

## Paving the way for Europe's new EPC

The TIMEPAC Academy is a dedicated space committed to offering comprehensive education, training, and resources tailored for professionals engaged in the building energy sector. With a specific emphasis on building assessment and certification, our platform equips individuals with the necessary knowledge and skills to excel in evaluating and certifying building energy performance. Through a range of specialized webinars, courses, and resources, the TIMEPAC Academy empowers professionals to play a pivotal role in advancing energy efficiency and sustainability within the built environment.

### Webinar series

The purpose of the TIMEPAC webinars series is twofold:

- To share with participants the project findings on the enhancement of EPC in line with the proposals contained in the upcoming EPBD recast.
- To introduce the topics that will be covered in the in-class training with a focus on the applications of enhanced EPCs.

The six webinars scheduled for February-March 2024 will address distinct, yet interconnected topics centred around the application of future scenarios of energy performance assessment outlined in the project.

More information about these scenarios can be found at the [TIMEPAC website](#) (Deliverables 2.X).

### In-class training

Following the webinars, participants will participate in in-class training hosted at partner organizations' premises. These sessions will further explore the topics covered in the webinars, providing a comprehensive understanding of the various themes. This will be accomplished through a blend of traditional lectures and interactive exercises designed to enhance comprehension and encourage practical application.



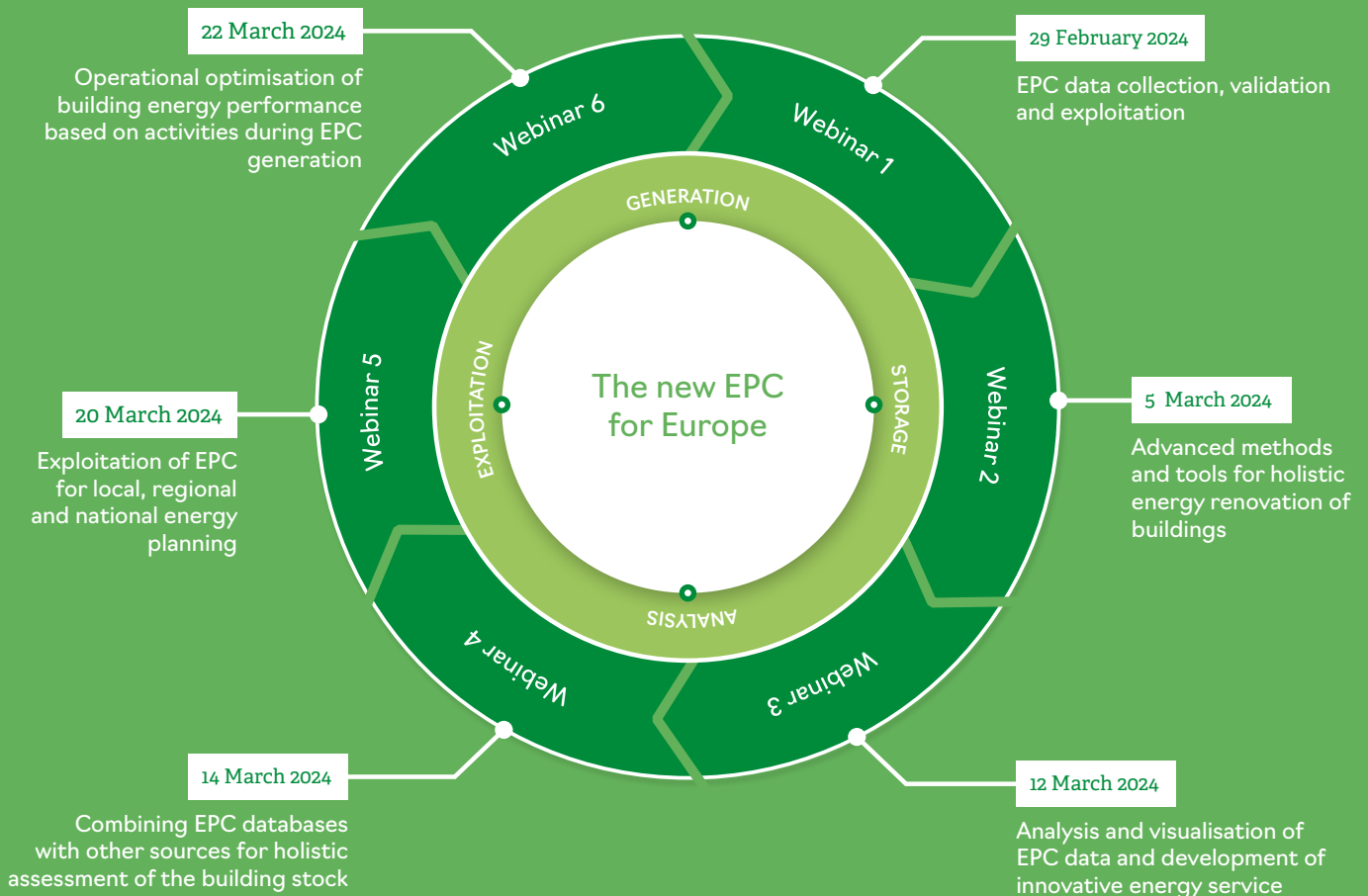
The TIMEPAC Academy training programme is aimed at but not limited to: certifiers, energy auditors, architects, engineers, energy managers, facility managers, energy agencies and local public authorities.

By attending, you can enhance your understanding of energy-saving techniques, smart readiness, sustainability principles, and regulatory requirements related to building assessment and certification.



## Webinar series

The TIMEPAC vision is to facilitate a seamless flow of data throughout all stages of energy performance certification – generation, storage, analysis, and exploitation – enabling a more efficient EPC, as well as the deployment of new services to exploit them. The webinars will provide insights into the improvements that can be achieved at each stage of the process and their interconnections.



All our training sessions are offered free of charge.  
You can register at [academy.timepac.eu](https://academy.timepac.eu)

By participating in our training programme, webinars and courses, you will receive a TIMEPAC certificate as recognition of your attendance.



## Webinar series

# 1. EPC data collection, validation and exploitation

**Aimed at:** certifiers, energy auditors, architects, engineers, energy managers, facility managers, and local public authorities

**Contact:**  
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In the context of European climate-neutrality and sustainability goals, energy performance certification is expected to become an effective assessment methodology for systematically analyzing and enhancing the energy efficiency of buildings over their successive renovation stages.

This webinar aims to explore the synergies between energy performance certification, technical system inspections, and energy auditing. Our objective is to streamline the process of generating EPCs – including their generation from BIM models – by identifying the essential elements for efficient data extraction from various sources, ensuring their

accuracy and reliability. We will delve into practical strategies, gathering and validating data, starting at the desktop, with a comprehensive analysis of drawings, inspection reports, and energy audits. This information will be complemented with data obtained during on-site visits, such as renovation status, size, construction materials, and insulation levels. Additionally, we will address the importance of capturing additional information about HVAC systems, lighting, appliances, occupancy rates, and space utilization patterns to assess the actual performance of buildings. The webinar will also feature insights into the TIMEPAC Code of Conduct for Smart Readiness and Sustainability Rating.

## Programme

Thursday, 29 February 2024, 10:00 - 12:00 CET

### Welcome

Stane Merše (JSI)

### TIMEPAC vision and motivation

Boris Sučić (JSI)

### Tips for efficient EPC data collection, validation and exploitation

Ilja Drmač (EIHP)

### Data extraction from the multiple sources

Álvaro Sicilia (La Salle-URL)

### Quality assessment of the EPC database contents

Mamak P. Tootkaboni (POLITO)

### Key elements of proper planning and site visit

Marko Pečkaj (JSI)

### BIM models to generate, validate and exploit EPC data

Ane Ferreiro (CYPE)

### Calculating Smart Readiness Indicator

Boris Sučić (JSI)

### Calculating sustainability indicators based on a building's energy performance

Gašper Stegnar (JSI)

### Discussion and closing remarks based on a building's energy performance

Boris Sučić (JSI)

#### Organizers



## Webinar series

## 2. Advanced methods and tools for holistic energy renovation of buildings

**Aimed at:** architects, engineers, certifiers, and local public authorities

**Contact:**  
benjamin.gonzalez@cype.com

The upcoming EPBD recast recommends that architects and planners utilize 3D-based modelling and simulation technologies throughout the planning, design, construction, and renovation phases of residential areas to enhance and assess building energy performance. Integrating BIM models with simulation tools can improve the assessment of building performance and support renovation efforts.

These digital technologies are particularly beneficial for creating building renovation passports and digital building logbooks, while incorporating smart

readiness indicators and life-cycle global warming in building performance simulations. Assessing building performance with these tools enables a more comprehensive evaluation over time and facilitates the transition from one-off certification to continuous performance assessment.

This webinar will offer insights into using BIM models to generate EPCs for both new buildings and successive renovation stages throughout their lifespan. Practical cases will demonstrate the capabilities of available technologies.

### Programme

Tuesday, 5 March 2024, 10:00 - 12:00 CET

#### Welcome

Benjamín González (CYPE)

#### Challenges of the new Energy Performance of Buildings Directive

Erik Potočar (MOPE)

#### Advantages of creating a BIM model for building renovation

Benjamín González (CYPE)

#### How to use the 3D models and the EPC in order to analyse energy savings

Alice Gorrino (Edilclima)

#### Generating enhanced EPC with BIM data

Álvaro Sicilia (La Salle-URL)

#### Next steps for renovation passports: focus on data and tools

Susanne Geissler (SERA)

#### Closing

Benjamín González (CYPE)

#### Organizers



The consortium has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No. 101033819 as part of the call "LC-SC3-B4E-4-2020 - Next-generation of Energy Performance Assessment and Certification".

## Webinar series

## 3. Analysis and visualisation of EPC data and development of innovative energy services

**Aimed at:** certifiers, energy auditors, architects, engineers, energy managers and facility managers

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The upcoming recast of the EPBD includes various measures to facilitate targeted financing for investments in the residential building sector and to gradually introduce minimum energy performance standards for non-residential buildings. Their ultimate aim is to decarbonize the building stock by increasing renovation and improving building energy performance. Moreover, these initiatives should lead to increased reliability, quality, and digitalization of Energy Performance Certificates (EPCs), with energy performance classes being established based on common criteria.

In the context of the TIMEPAC project, EPCs are not perceived as mere paper-based documents; rather, they are envisioned as digital repositories of integrated information. However, the current EPCs predominantly cater for end-users, offering limited

and often unreliable technical data. Consequently, the enhanced EPC should serve multiple functions, evolving into a central document accessible to various stakeholders, including end-users, energy certifiers, and local, regional, and national authorities. Thus, the next-generation energy certificate should be tailored to specific audiences and intended purposes.

In this webinar, we will delve into the analysis and visualization of EPC data and its utilization in the development of innovative energy services. Our objective is to equip participants with the knowledge and skills necessary to harness EPC data for the preparation of deep energy renovation projects. Additionally, the webinar will offer insights into monitoring and verifying energy savings, including the potential role of EPCs in this process.

## Programme

Tuesday, 12 March 2024, 10:00 - 12:00 CET

### Welcome

Drazen Jaksic (EIHP)

### Key elements of BIM for analysis and visualization of EPC data

Benjamín González (CYPE)

### Dynamic simulation of energy demand

Ružica Jurjević (EIHP)

### Comparison of the modelled and real consumption data

Franz Bianco Mauthe Degerfeld (POLITO)

### The concept of renovation passport

Susanne Geissler (SERA)

### Identification of cost-optimal investments and creation of renovation scenarios

Iosifina Petri (CEA)

### How to make an EPC a dynamic tool for verification of energy savings

Ilja Drmač (EIHP)

### Reporting, monitoring and verification of energy savings

Boris Sučić (JSI)

### Discussion and closing remarks

Ilja Drmač (EIHP)

Organizers



SERA



Jožef Stefan Institute, Ljubljana, Slovenia  
Energy Efficiency Centre



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## Webinar series

## 4. Combining EPC databases with other sources for holistic assessment of the building stock

**Aimed at:** certifiers, energy auditors, architects, engineers, energy managers and facility managers

**Contact:**  
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The upcoming recast of the Energy Performance of Buildings Directive (EPBD) outlines a pathway to achieve a decarbonised building stock by 2050. One of its objectives is that new buildings achieve zero emission status by 2030, compelling Member States to develop national plans for reducing primary energy consumption. In this context, energy performance certificates (EPCs) can play an instrumental role in assessing building performance and implementing large scale rehabilitation programmes.

During this webinar, we will explore the potential of utilizing open data from EPCs in Catalonia to enhance their effectiveness as tools for building renovation. We will delve into how the TIMEPAC project has analysed information from this registry,

identifying unreliable data and grouping buildings based on characteristics such as climatic zone, use, and year of construction in order to create representative archetypes of the building stock. In the absence of data on all buildings, these archetypes serve as a valuable tool to extrapolate their characteristics to the building stock. This enables the assessment of the impact of large-scale rehabilitation measures, ensuring compliance with the EPBD objectives. Additionally, the integration of EPC databases with other sources can facilitate a comprehensive analysis of the built environment, complementing EPC data with information such as population statistics, renewable energy production, transport networks, and public amenities. Insights about this integration will also be provided during the sessions.

### Programme

Thursday, 14 March 2024, 10:00 - 12:00 CET

#### Welcome

Leandro Madrazo (La Salle-URL)

#### Challenges of the new energy performance of buildings directive

Silvio De Nigris (Regione Piemonte)

#### Querying open data about EPCs

Ainhoa Mata (ICAEN)

#### Quality assessment of the EPC database

Álvaro Sicilia (La Salle-URL)  
Ainhoa Mata (ICAEN)

#### EPC data combination for multi-dimensional analysis

Leandro Madrazo, Adirane Calvo  
(La Salle-URL)

#### Advanced analysis of EPC data as a support tool for local, regional and national energy planning

Álvaro Sicilia (La Salle-URL)

#### Closing

Leandro Madrazo (La Salle-URL)

Organizers

laSalle  
UNIVERSITAT RAMON LLULL

REGIONE  
PIEMONTE

Generalitat de Catalunya  
Institut Català d'Energia



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## Webinar series

## 5. Exploitation of EPC for local, regional and national energy planning

**Aimed at:** general building experts, certifiers, local public authorities, energy agencies

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The upcoming recast of the Energy Performance of Buildings Directive (EPBD) introduces the national building renovation plan to support the decarbonisation of the European building stock by 2050. This requires data and models to rank the overall energy and environmental performance of the building stock. Archetypes that representative of building clusters play a crucial role in the development of a national building renovation plan, because they encapsulate the heterogeneity of the building stock characteristics. By exploiting bottom-up energy models, the archetype-based approach enhances accuracy in urban energy modelling and, in the same time, reduces model complexity. The content of Energy Performance Certificate (EPC) databases, properly processed to remove erroneous data, represents a core source of information to

create the archetypes, to analyse the performance status of the building stock, and to assess the effectiveness of renovation strategies.

This webinar explores the potential to use EPC databases to develop an archetype-based urban building energy model, as devised in the TIMEPAC project. The webinar offers comprehensive training in the statistical analysis of the EPC database, with the goal of leveraging it for benchmarking initiatives. Examples of energy renovation scenarios both at the individual building scale (e.g., by exploiting the information provided in the Building Renovation Passport), and at broader building stock levels will be provided. The training materials cover the workflow of statistical analysis on EPC databases, quality control activities for EPC data, and the development of building stock models.

### Programme

Wednesday, 20 March 2024 10:00 - 12:00 CET

#### Welcome

Vincenzo Corrado (POLITO)

#### Introduction to EU legislation related to long-term renovation strategies of the building stock

Erik Potočar (MEPA)

#### Identification and collection of relevant data from EPC databases to map the energy status of the building stock

Álvaro Sicilia (La Salle-URL)

#### Techniques and control activities on the EPC data to evaluate the reliability of certificate information

Mamak P. Tootkaboni (POLITO)

#### Data clustering techniques to characterize representative buildings

Matteo Piro (POLITO)

#### Bottom-up energy model using EPC data as a support tool to assess the energy performance of building stocks

Ilaria Ballarini (POLITO)

#### Making use of renovation roadmaps: from the building to the building stock exploiting the renovation passport data

Susanne Geissler (SERA)

#### Energy saving assessment in building stock deep renovation scenarios through EPC data

Vincenzo Corrado (POLITO)

#### Closing

Ilaria Ballarini (POLITO)

#### Organizers



## Webinar series

## 6. Operational optimisation of building energy performance based on activities during EPC generation

**Aimed at:** certifiers, energy auditors, architects, engineers, energy managers and facility managers

**Contact:**  
boris.sucic@ijs.si

The new EPBD recast aims to increase the rate of renovations of energy-inefficient buildings and improve information on energy performance. Member States shall ensure that energy performance certificates (EPCs) are affordable and issued by independent experts following an on-site visit.

In the context of the TIMEPAC project, on-site visit is essential element of the EPC generation process and must be properly planned. During the on-site visit, the certifier should visually inspect the condition of the equipment, systems, and living/working spaces. During this webinar, we will explore how to combine the on-site visit with re-commissioning activities. Our goal is to empower participants with the necessary knowledge and skills to provide cost-

effective optimization advice based on activities during EPC generation. Re-commissioning (Re-Co) is the expression used to describe an energy-system operation-optimization service in existing buildings. It focuses on improving the overall performance of a building by investigating and improving how systems operate together. It consists of a rapid energy audit of the buildings, focused on a check and re-set of the energy system's operating parameters. Even though they might give rise to some additional costs, Re-Co services can be carried out successfully and be a cost-effective part of the EPC-generation process because they will generate additional benefits for the owners and building users. The webinar will also provide insights into the monitoring and targeting techniques and comparing the existing with the expected performance.

### Programme

Friday, 22 March 10:00 - 12:00 CET

#### Welcome

Stane Merše (JSI)

#### Re-Commissioning: Creating awareness and common understanding

Marko Pečkaj (JSI)

#### Distinguishing Re-Co energy audit and retrofits

Boris Sučić (JSI)

#### Re-Co in the building life cycle

Gašper Stegnar (JSI)

#### Re-Co and EPC

Gašper Stegnar (JSI)

#### Planning Re-Co activities

Marko Pečkaj (JSI)

#### Re-Co and BACS

Boris Sučić (JSI)

#### Re-Co and HVAC

Vincenzo Corrado (POLITO)

#### Re-Co and electrical lighting

Matej Pahor (GOLEA)

#### Discussion and closing remarks

Boris Sučić (JSI)

#### Organizers

