

Formación presencial

Combinación de bases de datos de certificados energéticos con otras fuentes para facilitar la evaluación integral del parque edificado

La Salle-Ramon Llull University
ICAEN

7 y 9 Mayo 2024



TIMEPAC Academy

The TIMEPAC Academy provides training, and resources tailored specifically for professionals engaged in building assessment and certification. Our platform is dedicated to equipping individuals with the essential knowledge and skills needed to transition from one-time certifications to comprehensive assessments of building performance throughout its entire lifespan

Watch the recordings and download the presentations from the six webinars
In-class training will be conducted during April and May. Check timetable on this website



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Training activities

<https://academy.timepac.eu>

Training activities

Coming

<p>04/05 Barcelona, Spain</p> <p>Combining EPC databases with other sources for holistic assessment of the building...</p> <p>The primary goal of the Energy Performance of Buildings Directive (EPBD) is to reduce the energy consumption of buildings. This course provides a practical approach to achieve a Sustainable Building Index (SBI).</p> <p>Organiser: La Salle VUL, ICAEN</p> <p>Keywords: Local public authorities, architects, engineers and facility managers</p> <p>View more</p>	<p>04/05 Ljubljana, Slovenia</p> <p>EPC data collection, validation and exploitation</p> <p>Energy Performance Certificate (EPC) reports play a significant role in the Sustainable Energy for Europe (SE4E) project. This course provides a practical approach to achieve a Sustainable Building Index (SBI).</p> <p>Organiser: ICAEN</p> <p>Keywords: Certified energy auditors, architects, engineers, energy managers, facility managers and local public authorities</p> <p>View more</p>	<p>05/05 Barcelona, Spain</p> <p>Advanced methods and tools for energy rehabilitation of buildings from a holistic...</p> <p>This course provides an introduction to methods and tools for building performance assessment and building renovation strategies by covering the</p> <p>Organiser: CPPE, ICAEN, La Salle</p> <p>Keywords: Architects, engineers, energy auditors and facility managers</p> <p>View more</p>
<p>08/05 Valencia, Spain</p> <p>Operational optimisation of building energy performance based on activities during EP...</p> <p>The primary goal of the energy performance assessment of buildings is to provide energy managers with the necessary tools to support the assessment.</p> <p>Organiser: ICAEN</p> <p>Keywords: Certified energy auditors, architects, engineers, energy managers and facility managers</p> <p>View more</p>	<p>08/05 Ljubljana, Slovenia</p> <p>Exploitation of EPC for local, regional and national energy planning</p> <p>The Energy Performance Certificate (EPC) Database serves as a valuable tool for understanding the energy efficiency of...</p> <p>Organiser: PABLO</p> <p>Keywords: General building experts, certifiers, local public authorities, energy managers</p> <p>View more</p>	

Closed

<p>20/04 Online</p> <p>Webinar 1. EPC data collection, validation and exploitation</p> <p>The primary goal of the Energy Performance of Buildings Directive (EPBD) is to reduce the energy consumption of buildings. This course provides a practical approach to achieve a Sustainable Building Index (SBI).</p> <p>Organiser: ICAEN</p> <p>Keywords: Certified energy auditors, architects, engineers, energy managers, facility managers and local public authorities</p> <p>View more</p>	<p>06/04 Online</p> <p>Webinar 2. Advanced methods and tools for holistic energy renovation of buildings</p> <p>The primary goal of the Energy Performance of Buildings Directive (EPBD) is to reduce the energy consumption of buildings. This course provides a practical approach to achieve a Sustainable Building Index (SBI).</p> <p>Organiser: CPPE</p> <p>Keywords: Architects, engineers, energy auditors, engineers, energy managers and facility managers</p> <p>View more</p>	<p>15/04 Online</p> <p>Webinar 3. Analysis and visualisation of EPC data and development of innovative...</p> <p>The primary goal of the Energy Performance of Buildings Directive (EPBD) is to reduce the energy consumption of buildings. This course provides a practical approach to achieve a Sustainable Building Index (SBI).</p> <p>Organiser: ICAEN</p> <p>Keywords: Certified energy auditors, architects, engineers, energy managers and facility managers</p> <p>View more</p>
<p>14/04 Online</p> <p>Webinar 4. Combining EPC databases with other sources for holistic assessment of B...</p> <p>The primary goal of the Energy Performance of Buildings Directive (EPBD) is to reduce the energy consumption of buildings. This course provides a practical approach to achieve a Sustainable Building Index (SBI).</p> <p>Organiser: La Salle VUL, ICAEN</p> <p>Keywords: Architects, engineers, energy auditors, and local public authorities</p> <p>View more</p>	<p>06/04 Online</p> <p>Webinar 5. Exploitation of EPC for local, regional and national energy planning</p> <p>The primary goal of the Energy Performance of Buildings Directive (EPBD) is to reduce the energy consumption of buildings. This course provides a practical approach to achieve a Sustainable Building Index (SBI).</p> <p>Organiser: PABLO</p> <p>Keywords: General building experts, certifiers, local public authorities, energy managers</p> <p>View more</p>	<p>05/04 Online</p> <p>Webinar 6. Operational optimisation of building energy performance based o...</p> <p>The primary goal of the Energy Performance of Buildings Directive (EPBD) is to reduce the energy consumption of buildings. This course provides a practical approach to achieve a Sustainable Building Index (SBI).</p> <p>Organiser: ICAEN</p> <p>Keywords: Certified energy auditors, architects, engineers, energy managers and facility managers</p> <p>View more</p>



La Salle-URL
Leandro Madrazo



La Salle-URL
Álvaro Sicilia



La Salle-URL
Adirane Calvo



Catalan Institute for
Energy
Ainhoa Mata

Martes, 7 de mayo de 2024, de 9:30 a 14:00

- 9:30 – 9:45 **Introducción a TIMEPAC**
Leandro Madrazo (La Salle-URL)
- 9:45 – 10:30 **Retos de la nueva Directiva sobre el eficiencia energética de edificios**
Ainhoa Mata (ICAEN)
- 10:30 – 11:30 **Consultas de datos abiertos sobre los certificados de eficiencia energética**
Ainhoa Mata (ICAEN)
- 11:30 – 12:00 **Pausa café**
- 12:00 – 13:00 **Evaluación de calidad de las bases de datos de certificados**
Álvaro Sicilia (La Salle-URL), Ainhoa Mata (ICAEN)
- 13:00 – 13:50 **Analizando el parque de edificios de tu municipio**
Ainhoa Mata (ICAEN)
- 13:50 – 14:00 **Resumen de la jornada**

Jueves, 9 de mayo de 2024, de 9:30 a 14:00

9:30 – 11:30 **Evaluación del rendimiento energético del parque de edificios con datos abiertos**
Ainhoa Mata (ICAEN)

11:30 – 12:00 **Pausa café**

12:00 – 13:00 **Combinación de datos de los certificados para el análisis multidimensional del parque de edificios**
Leandro Madrazo, Álvaro Sicilia, Adirane Calvo
(La Salle-URL)

13:00 – 13:50 **Análisis avanzado de los datos de certificados para crear planes de renovación de edificios**
Álvaro Sicilia (La Salle-URL)

13:50 – 14:00 **Clausura**

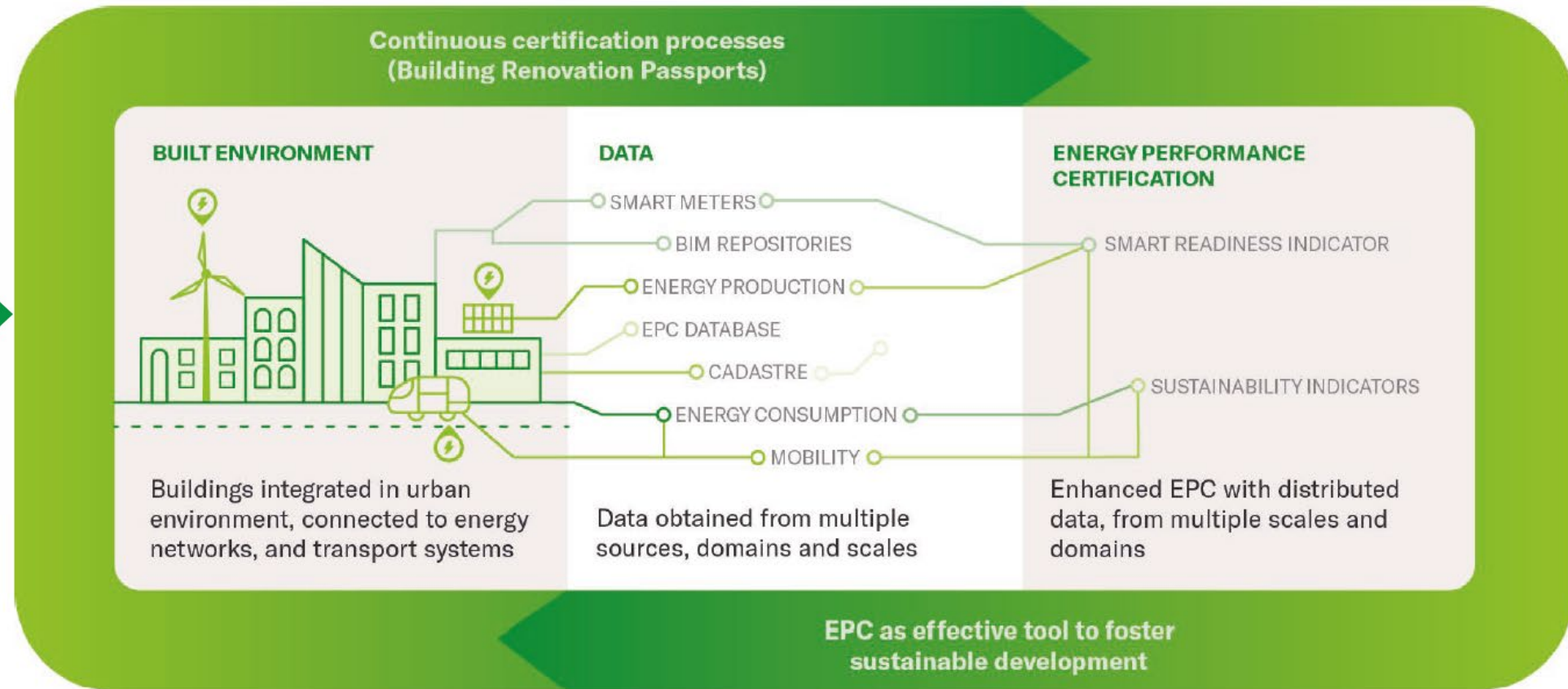
Objetivos del curso

- Explorar el potencial de utilizar la información recogida en la base de datos de certificados energéticos gestionada por el ICAEN para crear planes de renovación de edificios a gran escala.
- Introducción a los procedimientos desarrollados en el proyecto TIMEPAC para analizar el contenido de esta base de datos, identificando los datos poco fiables y agrupando los edificios en función de sus características, zona climática, uso y año de construcción, con el fin de crear arquetipos representativos del parque.
- Creación de planes de renovación que integren los datos de los certificados con otros datos socioeconómicos y urbanísticos.

TIMEPAC A holistic approach to EPC (2019-)

From one-off certification of an isolated building with a focus on energy performance....

...to a comprehensive assessment of the building performance over its lifetime



EPBD 2024 recast

“The energy performance certificate should also provide information on its **primary energy and final consumption, energy needs, renewable energy production, greenhouse gas emissions, and optionally on its indoor environmental quality, as well as the life-cycle GWP, if available. The energy performance certificate should contain recommendations for the improvement of the energy performance of the building.**”

Smart
Readiness
Indicator
(SRI)

Level(s)

Renovation
Passport

A new ecosystem for building assessment and certification

Not a certification scheme, but a framework (common language and set of indicators) to measure the environmental, social, and economic aspects of building sustainability

Level(s)

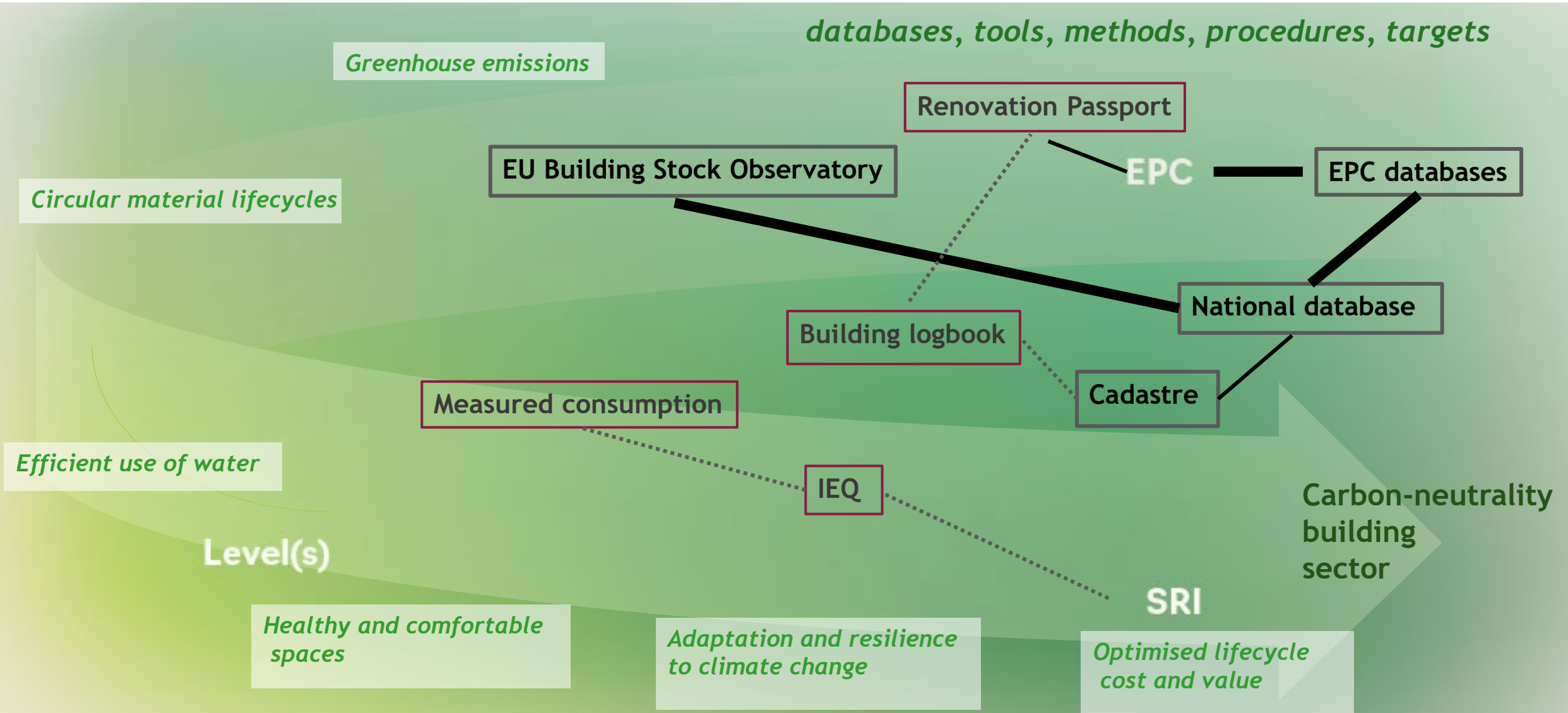
EPC

A certificate stating the energy efficiency based on primary energy use for heating, cooling, ventilation, domestic hot water and lighting

A certificate of the capabilities of the building or building unit to adapt its operation to the needs of the occupants and the grid, and to improve its energy efficiency and overall in-use performance.

SRI

A new ecosystem for building assessment and certification



EPBD recast (Art. 19)

National databases for energy performance of buildings should be set up, and the information contained therein should be transferred to the EU Building Stock Observatory.

Member States shall ensure that all energy performance certificates issued are uploaded to the database for energy performance of building referred to in Article 19.

Each Member State shall set up a national database for energy performance of buildings which allows data to be gathered on the energy performance of individual buildings and on the overall energy performance of the national building stock. Such databases may consist of a set of interconnected databases.

The database shall allow data to be gathered from all relevant sources related to energy performance certificates, inspections, the building renovation passport, the smart readiness indicator and the calculated or metered energy consumption of the buildings covered.

Member States shall ensure that the national database for energy performance of buildings is interoperable and integrated with other administrative databases containing information on buildings, such as the national building cadastre or land registry and digital building logbooks.

In order to populate the database, building typologies may also be gathered. Data may also be gathered and stored on both operational and embodied emissions and overall life-cycle GWP.

EPC - information

Primary energy

Final energy consumption

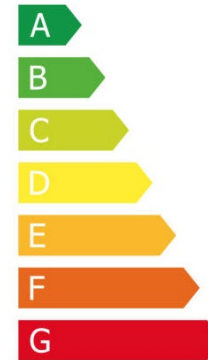
Energy needs

RES production

Greenhouse emissions

[Indoor Environmental Quality]

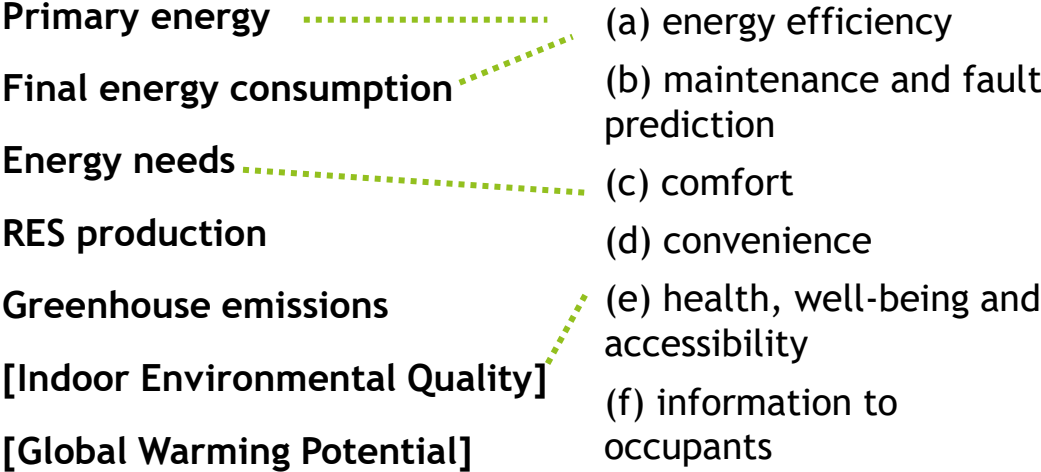
[Global Warming Potential]



energy performance certificate: a certificate recognised by a Member State or by a legal person designated by it, which indicates the energy performance of a building or building unit, calculated according to a methodology adopted in accordance with Article 4

EPC - information

SRI - impact criteria



EPC label included in the SRI assessment

The **SRI rates the smart readiness of buildings** (or building units) in their capability to perform 3 key functionalities:

- optimise energy efficiency and overall in-use performance
- adapt their operation to the needs of the occupant
- adapt to signals from the grid (for example energy flexibility)

Level(s) - indicators

EPC - information

SRI - impact criteria

1. Greenhouse gas emissions along a building's life cycle

- 1.1 Use stage energy performance (kWh/m²/yr)
- 1.2 Life cycle Global Warming Potential (CO₂ eq./m²/yr)

2. Resource efficient and circular material life cycles

- 2.1 Bill of quantities, materials and lifespans
- 2.2 Construction & Demolition waste and materials
- 2.3 Design for adaptability and renovation
- 2.4 Design for deconstruction, reuse and recycling

3. Efficient use of water resources

- 3.1 Use stage water consumption (m³/occupant/yr)

4. Healthy and comfortable spaces

- 4.1 Indoor air quality
- 4.2 Time outside of thermal comfort range
- 4.3 Lighting and visual comfort
- 4.4 Acoustics and protection against noise

5. Adaptation and resilience to climate change

- 5.1 Protection of occupier health and thermal comfort
- 5.2 Increased risk of extreme weather
- 5.3 Sustainable drainage

6. Optimised life cycle cost and value

- 6.1 Life cycle costs (€/m²/yr)
- 6.2 Value creation and risk factors

Primary energy

Final energy consumption

Energy needs

RES production

Greenhouse emissions

[Indoor Environmental Quality]

[Global Warming Potential]

(a) energy efficiency

(b) maintenance and fault prediction

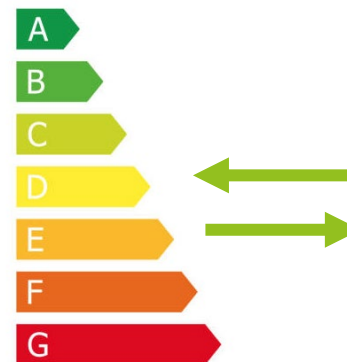
(c) comfort

(d) convenience

(e) health, well-being and accessibility

(f) information to occupants

(g) energy flexibility and storage



EPC label included in the SRI assessment

Level(s) provides a common language for assessing and reporting on the sustainability performance of buildings. It is a simple entry point for applying circular economy principles in our built environment. Level(s) offers an extensively tested system for measuring and supporting improvements, from design to end of life. It can be applied to residential buildings or offices.

Level(s) - indicators

- 1.1 Use stage energy performance (kWh/m²/yr)
- 1.2 Life cycle Global Warming Potential (CO₂ eq./m²/yr)
- 2.1 Bill of quantities, materials and lifespans
- 2.2 Construction & Demolition waste and materials
- 2.3 Design for adaptability and renovation
- 2.4 Design for deconstruction, reuse and recycling
- 3.1 Use stage water consumption (m³/occupant/yr)
- 4.1 Indoor air quality
- 4.2 Time outside of thermal comfort range
- 4.3 Lighting and visual comfort
- 4.4 Acoustics and protection against noise
- 5.1 Protection of occupier health and thermal comfort
- 5.2 Increased risk of extreme weather
- 5.3 Sustainable drainage

EPC - information

- Primary energy
- Final energy consumption
- Energy needs
- RES production
- Greenhouse emissions
- [Indoor Environmental Quality]
- [Global Warming Potential]

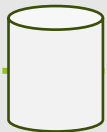
SRI - impact criteria

- (a) energy efficiency
- (b) maintenance and fault prediction
- (c) comfort
- (d) convenience
- (e) health, well-being and accessibility
- (f) information to occupants
- (g) energy flexibility and storage

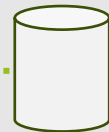
Interconnectivity of assessment and certification tools

Interoperability of databases

Cadastre



Material properties



Distributed data sources

Air quality



EPC



Energy consumption



EPC seamless data flow

User-friendly environments to access EPC databases, interlinked to other data repositories (BIM, cadastre)

Automatic storage of the certificate in BIM and EPC databases

Analysis of EPC repositories to identify potential areas for building renovation

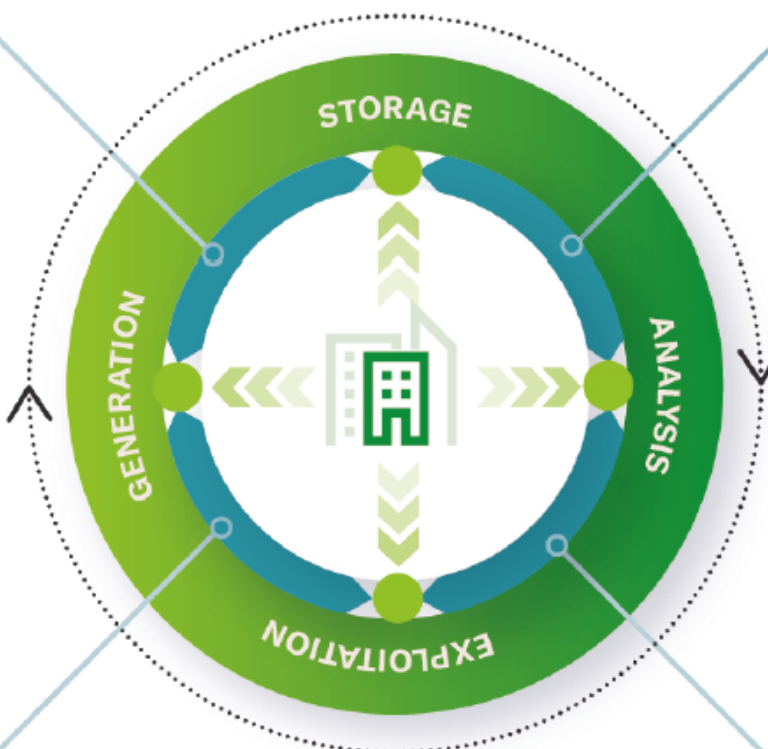
Enhanced EPC schemes with SRI and sustainability indicators, generated from BIM models

Procedures and tools for large scale statistical analysis of EPC databases

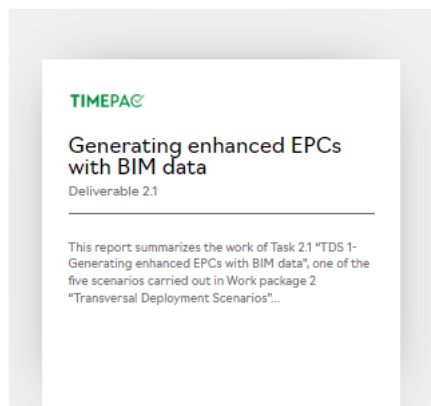
BIM models used to generate EPC to be used in future renovation projects

Identifying customers for building components and equipment in areas with a potential for renovation

New services for professional certifiers, ESCOs, consultants, building companies, to exploit EPC data in combination with other data sources



Transversal Deployment Scenarios (reports)



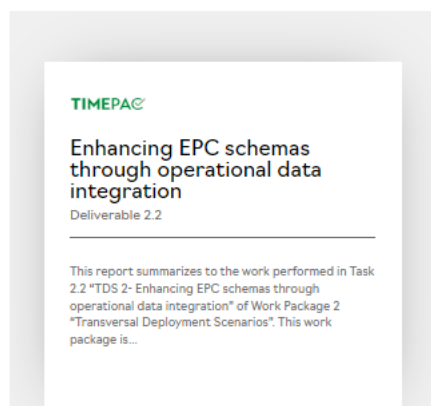
Generating enhanced EPCs with BIM data

Deliverable 2.1

📅 Published November 16, 2023

This report summarizes the work of Task 2.1 "TDS 1- Generating enhanced EPCs with BIM data", one of the five scenarios carried out in Work package 2 "Transversal Deployment Scenarios" (TDS). This work package is concerned with the creation of future scenarios with the aim...

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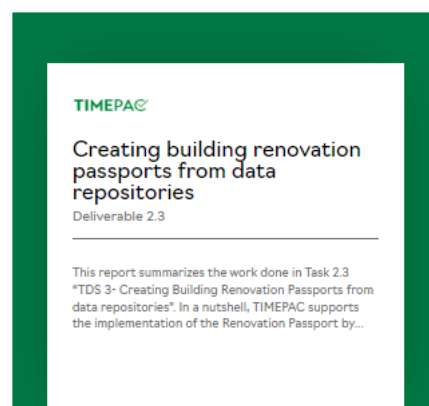
Enhancing EPC schemas through operational data integration

Deliverable 2.2

📅 Published November 16, 2023

This report summarizes to the work performed in Task 2.2 "TDS 2- Enhancing EPC schemas through operational data integration" of Work Package 2 "Transversal Deployment Scenarios". This work package is concerned with the creation of future scenarios with the aim of deploying and delivering new...

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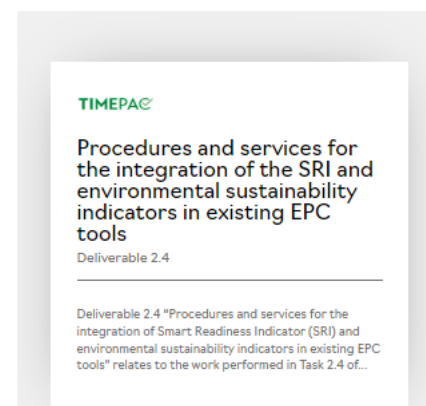
Creating building renovation passports from data repositories

Deliverable 2.3

📅 Published November 13, 2023

This report summarizes the work done in Task 2.3 "TDS 3- Creating Building Renovation Passports from data repositories". In a nutshell, TIMEPAC supports the implementation of the Renovation Passport by assessing renovation projects in the partner countries regarding procedures how to make use of data...

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Procedures and services for the integration of the SRI and environmental sustainability indicators in existing EPC tools

Deliverable 2.4

📅 Published November 16, 2023

Deliverable 2.4 "Procedures and services for the integration of Smart Readiness Indicator (SRI) and environmental sustainability indicators in existing EPC tools" relates to the work performed in Task 2.4 of the TIMEPAC project "Towards Innovative Methods for Energy Performance Assessment and Certification". Task 2.4 is...

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Procedures and services to undertake large-scale statistical analysis of EPCs databases

Deliverable 2.5

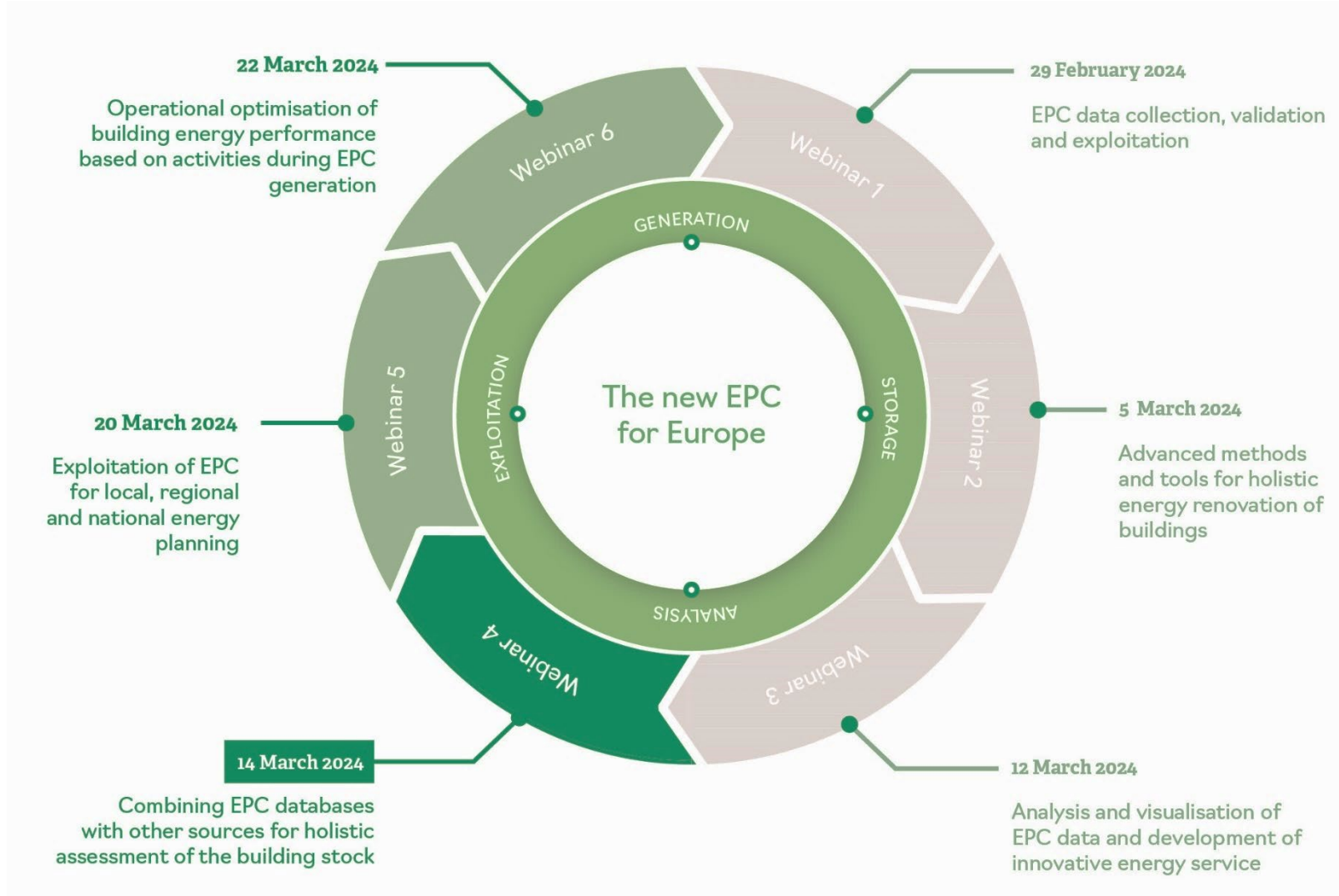
📅 Published November 16, 2023

This report summarizes to the work performed in Task 2.5 "TDS 5 - Large scale statistical analysis of EPC databases" of Work Package 2 "Transversal Deployment Scenarios". This work package is concerned with the creation of future scenarios with the aim of deploying and delivering...

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Webinars series



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Thanks for your attention!