
Disadvantage for stakeholders	*NA*
Other notes	*NA*

Questionnaire for the evaluation of the overall LL performance

- **To be filled-in by the LLL coordinators (SLIT):**

1. Number of stakeholders (potential and actual)

	Total number of stakeholders **identified** as potential LL stakeholders	Total number of stakeholders **joining** the LL		
		1st LLL	2nd LLL	Total
Institutional decision makers	5	18	3	21
National and regional energy management authorities				
Building / Energy managers	10	9	2	11
Socio-economic operators	4	7	1	8
End users				
Other, (students/professors)	20	5	48	53

2. Execution of LL meetings

	Number
Individual/one-on-one meetings (for example between the Municipality and the external expert and/ or the PP/ Local teams).	5
Joint LL meetings (meetings held among all or almost all LL stakeholders).	2
Average number of participants per joint meetings.	40
Meetings organized between LL coordinators of joint LLLs (e.g. in case of Spain)	-
Average duration of joint LL meetings (in hours)	3 hours

3. Total number of presented Selected Reference Project's Outcomes identified in the SEACAP 4 SDG toolkit per type* within LL activities. (*categorization is based on the factsheet information)

	Total number	**Specify which Outcome (s)**
Number of SRP's Outcomes under type *"Tool"*	2	IMPULSE PLUS_KPIsProcessor_ IMPULSE_FINANCIAL_Scheme
Number of SRP's Outcomes under type *"Platform"*	-	
Number of MPs' results under category *"Methodology"*	2	IMPULSE_METHODOLOGY_BOOKLET IMPULSE_PreparatorySet_up

1) ***<u>Participant Ioanna Michalopoulou</u>***

1. Name of the LL: *EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans*

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

2. Name of the person filling in the questionnaire: Ioanna Michalopoulou

3. Positions of the person in the stakeholders' organization: Architect Engineer

4. Name of the LL stakeholder/organization: Municipality of Aigialeia

5. Type of the stakeholder

*(e.g**. Institutional decision makers**, National and regional energy management authorities, Building / Energy managers, Socio-economic operators, End users, etc.)*

6. Country: Greece

7. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting				x	
Content of the LL meeting				x	
Relevance of the presented topics on LL meeting					x
Usefulness of the presented topics on LL meeting					x
Speakers skills and competences at the LL meeting				x	
Results of the LL meeting				x	

Duration of the LL meeting			x		

8. Benefits gained by participating in LL (state the level of agreement by writing down "X" in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions				x	
LL strengthens the cooperation and trust between public and private sector				x	
LL supports and strengthens cooperation among LL stakeholders				x	
LL strengthens stakeholders' transnational cooperation and networking with other organizations			x		
LL enables the exchange of experiences or knowledge for EE of public buildings			x		
LL enables more positive attitude towards EE of public buildings among LL stakeholders			x		
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices					x
Participation in LL has enabled SMEs to present innovative solutions to potential users					x
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area				x	

9. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings		x							x	
Available mentoring mechanisms for increasing EE of public buildings			x						x	
Funding possibilities for increasing EE of public buildings (e.g. for renovation)		x						x		
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings			x					x		
LL establishment/setup		x							x	

2) ***Participant Chrysoula Christia***

1. Name of the LL: *EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans*

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

2. Name of the person filling in the questionnaire: Chrysoula Christia

3. Positions of the person in the stakeholders' organization: Civil Servant, Project manager European Projects

4. Name of the LL stakeholder/organization: Municipality of Aigialeia

5. Type of the stakeholder

*(e.g. **Institutional decision makers**, National and regional energy management authorities, Building / Energy managers, Socio-economic operators, End users, etc.)*

6. Country: Greece

7. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting					x
Content of the LL meeting					x
Relevance of the presented topics on LL meeting					x
Usefulness of the presented topics on LL meeting					x

Speakers skills and competences at the LL meeting				x	
Results of the LL meeting				x	
Duration of the LL meeting			x		

8. Benefits gained by participating in LL (state the level of agreement by writing down "X" in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions					x
LL strengthens the cooperation and trust between public and private sector					x
LL supports and strengthens cooperation among LL stakeholders					x
LL strengthens stakeholders' transnational cooperation and networking with other organizations				x	
LL enables the exchange of experiences or knowledge for EE of public buildings				x	
LL enables more positive attitude towards EE of public buildings among LL stakeholders			x		
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices					x
Participation in LL has enabled SMEs to present innovative solutions to potential users					x
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area				x	

9. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings			x						x	
Available mentoring mechanisms for increasing EE of public buildings			x						x	
Funding possibilities for increasing EE of public buildings (e.g. for renovation)			x						x	
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings			x						x	
LL establishment/setup		x							x	

3) Participant Michalis Skalidakis

1. Name of the LL: *EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans*

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

2. Name of the person filling in the questionnaire: Michalis Skalidakis

3. Positions of the person in the stakeholders' organization: Civil Servant, Structure Service Directorate

4. Name of the LL stakeholder/organization: Municipality of Aigialeia

5. Type of the stakeholder

*(e.g. **Institutional decision makers**, National and regional energy management authorities, Building / Energy managers, Socio-economic operators, End users, etc.)*

6. Country: Greece

7. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting			x		
Content of the LL meeting			x		
Relevance of the presented topics on LL meeting				x	
Usefulness of the presented topics on LL meeting				x	
Speakers skills and competences at the LL meeting				x	
Results of the LL meeting				x	

Duration of the LL meeting			x		

8. Benefits gained by participating in LL (state the level of agreement by writing down "X" in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions				x	
LL strengthens the cooperation and trust between public and private sector				x	
LL supports and strengthens cooperation among LL stakeholders				x	
LL strengthens stakeholders' transnational cooperation and networking with other organizations			x		
LL enables the exchange of experiences or knowledge for EE of public buildings			x		
LL enables more positive attitude towards EE of public buildings among LL stakeholders			x		
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices					x
Participation in LL has enabled SMEs to present innovative solutions to potential users					x
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area				x	

9. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings			x						x	
Available mentoring mechanisms for increasing EE of public buildings			x						x	
Funding possibilities for increasing EE of public buildings (e.g. for renovation)		x							x	
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings		x							x	
LL establishment/setup		x						x		

4) ***Participant Nikos Selalmatzidis***

1. Name of the LL: *EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans*

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

2. Name of the person filling in the questionnaire: Nikos Selalmatzidis

3. Positions of the person in the stakeholders' organization: Civil Servant, Structure Service Directorate

4. Name of the LL stakeholder/organization: Municipality of Aigialeia

5. Type of the stakeholder

*(e.g**. Institutional decision makers**, National and regional energy management authorities, Building / Energy managers, Socio-economic operators, End users, etc.)*

6. Country: Greece

7. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting				x	
Content of the LL meeting			x		
Relevance of the presented topics on LL meeting			x		
Usefulness of the presented topics on LL meeting				x	
Speakers skills and competences at the LL meeting				x	

Results of the LL meeting				x	
Duration of the LL meeting			x		

8. Benefits gained by participating in LL (state the level of agreement by writing down "X" in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions				x	
LL strengthens the cooperation and trust between public and private sector				x	
LL supports and strengthens cooperation among LL stakeholders				x	
LL strengthens stakeholders' transnational cooperation and networking with other organizations				x	
LL enables the exchange of experiences or knowledge for EE of public buildings				x	
LL enables more positive attitude towards EE of public buildings among LL stakeholders			x		
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices				x	
Participation in LL has enabled SMEs to present innovative solutions to potential users				x	
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area			x		

9. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings			x					x		
Available mentoring mechanisms for increasing EE of public buildings			x					x		
Funding possibilities for increasing EE of public buildings (e.g. for renovation)		x							x	
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings		x							x	
LL establishment/setup		x							x	

5) ***Participant Spiros Rigopoulos***

1. Name of the LL: *EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans*

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

2. Name of the person filling in the questionnaire: Spiros Rigopoulos

3. Positions of the person in the stakeholders' organization: Engineer
4. Name of the LL stakeholder/organization: Private Freelance Engineer

5. Type of the stakeholder

(e.g. Institutional decision makers, National and regional energy management authorities, ***Building / Energy managers****, Socio-economic operators, End users, etc.)*

6. Country: Greece
7. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting			x		
Content of the LL meeting			x		
Relevance of the presented topics on LL meeting			x		
Usefulness of the presented topics on LL meeting			x		
Speakers skills and competences at the LL meeting				x	

Results of the LL meeting				x	
Duration of the LL meeting			x		

8. Benefits gained by participating in LL (state the level of agreement by writing down "X" in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions				x	
LL strengthens the cooperation and trust between public and private sector				x	
LL supports and strengthens cooperation among LL stakeholders				x	
LL strengthens stakeholders' transnational cooperation and networking with other organizations				x	
LL enables the exchange of experiences or knowledge for EE of public buildings				x	
LL enables more positive attitude towards EE of public buildings among LL stakeholders			x		
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices				x	
Participation in LL has enabled SMEs to present innovative solutions to potential users				x	
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area			x		

9. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings				x					x	
Available mentoring mechanisms for increasing EE of public buildings		x						x		
Funding possibilities for increasing EE of public buildings (e.g. for renovation)		x						x		
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings		x						x		
LL establishment/setup		x							x	

6) *Participant Akrivi Palaiologopoulou*

1. Name of the LL: *EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans*

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

2. Name of the person filling in the questionnaire: Akrivi Palaiologopoulou

3. Positions of the person in the stakeholders' organization: Civil Servant, Engineer

4. Name of the LL stakeholder/organization: Municipality of Aigialeia

5. Type of the stakeholder

*(e.g. **Institutional decision makers**, National and regional energy management authorities, Building / Energy managers, Socio-economic operators, End users, etc.)*

6. Country: Greece

7. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting				x	
Content of the LL meeting				x	
Relevance of the presented topics on LL meeting			x		
Usefulness of the presented topics on LL meeting			x		
Speakers skills and competences at the LL				x	

meeting					
Results of the LL meeting				x	
Duration of the LL meeting			x		

8. Benefits gained by participating in LL (state the level of agreement by writing down "X" in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions				x	
LL strengthens the cooperation and trust between public and private sector				x	
LL supports and strengthens cooperation among LL stakeholders				x	
LL strengthens stakeholders' transnational cooperation and networking with other organizations				x	
LL enables the exchange of experiences or knowledge for EE of public buildings				x	
LL enables more positive attitude towards EE of public buildings among LL stakeholders				x	
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices				x	
Participation in LL has enabled SMEs to present innovative solutions to potential users				x	
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area			x		

9. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings			x						x	
Available mentoring mechanisms for increasing EE of public buildings		x						x		
Funding possibilities for increasing EE of public buildings (e.g. for renovation)		x						x		
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings		x						x		
LL establishment/setup	x							x		

7) ***Participant Despoina Athanasopoulou***

1. Name of the LL: *EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans*

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

2. Name of the person filling in the questionnaire: Despoina Athanasopoulou
3. Positions of the person in the stakeholders' organization: Engineer
4. Name of the LL stakeholder/organization: Freelance Civil Engineer

5. Type of the stakeholder

(e.g. Institutional decision makers, National and regional energy management authorities, ***Building / Energy managers****, Socio-economic operators, End users, etc.)*

6. Country: Greece
7. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting				x	
Content of the LL meeting				x	
Relevance of the presented topics on LL meeting				x	
Usefulness of the presented topics on LL meeting				x	
Speakers skills and competences at the LL meeting					x
Results of the LL meeting					x
Duration of the LL meeting				x	

8. Benefits gained by participating in LL (state the level of agreement by writing down “X” in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions					x
LL strengthens the cooperation and trust between public and private sector					x
LL supports and strengthens cooperation among LL stakeholders					x
LL strengthens stakeholders’ transnational cooperation and networking with other organizations					x
LL enables the exchange of experiences or knowledge for EE of public buildings					x
LL enables more positive attitude towards EE of public buildings among LL stakeholders				x	
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices					x
Participation in LL has enabled SMEs to present innovative solutions to potential users					x
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area				x	

9. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings			x						x	
Available mentoring mechanisms for increasing EE of public buildings		x						x		
Funding possibilities for increasing EE of public buildings (e.g. for renovation)		x						x		
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings		x						x		
LL establishment/setup	x								x	

8) *Participant Vasileios Christopoulos*

1. Name of the LL: EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

2. Name of the person filling in the questionnaire: Vasileios Christopoulos
3. Positions of the person in the stakeholders' organization: Deputy Mayor
4. Name of the LL stakeholder/organization: Municipality of Aigialeia

5. Type of the stakeholder

*(e.g. **Institutional decision makers**, National and regional energy management authorities, Building / Energy managers, Socio-economic operators, End users, etc.)*

6. Country: Greece
7. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting			x		
Content of the LL meeting			x		
Relevance of the presented topics on LL meeting			x		
Usefulness of the presented topics on LL meeting			x		
Speakers skills and competences at the LL meeting				x	
Results of the LL meeting				x	
Duration of the LL meeting				x	

8. Benefits gained by participating in LL (state the level of agreement by writing down “X” in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions				x	
LL strengthens the cooperation and trust between public and private sector				x	
LL supports and strengthens cooperation among LL stakeholders				x	
LL strengthens stakeholders’ transnational cooperation and networking with other organizations				x	
LL enables the exchange of experiences or knowledge for EE of public buildings					x
LL enables more positive attitude towards EE of public buildings among LL stakeholders				x	
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices					x
Participation in LL has enabled SMEs to present innovative solutions to potential users					x
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area				x	

9. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings			x						x	
Available mentoring mechanisms for increasing EE of public buildings			x						x	
Funding possibilities for increasing EE of public buildings (e.g. for renovation)			x						x	
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings		x						x		
LL establishment/setup	x								x	

9) *Participant Dimitra Chondrogianni*

1. Name of the LL: *EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans*

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

2. Name of the person filling in the questionnaire: Dimitra Chondrogianni

3. Positions of the person in the stakeholders' organization: Architect

4. Name of the LL stakeholder/organization: Freelance Architect Engineer

5. Type of the stakeholder

(e.g. Institutional decision makers, National and regional energy management authorities, ***Building / Energy managers****, Socio-economic operators, End users, etc.)*

6. Country: Greece

7. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting					x
Content of the LL meeting					x
Relevance of the presented topics on LL meeting					x
Usefulness of the presented topics on LL meeting				x	
Speakers skills and competences at the LL meeting				x	
Results of the LL meeting				x	

Duration of the LL meeting			x		

8. Benefits gained by participating in LL (state the level of agreement by writing down "X" in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions					x
LL strengthens the cooperation and trust between public and private sector				x	
LL supports and strengthens cooperation among LL stakeholders				x	
LL strengthens stakeholders' transnational cooperation and networking with other organizations				x	
LL enables the exchange of experiences or knowledge for EE of public buildings				x	
LL enables more positive attitude towards EE of public buildings among LL stakeholders				x	
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices					x
Participation in LL has enabled SMEs to present innovative solutions to potential users				x	
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area			x		

9. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings		x						x		
Available mentoring mechanisms for increasing EE of public buildings	x							x		
Funding possibilities for increasing EE of public buildings (e.g. for renovation)	x							x		
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings	x							x		
LL establishment/setup	x								x	

10) *Participant Aristotelis Ganos*

10. Name of the LL: *EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans*

(e.g EE Innovative Solutions Living Lab in Greece -Computational Tools for Public Buildings Energy Efficiency Plans)

11. Name of the person filling in the questionnaire: Aristotelis Ganos

12. Positions of the person in the stakeholders' organization: Civil Engineer

13. Name of the LL stakeholder/organization: Freelance Civil Engineer

14. Type of the stakeholder

(e.g. Institutional decision makers, National and regional energy management authorities, ***Building / Energy managers****, Socio-economic operators, End users, etc.)*

15. Country: Greece

16. LL stakeholders' satisfaction regarding the general organization of the LL (state the level of satisfaction by writing down "X" in the corresponding cell).

	Level of satisfaction				
	Not at all Satisfied	*Partly Satisfied*	*Satisfied*	*More than Satisfied*	*Very Satisfied*
Organization of the LL meeting				x	
Content of the LL meeting				x	
Relevance of the presented topics on LL meeting				x	
Usefulness of the presented topics on LL meeting				x	
Speakers skills and competences at the LL meeting					x
Results of the LL meeting					x

Duration of the LL meeting				x	

17. Benefits gained by participating in LL (state the level of agreement by writing down "X" in the corresponding cell).

	Strongly disagree	*Disagree*	*Neither agree or disagree*	*Agree*	*Strongly agree*
LL enables transferring of user-oriented solutions					x
LL strengthens the cooperation and trust between public and private sector					x
LL supports and strengthens cooperation among LL stakeholders					x
LL strengthens stakeholders' transnational cooperation and networking with other organizations					x
LL enables the exchange of experiences or knowledge for EE of public buildings					x
LL enables more positive attitude towards EE of public buildings among LL stakeholders				x	
Participation in LL has increased the capacity of owners and managers of public buildings to design and implement better energy efficiency practices					x
Participation in LL has enabled SMEs to present innovative solutions to potential users					x
Policy makers, with participating in LL, feel more competent in field of effective policy recommendations for EE of public buildings in MED area				x	

18. Stakeholder knowledge on the topics below before and after participating in LL (state the level of knowledge by writing down "X" in the corresponding cell).

	Before **participating in LL**					*After* **participating in LL**				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
EE policies (EU, national, local) for public buildings		x							x	
Available mentoring mechanisms for increasing EE of public buildings	x							x		
Funding possibilities for increasing EE of public buildings (e.g. for renovation)	x							x		
Existing best practices identified in SEACAP 4 SDG (tools, methodologies, strategies, etc.) aiming to EE of public buildings	x							x		
LL establishment/setup	x								x	

Annex 3- List of Key Performance Indicators (KPIs) - Evaluation of LL performance

Area	No.	Performance indicator name	Metric	Description of performance indicator
Approached stakeholders	1	Number of potential Institutional decision makers	5	The indicator measures the number of potential Institutional decision makers contacted by LL coordinator to be involved in LL activities.
	2	Number of potential National and regional energy management authorities	-	The indicator measures the number of potential National and regional energy management authorities contacted by LL coordinator to be involved in LL activities.
	3	Number of potential Building / Energy managers	10	The indicator measures the number of potential Building / Energy managers contacted by LL coordinator to be involved in LL activities.
	4	Number of potential Socio-economic operators	4	The indicator measures the number of Socio-economic operators contacted by LL coordinator to be involved in LL activities.
	5	Number of potential End users	-	The indicator measures the number of potential End users contacted by LL coordinator to be involved in LL activities.
	6	Number of potential other organizations (students/professors)	20	The indicator measures the number of potential other organizations contacted by LL coordinator to be involved in LL activities.
Participating stakeholders	7	Number of Institutional decision makers	21	The indicator measures the number of Institutional decision makers, involved in LL activities.
	8	Number of National and regional energy management authorities	-	The indicator measures the number of National and regional energy management authorities involved in LL activities.
	9	Number of Building / Energy managers	11	The indicator measures the number of Building / Energy managers involved in LL.
	10	Number of Socio-economic operators	8	The indicator measures the number of Socio-economic operators involved in LL activities.

	11	Number of End users	-	The indicator measures the number of End users involved in LL activities.
	12	Number of other organizations (please indicate)	53	The indicator measures the number of other organizations involved in LL activities.
LL meetings	13	Number of individual meetings	5	The indicator measures the number of individual/one-on-one meetings (for example between the Municipality and the external expert and/ or the PP/ Local teams).
	14	Number of joint LL meetings	2	The indicator measures the number of joint LL meetings (meetings held among all or almost all stakeholders).
	15	Number of participants in joint LL meetings	40	The indicator measures the average number of participants per joint meetings.
	16	Number of meetings between LL coordinators of joint LLLs	-	The indicator measures the number of meetings organized between LL coordinators of joint LLLs (e.g. in case of Spain)
	17	Average duration of joint meetings	3 hours	The indicator measures the average duration of joint meetings (in hours).
Themes presented	18	Number of SRP's Outcomes under type "Tool"	2	The indicator measures the number of Number of SRP's Outcomes under type "Tool" (categorization is based on the factsheet information) presented within LL activities.
	19	Number of SRP's Outcomes under type "*Platform*"	-	The indicator measures the number of Number of SRP's Outcomes under type "*Platform*" (categorization is based on the factsheet information) presented within LL activities.
	20	Number of SRP's Outcomes under type "*Methodology*"	2	The indicator measures the number of Number of SRP's Outcomes under type "*Methodology*" (categorization is based on the factsheet information) presented within LL activities.
Benefits gained	21	Transferring of user-oriented solutions	Level of agreement: -Strongly disagree -Disagree -Neither agree or	The indicator measures if LL enables transferring of user-oriented solutions.

			disagree -Agree -Strongly agree	
	22	Strengthen the cooperation and trust between public and private sector	Level of agreement	The indicator measures if LL strengthens the cooperation and trust between public and private sector.
	23	Strengthen cooperation among LL stakeholders	Level of agreement	The indicator measures if LL supports and strengthens cooperation among LL stakeholders.
	24	Strengthen LL stakeholders' transnational cooperation and networking	Level of agreement	The indicator measures if LL strengthens stakeholders' transnational cooperation and networking with other organizations (PAs, SMEs, clusters, business support organization, etc.).
	25	Exchange experiences or concerns for EE of public buildings	Level of agreement	The indicator measures if LL enables the exchange of experiences or concerns for EE of public buildings among LL stakeholders.
	26	More positive attitude towards the design and implementation of better energy efficiency practices	Level of agreement	The indicator measures if LL enables more positive attitude towards the design and implementation of better energy efficiency practices among LL stakeholders.
	27	Adoption of innovative solutions	Level of agreement	The indicator measures if participation in LL has enabled public buildings' owners and managers to be familiarised with innovative energy management solutions.
	28	Effective policy recommendations for enhancing EE of public buildings in MED area.	Level of agreement	The indicator measures if policy makers, with participating in LL, feel more competent in field of effective policy recommendations for enhancing EE of public buildings in MED area.
Knowledge	34	Knowledge on EE policies (EU, national, local) for public buildings	Level of knowledge: -Poor -Fair -Good -Very good -Excellent	The indicator measures level of knowledge of LL stakeholders on EE policies (EU, national, local) for public buildings before and after participating in LL activities.

	35	Knowledge on available mentoring mechanisms for increasing EE of public buildings	Level of knowledge	The indicator measures level of knowledge of LL stakeholders on available mentoring mechanisms for increasing EE of public buildings before and after participating in LL activities.
	36	Knowledge on funding possibilities for increasing EE of public buildings (e.g. for renovation)	Level of knowledge	The indicator measures level of knowledge of LL stakeholders on funding possibilities for increasing EE of public buildings (e.g. for renovation) before and after participating in LL activities.
	37	Knowledge on existing best practices (tools, methodologies, strategies, etc.) aiming to EE of public buildings	Level of knowledge	The indicator measures level of knowledge of LL stakeholder on existing best practices (tools, methodologies, strategies, etc.) aiming to EE of public buildings before and after participating in LL activities.
	38	Knowledge on LL concept/establishment/setup	Level of knowledge	The indicator measures level of knowledge of LL stakeholders on LL concept/setup before and after participating in LL activities.
Support mechanism **extent**	39	N° of cities involved/territories covered	1	The indicator measures the number of the cities involved/territories covered while implementing the support mechanism
	40	Area covered	Municipality is **729,42 km2** Total building surface subjected to deep retrofit: **1.115 m2**.	The indicator measures the area of intervention covered (municipality /city area involved)
	41	Building stock addressed	81 buildings in total. 10 priority buildings for energy renovation.	The indicator measures the number of buildings that were object of studies and analysis
	41	Energy consumption/CO_2 emissions	Annual total primary energy consumption: 1.980 MWh/y	The indicator measures the baseline energy consumption and CO_2 in the selected municipality/city**(if it is available)**

List of Key Performance Indicators (KPIs) –
Support mechanism: EE/RE actions planned

No.	Performance indicator name	Metric	Description of performance indicator
1	Baseline SEACAP (or equivalent) plans	1	The indicator measures the number of SEACAP (or equivalent) plans of the selected cities/municipalities available
2	Baseline target of the SEACAP (or equivalent)	KWh/Tons In terms of energy consumption and CO2 emissions is to achieve a reduction of at least 30% in carbon emissions by the year 2030 compared to the reference year of 2019.	The indicator measures the target set in the SEACAP (or equivalent) of the selected municipality /city in terms of Energy consumption to be reduced and CO_2 emissions to be avoided
3	Actions planned	3 scenarios with different indicative actions	The indicator measures the number of actions that are planned (EE/RE) to be proposed in the framework of the support mechanism
4	Impact of the actions planned	Reduction of CO2 emissions by 409.7 tons (95%) is concluded for the 10 priority buildings only, compared to the existing situation.	The indicator measures the amount of energy consumption to be reduced and CO_2 emissions to be avoided thanks to the actions that will be proposed in the framework of the support mechanism
5	Technical studies	1	The indicator measures the number of technical studies delivered to evaluate the proposed actions while exploiting the capitalization toolkit
6	Economic studies **(for level two demonstrators)**	Number	The indicator measures the number of economic studies delivered to evaluate the proposed actions while exploiting the capitalization toolkit
7	Legal framework **(for level two demonstrators)**	Number	The indicator measures the number of feasibility legal studies of the actions proposed which highlights the legal requirements applicable to the corresponding investment as well as any legal and/or regulatory incentives and obstacles that exist.

Πάτρα, 17/01/2023

Το Πανεπιστήμιο Πατρών και ο Δήμος Αιγιαλείας

σας προσκαλούν

Την Τετάρτη 01 Φεβρουαρίου 2023, και ώρα 9.00 π.μ.

να συμμετάσχετε στο Εκπαιδευτικό Σεμινάριο στην χρήση υπολογιστικών εργαλείων για την εκπόνηση Ενεργειακών Σχεδίων για δημόσια κτήρια

στο Πολιτιστικό Κέντρο Αιγίου "Αλέκος Μέγαρης" (Παλαιό Νοσοκομείο)

Η συγκεκριμένη εκδήλωση πραγματοποιείται στα πλαίσια του Έργου **"SEACAP 4 SDG -** Med SEACAP integration through uniform adapted assessment and financing, targeting buildings in education and health sectors, for sustainable development goals in a smart society**".** Το Πανεπιστήμιο Πατρών, Τμήμα Πολιτικών Μηχανικών συμμετέχει ως εταίρος στο έργο SEACAP 4 SDG, που συγχρηματοδοτείται από Ευρωπαϊκούς και Εθνικούς Πόρους στο πλαίσιο του «2014-2020 ENI CBC Mediterranean Programme».

Το Έργο SEACAP 4 SDG συγκεντρώνει εξειδικευμένα υπολογιστικά εργαλεία που έχουν προκύψει από Ευρωπαϊκά Έργα με ειδική στόχευση στον σχεδιασμό για την βελτίωση της ενεργειακής απόδοσης Δημοσίων Κτηρίων. Στόχος του Έργου είναι η ενημέρωση και η εκπαίδευση επιλεγμένων Δήμων των συμμετεχουσών Χωρών της Μεσογείου, στην βέλτιστη χρήση των εξειδικευμένων υπολογιστικών εργαλείων για την ανάπτυξη ρεαλιστικού σχεδίου βελτίωσης της ενεργειακής απόδοσης του δημοτικού κτηριακού αποθέματος στο πλαίσιο του ΣΔΑΕΚ. **Στην Ελλάδα έχει επιλεγεί ο Δήμος Αιγιαλείας** (κατόπιν της ειδικής διαδικασίας επιλογής Δήμων που εφαρμόζεται στο Έργο).

Η εκπαίδευση απευθύνεται κυρίως σε τμήματα δημοσίων φορέων, σε τεχνικούς και μηχανικούς που ασχολούνται με την ενεργειακή διαχείριση κτηρίων, αλλά και σε αρμοδίους λήψης απόφασης και χάραξης πολιτικών για την βελτίωση της ενεργειακής απόδοσης ώστε να αποκτήσουν δεξιότητες στην αξιοποίηση εργαλείων αιχμής για την εκπόνηση ενεργειακών σχεδίων δράσης.

Παρακαλούμε να δηλώσετε την συμμετοχή σας συμπληρώνοντας και την φόρμα συμμετοχής. Για οποιοδήποτε θέμα μπορείτε να επικοινωνείτε με τον Επιστημονικό Υπεύθυνο του έργου καθ. Γεώργιο Ι. Στεφανίδη, Ομότιμο Καθηγητή του Τμήματος Πολιτικών Μηχανικών (e-mail:yjste@upatras.gr) και με το αρμόδιο πρόσωπο επικοινωνίας του Πανεπιστημίου Πατρών κα Παναγιώτα Σαράντη (e-mail: psaranti@g.upatras.gr).

Η εκδήλωση θα γίνει στα ελληνικά. Επισυνάπτεται το αρχικό Πρόγραμμα της εκδήλωσης.

Το έργο SEACAP 4 SDG συγχρηματοδοτείται από Ευρωπαϊκούς και Εθνικούς Πόρους στο πλαίσιο του «2014-2020 ENI CBC Mediterranean Programme

ΕΚΠΑΙΔΕΥΤΙΚΟ ΣΕΜΙΝΑΡΙΟ ΣΤΗΝ ΧΡΗΣΗ ΥΠΟΛΟΓΙΣΤΙΚΩΝ ΕΡΓΑΛΕΙΩΝ ΓΙΑ ΤΗΝ ΕΚΠΟΝΗΣΗ ΕΝΕΡΓΕΙΑΚΩΝ ΣΧΕΔΙΩΝ ΓΙΑ ΔΗΜΟΣΙΑ ΚΤΗΡΙΑ

Τετάρτη 1η Φεβρουαρίου 2023, ώρα 9.00 π.μ.

Στον ορίζοντα επίτευξης των στόχων του Εθνικού Σχεδίου για την Ενέργεια και το Κλίμα (ΕΣΕΚ), το οποίο ενσωματώνει τις Ευρωπαϊκές Πολιτικές για την βελτίωση της Ενεργειακής Απόδοσης και την προσαρμογή στην κλιματική αλλαγή, τίθενται σημαντικές προκλήσεις για την μετάβαση προς μία οικονομία χαμηλών εκπομπών έως το έτος 2030. Προς την κατεύθυνση αυτήν αναγνωρίζεται ο κεφαλαιώδης ρόλος των τοπικών αυτοδιοικήσεων, Δήμων και Περιφερειών, ιδίως μέσω των υποχρεώσεων που απορρέουν από το τρέχον θεσμικό πλαίσιο – ενδεικτικά η εκπόνηση Σχεδίου Ενεργειακής Απόδοσης Κτηρίων (ΣΕΑΚ) στο πλαίσιο του Άρθρου 6 του Ν. 4843/2021, καθώς και η κατάρτιση Δημοτικού Σχεδίου Μείωσης Εκπομπών (ΔηΣΜΕ) στο πλαίσιο του Νέου Κλιματικού Νόμου (Ν. 4936/27.05.2022). Μία πολύ χρήσιμη πρωτοβουλία για την εκπόνηση των αναγκαίων Σχεδίων είναι το Σύμφωνο των Δημάρχων και το Σχέδιο Δράσης Αειφόρου Ενέργειας και Κλίματος (ΣΔΑΕΚ).

Το Έργο SEACAP 4 SDG συγκεντρώνει εξειδικευμένα υπολογιστικά εργαλεία που έχουν προκύψει από Ευρωπαϊκά Έργα με ειδική στόχευση στον σχεδιασμό για την βελτίωση της ενεργειακής απόδοσης Δημοσίων Κτηρίων. Στόχος του Έργου είναι η ενημέρωση και η **εκπαίδευση επιλεγμένων Δήμων των συμμετεχουσών Χωρών της Μεσογείου, στην βέλτιστη χρήση των εξειδικευμένων υπολογιστικών εργαλείων για την ανάπτυξη ρεαλιστικού σχεδίου βελτίωσης της ενεργειακής απόδοσης του δημοτικού κτηριακού αποθέματος στο πλαίσιο του ΣΔΑΕΚ**.

Στην Ελλάδα έχει επιλεγεί ο Δήμος Αιγιαλείας (κατόπιν της ειδικής διαδικασίας επιλογής Δήμων που εφαρμόζεται στο Έργο). Η δράση εκπαίδευσης συντονίζεται από το Τμήμα Πολιτικών Μηχανικών του Πανεπιστημίου Πατρών, Εταίρου στο Έργο SEACAP 4 SDG, και υλοποιείται από την Εταιρεία MES Ενεργειακή Α.Ε., Ανάδοχο του Πανεπιστημίου Πατρών ως Εξωτερικός Συνεργάτης στο Έργο. Η εκπαίδευση απευθύνεται κυρίως σε τμήματα δημοσίων φορέων, σε τεχνικούς και μηχανικούς που ασχολούνται με την ενεργειακή διαχείριση κτηρίων, αλλά και σε αρμοδίους λήψης απόφασης και χάραξης πολιτικών για την βελτίωση της ενεργειακής απόδοσης ώστε να αποκτήσουν δεξιότητες στην αξιοποίηση εργαλείων αιχμής για την εκπόνηση ενεργειακών σχεδίων δράσης.

Το έργο SEACAP 4 SDG συγχρηματοδοτείται από Ευρωπαϊκούς και Εθνικούς Πόρους στο πλαίσιο του «2014-2020 ENI CBC Mediterranean Programme»

Ημερομηνία και ώρα: 1η Φεβρουαρίου 2023, ώρα 9.00 π.μ.

Τόπος: Πολιτιστικό Κέντρο Αιγίου "Αλέκος Μέγαρης" (Παλαιό Νοσοκομείο)

Πρόγραμμα Σεμιναρίου

9.00 – 9.15	**Προσέλευση – Εγγραφές**
9.15 – 9:30	**Καλωσόρισμα – Χαιρετισμοί** *Εκπρόσωποι Δήμου Αιγιαλείας* *Δήμαρχος, Αντιδήμαρχος, Περιφέρεια Δυτ. Ελλάδος* *Χρυσούλα Χρηστιά, Εκπρόσωπος Δήμου Αιγιαλείας* *Γεώργιος Στεφανίδης Ομότιμος καθηγητής στο Τμήμα Πολιτικών Μηχανικών Παν. Πατρών*
9.30– 9.50	**Σύντομη παρουσίαση του Ευρωπαϊκού Έργου SEACAP4SDG** *Παναγιώτα Σαράντη, Πολιτικός Μηχανικός MSc, Επιστημονικός Συνεργάτης στο Τμήμα Πολιτικών Μηχανικών Παν. Πατρών*
9.50 – 10.15	**Παρουσίαση επιλεγμένων υπολογιστικών εργαλείων της εργαλειοθήκης SEACAP 4 SDG για την εκπόνηση ενεργειακών σχεδίων δημοσίων κτηρίων** *Δρ Γιώργος Μ. Σταυρακάκης, Εξωτερικός Συνεργάτης, Περιφερειακός Δ/ντής MES Ενεργειακή Α.Ε.*
10.15 – 11.15	**Εκπαίδευση στην χρήση υπολογιστικών εργαλείων – Μέρος Α'**
	• Χειρισμός αποθέματος κτηρίων – Εξαγωγή Τυπολογιών κτηρίων και η σημασία τους • Ενεργειακή ανάλυση – Παραγωγή βάσης δεδομένων δεικτών επίδοσης (KPIs) του κτηριακού αποθέματος • Case study *Δρ Γιώργος Μ. Σταυρακάκης, Εξωτερικός Συνεργάτης, Περιφερειακός Δ/ντής MES Ενεργειακή Α.Ε.*
11.15-11.30	**Διάλειμμα**
11.30 – 12.15	**Εκπαίδευση στην χρήση υπολογιστικών εργαλείων – Μέρος Β'**
	• Ιεράρχηση σεναρίων και παραγωγή πλάνου σταδιακής ενεργειακής αναβάθμισης κτηρίων • Ανάπτυξη σχήματος χρηματοδότησης υλοποίησης των έργων • Case study *Δρ Γιώργος Μ. Σταυρακάκης, Εξωτερικός Συνεργάτης, Περιφερειακός Δ/ντής MES Ενεργειακή Α.Ε.*
12.15-12.45	**Αξιοποίηση αποτελεσμάτων εργαλείων SEACAP4SDG στην εκπόνηση ενεργειακών σχεδίων δράσης (ΣΔΑΕΚ, ΣΕΑΚ)** *Δρ Γιώργος Μ. Σταυρακάκης, Εξωτερικός Συνεργάτης, Περιφερειακός Δ/ντής MES Ενεργειακή Α.Ε.*
12.45 – 13.00	**Ερωτήσεις – Συζήτηση**

Το έργο SEACAP 4 SDG συγχρηματοδοτείται από Ευρωπαϊκούς και Εθνικούς Πόρους στο πλαίσιο του «2014-2020 ENI CBC Mediterranean Programme»

TRAINING SEMINAR IN USING COMPUTATIONAL TOOLS FOR PUBLIC BUILDINGS ENERGY EFFICIENCY PLANS

Wednesday 1st February 2023, 9.00 am

In the horizon of achieving the goals of the National Climate and Energy Plan (NECP), which incorporates the European policies for the improvement of Energy Efficiency and the adaptation to climate-change implications, important challenges are raised specifically regarding the transition towards a low-carbon economy until the milestone year 2030. To that direction the essential role of local governments, Regions and Municipalities, is recognized, especially through their obligations in view of the ongoing legislation – indicatively, the obligation for conducting local public-buildings' energy efficiency plans in the framework of Article 6 of L.4843/2021 which transposes the EU energy efficiency directive in Greece, as well as the obligation for the development of local plan for emissions' reduction in the framework of the new law for climate L. 4936/2022. A very useful initiative for responding to both of the aforementioned challenges is the (new) Covenant of Mayors for Climate and Energy and the associated Sustainable Energy and Climate Action Plan (SECAP).

The project SEACAP 4 SDG gathers specialized computational tools developed by EU Projects aiming at facilitating planning for the improvement of energy efficiency of Public Buildings. One of the goals of the project is to **inform, familiarize and train selected Municipalities from the project participated Countries, concerning the optimal use of the special tools for the development of reliable energy efficiency plans for the public-building stock in the framework of SECAP (and/or other energy-mix plan)**.

From Greece, Municipality of Aigialeia has been selected (as a result of a special objective selection process applied in the Project). The training activity is coordinated by the Department of Civil Engineering of Patras University, partner of the Project SEACAP 4 SDG, and is implemented by its Subcontractor MES Energy SA as being the external entity in the Project. The training is allocated mainly to departments of public entities relevant to building-stock energy management and planning, decision makers and policy makers focusing on the improvement of energy efficiency, so that the target groups will gain special skills in exploiting cutting-edge tools for conducting reliable energy efficiency actions plans.

The Project SEACAP 4 SDG is funded by EU and National Sources in the framework of the «2014-2020 ENI CBC Mediterranean Programme»

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REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

SEACAP 4 SDG

Date: 1st February 2023, 9.00 am

Place: Municipality of Aigialeia - Aigio

Agenda

9.00 – 9.15	**Registration**
9.15 – 9:30	**Welcoming - Greetings** *Municipality representatives* *Prof. Yorgos Stefanidis, Department of Civil Engineering, University of Patras*
9.30– 9.50	**SEACAP 4 SDG Project presentation** *Panagiota Saranti, Civil Engineer MSc, Research Associate, Department of Civil Engineering, University of Patras*
9.50 – 10.15	**Presentation of selected computational tools from SEACAP 4 SDG toolkit for conducting public buildings energy plans** *Dr George M. Stavrakakis, External Expert, Regional Manager MES Energy S.A.*
10.15 – 11.15	**Training in computational tools – Part A**
	• Manipulation of building stock – Extracting building Typologies • Energy analysis – Production of KPIs' database for building stocks • Case study *Dr George M. Stavrakakis, External Expert, Regional Manager MES Energy S.A.*
11.15-11.30	**Break**
11.30 – 12.15	**Training in computational tools – Part B**
	• Prioritization of projects and production of a gradual energy upgrading plan • Development of financial schemes for projects' implementation • Case study *Dr George M. Stavrakakis, External Expert, Regional Manager MES Energy S.A.*
12.15-12.45	**Exploitation of SEACAP 4 SDG toolkit for conducting energy action plans (e.g. SECAP)** *Dr George M. Stavrakakis, External Expert, Regional Manager MES Energy S.A.*
12.45 – 13.00	**Questions - Discussion**

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MES ENERGY

GreenBuilding

SEACAP 4 SDG

Πρόσκληση συμμετοχής στην ημερίδα με τίτλο «Καινοτόμες λύσεις για την ενέργεια στοχεύοντας σε έξυπνες και βιώσιμες περιοχές διαβίωσης»

Εκ μέρους του Πανεπιστημίου Πατρών, καλείστε να συμμετάσχετε στην Ανοικτή Ημερίδα που συνδιοργανώνεται από τα έργα GreenBuilding και SEACAP 4 SDG στην Πάτρα, Ελλάδα. Το Πανεπιστήμιο Πατρών και συγκεκριμένα το Τμήμα Πολιτικών Μηχανικών συμμετέχουν ως εταίροι στα έργα «**Minimising Energy Consumption for Green Buildings respecting present uses and public needs (GreenBuilding)**» και «**Med SE(A)CAP integration through uniform adapted assessment and financing methods, mainly targeting buildings in education and health sectors, for sustainable development goals in a smart society (SEACAP 4 SDG)**» του Προγράμματος ENI CBC Med.

Στο πλαίσιο διάδοσης των δράσεων και των αποτελεσμάτων των έργων και της ενημέρωσης των πολιτών και όλων των ενδιαφερομένων μερών, συνδιοργανώνεται μια ημερίδα, η οποία θα λάβει χώρα στην Αγορά Αργύρη (Αγίου Ανδρέου 12) την **8η Ιουνίου 2023**, με ώρα έναρξης 10.30 π.μ..

Για την πληρέστερη κάλυψη των θεμάτων που πραγματεύονται τα προαναφερθέντα έργα, θεωρήσαμε ενδιαφέρουσα την συμμετοχή και πρόσκληση εκπροσώπων συναφών έργων και εμπειρογνωμόνων που εξειδικεύονται σε σχέδια Σχέδια Δράσης Αειφόρου Ενέργειας (ΣΔΑΕ), Ενεργειακών Αναβαθμίσεων κ.ο.κ. Οι προσκεκλημένοι θα συμπληρώσουν την ημερίδα με τις δικές του δράσεις και ιδέες και θα συζητηθούν οι συνέργειες μεταξύ αυτών. Η εκδήλωση θα ολοκληρωθεί με τις παρουσιάσεις των καινοτόμων ιδεών των φοιτητών του μαθήματος «Ευφυείς Πόλεις, Υποδομές και Μεταφορές».

- Το έργο **GreenBuilding** αποσκοπεί στη μείωση της κατανάλωσης ενέργειας και των δυσμενών περιβαλλοντικών επιπτώσεων, με χρήση ΑΠΕ και μέτρων ενεργειακής απόδοσης στα δημόσια κτήρια, δεδομένου ότι οι ανανεώσιμες πηγές ενέργειας αποτελούν φυσικό ανταγωνιστικό πλεονέκτημα για την περιοχή της Μεσογείου.
- Το έργο **SEACAP 4 SDG** στοχεύει στην εξεύρεση καινοτόμων λύσεων και εργαλείων για μείωση της κατανάλωσης ενέργειας στα δημόσια κτίρια. Αυτή η μείωση θα επιτυγχάνεται μέσω οικονομικά αποδοτικών προσεγγίσεων για την ενεργειακή αναβάθμιση, ενσωματώνοντας Σχέδια Δράσης για την Αειφόρο Πρόσβαση στην Ενέργεια και για το Κλίμα (ΣΔΑΕΚ-SEACAP), και καινοτόμους μηχανισμούς υποστήριξης των πόλεων.

Στοιχεία Επικοινωνίας

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This document has been produced with the financial assistance of the European Union under the ENI CBC Mediterranean Sea Basin Programme. The contents of this document are the sole responsibility of GreenBuilding and SEACAP4SDG consortium and can under no circumstances be regarded as reflecting the position of the European Union or the Programme management structures

GreenBuilding

SEACAP 4 SDG

Καινοτόμες λύσεις για την ενέργεια στοχεύοντας σε έξυπνες και βιώσιμες περιοχές διαβίωσης

Πρόγραμμα

Πέμπτη 8 Ιουνίου 2023
Τοποθεσία: Αγορά Αργύρη, Πάτρα

10:30 –10:45	**Άφιξη και εγγραφή των συμμετεχόντων**
10:45 - 11:00	**Καλωσόρισμα και παρουσίαση του Προγράμματος της Εκδήλωσης** *Γεώργιος Στεφανίδης, Ομότιμος Καθηγητής Τμήμα Πολιτικών Μηχανικών Πανεπιστήμιο Πατρών*
11:00 - 11:15	**Χαιρετισμοί** *Φωκίων Ζαΐμης, Αντιπεριφερειάρχης Επιχειρηματικότητας, Έρευνας και Καινοτομίας, Περιφέρεια Δυτικής Ελλάδας* *Αθανάσιος Χασιακός, Αν. Καθηγητής Τμήμα Πολιτικών Μηχανικών Πανεπιστήμιο Πατρών* *Βασίλης Χριστόπουλος, Αντιδήμαρχος Αιγιαλείας*
«Βιώσιμες δράσεις για τη ενέργεια και μέτρα αύξησης ενεργειακής αποδοτικότητας»	
11:15 - 11:30	**GreenBuilding: Συμμετοχή των χρηστών των κτηρίων στις ενεργειακές αναβαθμίσεις και παρακολούθηση της κατανάλωσης ενέργειας σε δημόσια κτήρια** *Μαρίνα Κούτα, Πολιτικός Μηχανικός MSc, Υποψήφια Διδάκτωρ, Διαχ. Ευρωπαϊκών Έργων, Πανεπιστήμιο Πατρών*
11:30 - 11:45	**Metacities Excellence Hub - Κόμβος Αριστείας Metacities** *Τάνια Πολίτη, Αν. Καθηγήτρια Πανεπιστημίου Πελοποννήσου, Επιστημονική Συνεργάτης Πανεπιστημίου Πατρών*
11:45- 12:00	**Τεχνολογίες Ψηφιακών Διδύμων στην διαχείριση του Δομημένου Περιβάλλοντος : TwinERGY - TwinAIR European projects** *Αντώνης Παπαμανώλης, Αρχιτέκτονας Μηχανικός, Ph.D.* *Μεταδιδακτορικός Ερευνητής Πανεπιστημίου Πατρών*
12:00- 12:10	**Ενεργειακός σχεδιασμός Μεταφορών και Δικτύων Κτηρίων σε αστικές περιοχές εντός της κυκλικής οικονομίας** *Χάρης Ξιάρχης, Πολιτικός Μηχανικός*
12:10 - 12:30	**Διάλειμμα**

Το έργο GreenBuilding και το έργο SEACAP 4 SDG συγχρηματοδούνται από Ευρωπαϊκούς και Εθνικούς Πόρους στο πλαίσιο του «2014-2020 ENI CBC Mediterranean Programme»

UNIVERSITY OF PATRAS
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«Αναπτύσσοντας Έξυπνες Κοινότητες για νέους: Αειφορία, Καινοτομία και Μετάβαση σε Βιώσιμη Ενέργεια»	
12:30 - 12:45	**SEACAP 4 SDG: Καινοτόμες προσεγγίσεις για την ενεργειακή αναβάθμιση δημόσιων κτιρίων και την αειφόρο πρόσβαση στην ενέργεια** *Παναγιώτα Σαράντη, Πολιτικός Μηχανικός MSc, Υποψήφια Διδάκτωρ, Διαχ. Ευρωπαϊκών Έργων, Πανεπιστήμιο Πατρών*
12:45 - 12:55	**Αειφόρος Ανάπτυξη και Ενεργειακή Αναβάθμιση: το Έργο FAME ROAD και η Εμπειρία του Δήμου Αιγιαλείας στο Έργο SEACAP 4 SDG** *Χρυσούλα Χρηστιά, Δήμος Αιγιαλείας*
12:55 – 13:00	***«Ευφυείς Πόλεις, Υποδομές και Μεταφορές»*** *Γεώργιος Στεφανίδης, Ομότιμος Καθηγητής Τμήμα Πολιτικών Μηχανικών Πανεπιστήμιο Πατρών* *Αθανάσιος Χασιακός, Αν. Καθηγητής Τμήμα Πολιτικών Μηχανικών Πανεπιστήμιο Πατρών*
13:00 – 13:10	**Παρουσιάσεις Φοιτητών Α' Μέρος** • *FINDSPACE, Αθανάσιος Γκουλιούμης* • *Ανάπτυξη Εφαρμογής για εύκολη κυκλοφορία ατόμων με κινητική αναπηρία, Αθανάσιος- Γεώργιος Χριστάκης* • *Έξυπνοι χώροι στάθμευσης, Θοδωρής Γεωργαλλής*
13:10 – 13:20	**Ευφυή συστήματα μετακίνησης, ασφάλειας και απόκρισης για άτομα μειωμένης κινητικότητας σε φυσικές καταστροφές** *Ειρήνη Ρουμελιώτη, Φοιτήτρια Τμήμα Πολικών Μηχανικών*
13:20 – 13:30	**Παρουσιάσεις Φοιτητών Β' Μέρος** • *Φυσικές καταστροφές, σεισμοί και τρόποι αντιμετώπισης, Κωνσταντίνος Μαρκεζίνης* • *Έξυπνες Προπέλες, Ιωάννα Λουμάκη* • *Ασφαλής Μετακίνηση στην πόλη για άτομα με προβλήματα όρασης- Έξυπνο Σύστημα Διαβάσεων, Στέργιος Ρουμελιώτης*
13:30 – 13:45	**Κλείσιμο εκδήλωσης**

Συντονισμός: Παναγιώτα Σαράντη και Μαρίνα Κούτα

Το έργο GreenBuilding και το έργο SEACAP 4 SDG συγχρηματοδούνται από Ευρωπαϊκούς και Εθνικούς Πόρους στο πλαίσιο του «2014-2020 ENI CBC Mediterranean Programme»

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REGIONE AUTONOMA DELLA SARDEGNA

SEACAP 4 SDG

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CERTIFICATE OF ATTENDANCE

This certificate is presented to

XXXXXX

for successfully completing the Local Living Lab training in Greece of the SEACAP 4 SDG project on the 1st February 2023.

This training provided an overview of SEACAPs, Living Labs, financing mechanisms and the effectiveness of building energy efficiency and renewable energy measures.

Yorgos Stephanedes
Professor emeritus
University of Patras

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EE Innovative Solutions Living Lab in Greece
Computational Tools for Public Buildings Energy Efficiency Plans

Wednesday, February 1st 2023
Aigio Cultural Center "Alekos Megaris"

LIST OF PARTICIPANTS

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SEACAP 4 SDG

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SEACAP 4 SDG

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