Handbook on Energy Performance Certificates in Albania

A brief guide to understand Energy Performance Certificates for public administrations & businesses

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RenovAID

This project is part of the European Climate Initiative (EUKI) of the German Federal Ministry for Economic Affairs and Climate Action (BMWK). The project "RenovAID - Multi-level Structural Support for Improving Energy Efficiency in Buildings in Kosovo and Albania" aims to enhance the energy efficiency of buildings in these regions. Energy efficiency is crucial for reducing greenhouse gas emissions, lowering energy costs, and ensuring sustainable development. This report consolidates findings from comprehensive studies conducted in Kosovo and Albania, providing insights into current barriers and proposing actionable recommendations for policy frameworks and practical implementations to improve energy efficiency in buildings.

The handbook presents an overview of the European Union requirements about Energy Performance Certificates (EPCs), the current situation in Albania and gives suggestions how to improve structure and design of EPCs, database of certificates, training of energy experts and enforcement of EPC framework. The handbook shows good examples about implementation and enforcement of EPCs from Europe.

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RenovAID

Multi-level structural support
for improving energy efficiency
in buildings in Kosovo and Albania

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Table of contents

1. Introduction

The Energy Performance Certificate (EPC) plays a crucial role in the European Union's climate policies, particularly in addressing the energy consumption of buildings, which are the largest energy consumers in Europe. With around 85% of EU buildings built before 2000, and 75% of those having poor energy performance, improving energy efficiency in the building sector is key to achieving the EU's energy and climate goals. According to Eurostat and the European Environment Agency, around 40% of the EU's total energy consumption and over one-third of its energy-related greenhouse gas emissions come from buildings. Notably, approximately 80% of the energy used in EU homes is dedicated to heating, cooling and hot water.

EPCs provide consumers with essential information about the energy efficiency of buildings they intend to purchase or rent, as well as information on the energy performance of buildings before and after renovation. These certificates include an energy performance rating and recommendations for cost-effective improvements. EPCs must be included in all property advertisements in commercial media and made available to potential tenants or buyers during property construction, sale or rental. Furthermore, EPCs also disclose cost-effective methods to improve a building's energy performance and, where applicable, provide information on financial instruments available to support energy efficiency upgrades.

Energy certificates also play a crucial role in the Minimum Energy Performance Standard.[1] For the revised Energy Performance Building Directive[2], the EU has set a target for member states to retrofit 16% of the worst performing non-residential buildings by 2030 and 26% of the worst performing non-residential buildings by 2033. By renovating residential buildings should achieve a 16% reduction in energy use by 2030 (and 20-22% by 2035), with 55% of the total energy efficiency improvement achieved in the worst 43% of buildings. To achieve this target, it is necessary to know the energy performance of buildings, which can be estimated using statistical methods in addition to energy certificates. The role of EPCs in countries where extends beyond regulation, as they support market development and public awareness of energy consumption especially in countries with subsidised energy prices. By promoting transparency and informed decision-making, EPCs support the EU's broader policy goals, as outlined in the European Green Deal, Renovation Wave Strategy and the Energy Performance of Buildings Directive, all of which aim to achieve a zero-emission, fully decarbonized building stock by 2050.

1 EPBD Article 9 - tinyurl.com/249z5adr

2 Energy Performance Building Directive - tinyurl.com/bdh9p57m

2. General Situation

WHAT ARE THE EU REQUIREMENTS?

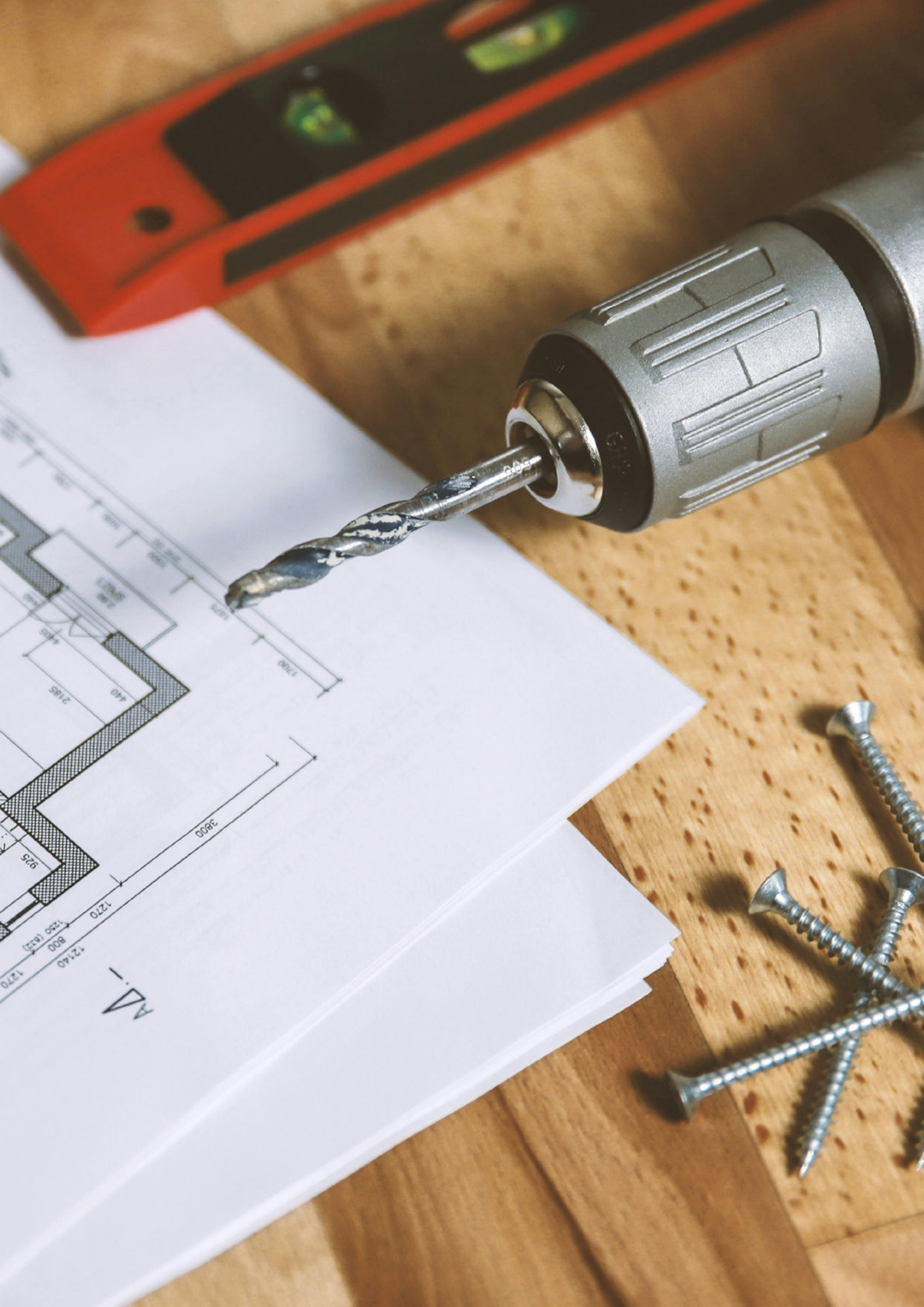
The most crucial legislative act is the Energy Performance of Buildings Directive (EU/2024/1275), recently revised, which includes an updated framework for Energy Performance Certificates across the EU's Member States. The following summary is based on the provisions outlined in the Energy Performance of Buildings Directive (EU/2024/1275), focusing solely on sections related to the Energy Performance Certificate.[3]

SITUATION IN ALBANIA

The EPC system in Albania is regulated by **Law No. 116/2016 "On Energy Performance of Buildings"**, which aligns with the EU Directive 2010/31/EU on the energy performance of buildings. The law mandates that all new buildings, as well as existing buildings undergoing major renovation, must obtain an EPC. The Energy Performance Certificate (EPC) in Albania provides crucial information about a building's energy efficiency and is mandatory in several circumstances, including when buildings are sold, rented, or renovated.

The recommendations for a more useful EPC system was developed with a view to include the data required by the EPBD (nos. 1 and 2), which is meant to be universally applicable, but still need to be adapted to county-specific requirements and needs.

3 europa.eu - tinyurl.com/2y2uk4mx



3. When and for whom are EPCs mandatory?

EU REQUIREMENTS

According to Article 19, 20, 21 of the EPBD EPCs must be issued for buildings constructed, renovated, sold, rented out and existing public buildings. The EPC must be shown to prospective tenants or buyers when a building or unit is sold or rented out, and it must be handed over. In public buildings and non-residential buildings must display their EPCs in a visible location.

SITUATION IN ALBANIA

EPCs are mandatory for new buildings, buildings undergoing major renovations, buildings being sold or rented. Furthermore, EPC is mandatory for all the buildings that are in use by a public authority or by institutions providing a service to the public and often frequented by the public, which has a usable area of over 250 m^2. In this case, the energy performance certificates should be placed in clearly visible places by the public.

If the state or the municipal provide support for building renovations – such as energy efficiency upgrades – there is generally a requirement to present Energy Performance Certificates (EPCs) both before and after the renovation. These certificates serve to document the building's energy performance improvements, which are often a condition for receiving financial assistance or subsidies.

BEST PRACTICES, MORE INFORMATION

In all EU member states, it should be mandatory to display the energy class of the EPC and/or the energy performance included in the EPC in selling or renting advertisements, since this is required in the EPBD, but the compliance in the markets varies. A potential way to improve compliance is to provide sellers, landlords and letting agencies with concrete and voluntary or even mandatory guidelines for the use and presentation of EPCs and the legally required data in advertisements of sales and rentals of buildings. This will make it easier for these target groups to comply with the advertisement requirements. Such guidelines issued by energy agencies/public authorities are already available in some member states. For example, in Ireland, a detailed guideline plus the respective energy class artwork files are available for download and use.

In Ireland, the Sustainable Energy Agency of Ireland (SEAI) publishes concrete guidelines for how to comply with the Building Energy Rating (BER) advertising requirement.[4] The content that should be provided, depending on the medium of advertisement, includes:

- BER alphanumeric rating (energy efficiency class) and its motif
- BER number
- Energy performance indicator that indicates the energy required for space heating and cooling, water heating, ventilation and lighting, and is expressed in kWh/m²/year.

Detailed guidelines on the requirements for artwork specifying the size, clearance zone, background, colours, and typeface, including samples of softcopy are provided. Besides, exhaustive medium-specific guidelines are provided, such as for advertisements in newspaper and magazines (broad ads with pictures and small text ads), display boards, radio, television, print and electronic mail, estate agent listing and brochure. Furthermore, several example advertisements are also provided.

Similar guidelines are available in the QualDeEPC partner county Sweden. In France, examples of adverts are available, which comply with the mandate that at least, the energy class label should be presented.[5]

RECOMMENDATIONS

Albania meets the main EU's requirements in this area. The advertisement expectations could be developed: together with an awareness-raising campaign on the importance of energy efficiency, the content and significance of EPCs can be highlighted and more visible advertising method can be required. If the EPC rating is not displayed in the advertisement, a penalty could be imposed. In the case of penalties, it is important to determine which authority will punish and who is being punished, the owner of the building or the real estate company. It should be prescribed that all energy efficiency projects receiving funding subsidy from a public or donor source must produce a 'before and after' EPC on completion.

4 BER Advertising Requirements Guidelines - tinyurl.com/3nwnjcuh

5 White Paper on good practice in EPC assessment, certification and use - tinyurl.com/3spcexy8

4. Design, scale, structure of EPCs

EU REQUIREMENTS

EU requirements are regulated in Article 19, 20, 21 of the Energy Performance of Buildings Directive about Energy Performance Certificates. Firstly, member states should create an EPC System, which shows the primary energy use with a numeric indicator of in kWh/(m^2/year). Secondly the EPCs should be machine-readable, digital and must follow the template in Annex V and indicate the building's energy performance class on a scale from A to G, where "A" means Zero-emission buildings and "G" the worst-performing buildings in the given Member State. To determine the worst-performing buildings, it is worth conducting a survey or carry out a statistical study. Member States may define an A+ class for buildings with 20% lower energy demand than zero-emission buildings. Buildings classified as A+ must disclose their life cycle global warming potential (GWP).

In Article 19 Annex V the appropriate template for energy performance certificates are determined. These are as follows:

1. On its front page, the energy performance certificate shall display at least the following elements:

a) Energy performance class;
b) Calculated annual primary energy use in kWh/(m^2/year);
c) Calculated annual final energy use in kWh/(m^2/year);
d) Renewable energy produced on-site in % of energy use;
e) Operational greenhouse gas emissions ($kgCO_2$/(m^2.y)), and the value of the life-cycle GWP, if available.

The energy performance certificate shall also display the following elements:

a) Calculated annual primary and final energy consumption in kWh or MWh;
b) Renewable energy production in kWh or MWh; main energy carrier and type of renewable energy source;
c) Calculated energy needs in kWh/(m^2.y);
d) Yes/no indication whether the building has a capacity to react to external signals and adjust the energy consumption;
e) Yes/no indication whether the heat distribution system inside the building is capable to work at low or more efficient temperature levels, where applicable;
f) The contact information of the relevant one-stop shops for renovation advice.

2. In addition, the energy performance certificate may include the following indicators:

a) Energy use, peak load, size of generator or system, main energy carrier and main type of element for each of the uses: heating, cooling, domestic hot water, ventilation and in-built lighting;
b) Greenhouse gas emission class (if applicable);
c) Information on carbon removals associated to the temporary storage of carbon in or on buildings;
d) Yes/no indication whether a renovation passport is available for the building;
e) Average U-value for the opaque elements of the building envelope;
f) Average U-value for the transparent elements of the building envelope;
g) Type of most common transparent element (e.g. double-glazed window);
h) Results of the analysis on overheating risk (if available);
i) Presence of fixed sensors that monitor the indoor environmental/air quality;
j) Presence of fixed controls that respond to the levels of indoor environmental quality;
k) Number and type of recharging points for electric vehicles;
l) Presence, type and size of energy storage systems;
m) Expected remaining lifespan of the heating or air-conditioning systems and appliances, where applicable;
n) Feasibility of adapting the heating system to operate at more efficient temperature settings;
o) Feasibility of adapting the domestic hot-water system to operate at more efficient temperature settings;
p) Feasibility of adapting the air-conditioning system to operate at more efficient temperature settings;
q) Metered energy consumption;
r) Whether there is a connection to a district heating and cooling network, and, if available, information about a potential connection to an efficient district heating and cooling system;
s) Local primary energy factors and related carbon emission factors of the connected local district heating and cooling network;
t) Operational fine particulate matter (PM 2,5) emission.

The energy performance certificate may include the following links with other initiatives if these apply in the relevant Member State:

a) Yes/no indication whether a smart readiness assessment has been carried out for the building;
b) Where available, the value of the smart readiness assessment;
c) Yes/no indication whether a Digital Building Logbook is available for the building.

Persons with disabilities shall have equal access to the information in energy performance certificates.

SITUATION IN ALBANIA

Albania's Energy Performance of the Buildings Law lacks specific kWh/m²/year data for minimum standards but outlines a methodology for calculating energy performance and required materials. The building follows the minimum energy performance requirement, if the calculated value of the primary energy efficiency scale is lower or equal to 50. While Primary Energy Efficiency is defined by multiplying the number without a size of 50 by the ratio of energy need (in kWh/m² per year) of the current building considered, compared to the target rate of energy need (in kWh/m² per year) of the reference building.

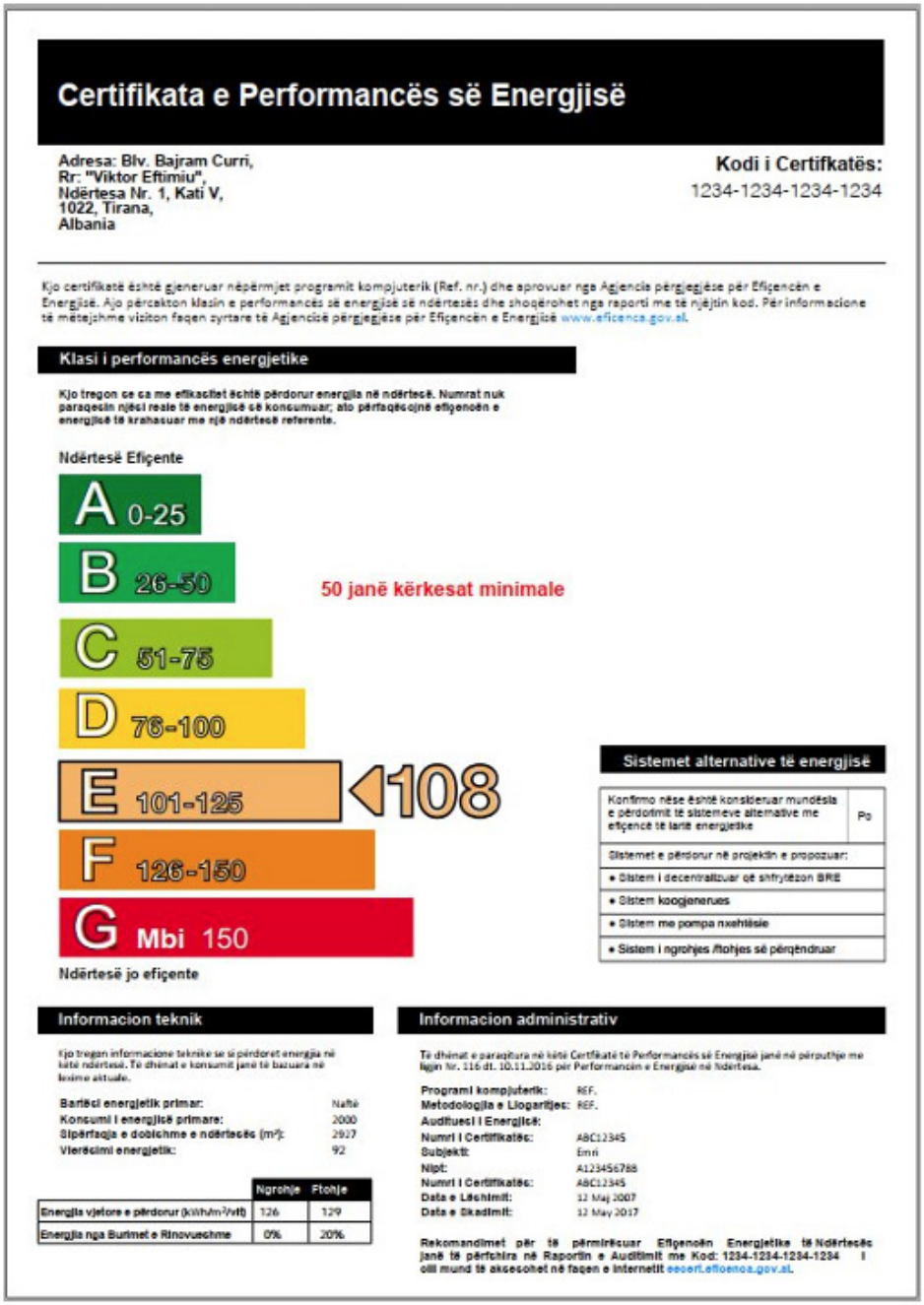
The design of the Albanian EPC aims to comply with EU standards and includes:

1. **Customer-Friendliness:** It features a clear structure to ensure that homeowners and tenants can easily understand the energy performance of the building.

2. **Transparency**: The EPC offers detailed data about the building's energy use, potential savings, and recommended improvements.

3. **Illustrative Design**: The certificate typically uses a color-coded scale (from green to red) to indicate energy efficiency levels, similar to those in other European countries, which makes it visually intuitive.

4. **Content**: It includes specific metrics, such as energy consumption (kWh/m²/year), CO_2 emissions, building characteristics and recommended actions for improvement. Temporary certificates may also be issued at the design stage for new buildings.



Certifikata e Performancës së Energjisë

Adresa: Blv. Bajram Curri,
Rr: "Viktor Eftimiu",
Ndërtesa Nr. 1, Kati V,
1022, Tirana,
Albania

Kodi i Certifkatës:
1234-1234-1234-1234

Kjo certifikatë është gjeneruar nëpërmjet programit kompjuterik (Ref. nr.) dhe aprovuar nga Agjencia përgjegjëse për Efiçencën e Energjisë. Ajo përcakton klasin e performancës së energjisë së ndërtesës dhe shoqërohet nga raporti me të njëjtin kod. Për informacione të mëtejshme vizitoni faqen zyrtare të Agjencisë përgjegjëse për Efiçencën e Energjisë www.eficenca.gov.al.

Klasi i performancës energjetike

Kjo tregon se sa me efikasitet është përdorur energjia në ndërtesë. Numrat nuk paraqesin njësi reale të energjisë së konsumuar; ato përfaqësojnë efiçencën e energjisë të krahasuar me një ndërtesë referente.

Ndërtesë Efiçente

A 0-25
B 26-50
C 51-75
D 76-100
E 101-125 ◀108
F 126-150
G Mbi 150

50 janë kërkesat minimale

Ndërtesë jo efiçente

Sistemet alternative të energjisë

Konfirmo nëse është konsideruar mundësia e përdorimit të sistemeve alternative me efiçencë të larte energjetike	Po
Sistemet e përdorur në projektin e propozuar:	
• Sistem i decentralizuar që shfrytëzon BRE	
• Sistem kogjenerues	
• Sistem me pompa nxehtësie	
• Sistem i ngrohjes /ftohjes së përqëndruar	

Informacion teknik

Kjo tregon informacione teknike se si përdoret energjia në këtë ndërtesë. Të dhënat e konsumit janë të bazuara në lexime aktuale.

Burimi energjetik primar:	Naftë
Konsumi i energjisë primare:	2000
Sipërfaqja e dobishme e ndërtesës (m²):	2917
Vlerësimi energjetik:	92

	Ngrohje	Ftohje
Energjia vjetore e përdorur (kWh/m²/vit)	126	129
Energjia nga Burimet e Rinovueshme	0%	20%

Informacion administrativ

Të dhënat e paraqitura në këtë Certifikatë të Performancës së Energjisë janë në përputhje me ligjin Nr. 116 dt. 10.11.2016 për Performancën e Energjisë në Ndërtesa.

Programi kompjuterik:	REF.
Metodologjia e Llogaritjes:	REF.
Auditues i Energjisë:	
Numri i Certifikatës:	ABC12345
Subjekti:	Emri
Nipt:	A123456788
Numri i Certifikatës:	ABC12345
Data e Lëshimit:	12 Maj 2007
Data e Skadimit:	12 May 2017

Rekomandimet për të përmirësuar Efiçencën Energjetike të Ndërtesës janë të përfshira në Raportin e Auditimit me Kod: 1234-1234-1234-1234 I cili mund të aksesohet në faqen e internetit eecert.efficenca.gov.al.

Figure 1. Current Albanian EPC front page

Albanian public authority is working to improve the EPC and the respective software, the following new draft is proposed, but it is not yet known when they will be available/approved by decree.

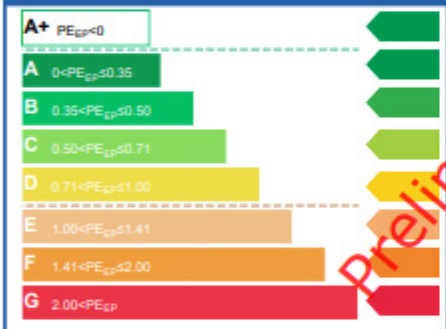
BUILDING ENERGY PERFORMANCE CERTIFICATE

Reference number of certificate: | **Expiration date:** 28.02.34 | 1

GENERAL INFORMATION ABOUT THE BUILDING

	Year of construction:		
	Location / Address:	Kucove At Gjon Karma - Shkoder	
	Owner:		
	Ready for GIGABIT	☐ Building is ready for GIGABIT	
	Type / Purpose of the building:		
	Building part / Zone:		
	Climate zone:	Shkodër, Vau dejës, Mirditë, Mat	
Building	☐ New	☑ Existing	☐ Reconstructed
Gross floor area [m²]:	0.00	Gross building volume [m³]:	5464.60
Useful floor area thermally conditioned [m²]:	1401.18	Net building volume [m³]:	4371.68
		Building shape factor [m⁻¹]:	0.44

INFORMATION ON ENERGY PERFORMANCE



Energy class of the building:	G	
Primary energy indicator [kWh/m²·a]:	.00	Notional Building: .00
Delivered energy per useful floor area thermally conditioned [kWh...	.00	Notional Building: .00
Global Warming Potential CO_2 [kg CO_2/m²·a]:	0.00	Notional Building: 00.00
Primary energy demand for for buildings without emissions	.00	Notional Building: .00
Share of renewable energy sources	1.21%	

ENERGY DEMAND OF THE BUILDING [kWh/m²]

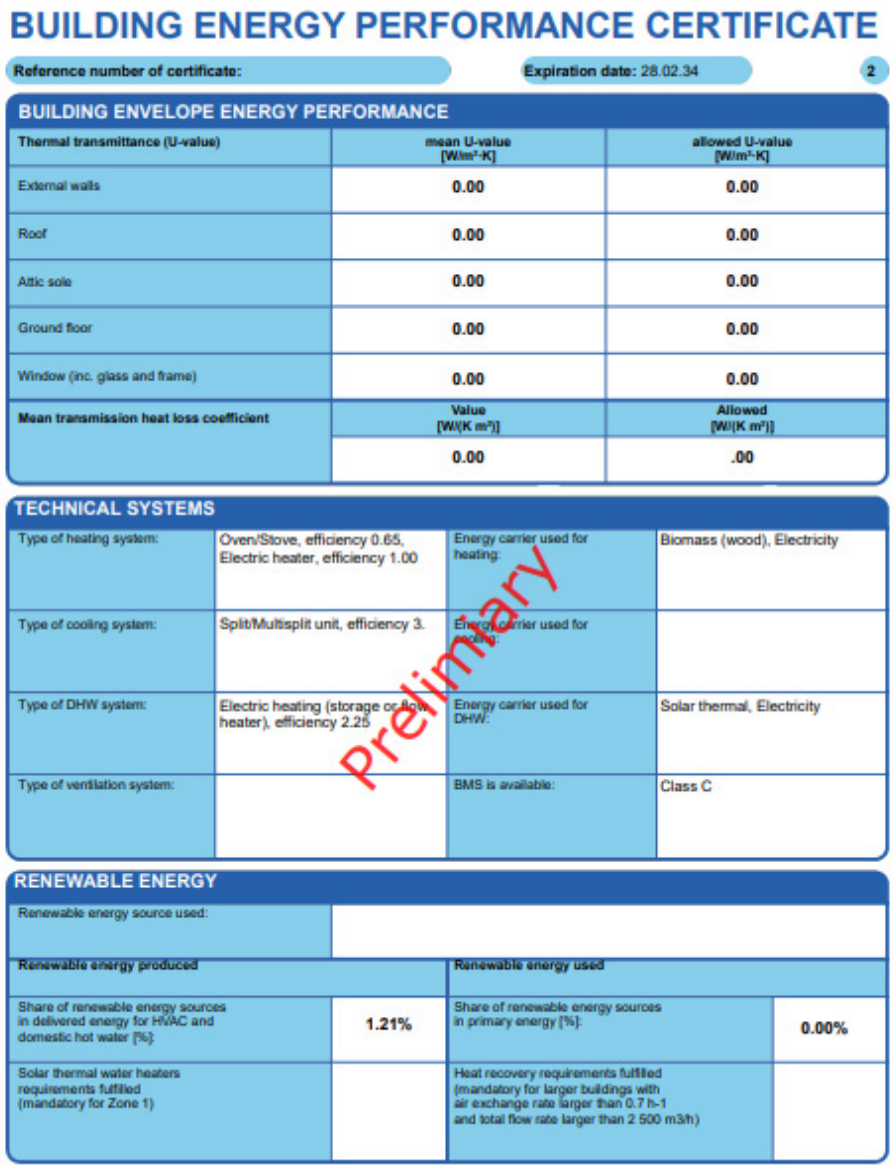
Type of energy demand	Energy need	Delivered energy	Primary energy
Heating	0.00	0.00	0.00
Cooling	0.00	0.00	0.00
Domestic hot water	0.00	0.00	0.00
Lighting	0.00	0.00	0.00
Ventilation	0.00	0.00	0.00
Auxiliary energy	0.00	0.00	0.00
TOTAL	0.00	0.00	0.00

INFORMATION ABOUT THE CERTIFICATE

Authorized person:	Zarko Despotovic Zarko Despotovic	Authorisation issued:	2010
		No. of authorisation:	014-01
Responsible qualified person:	Zarko Despotovic Zarko Despotovic	Other qualified persons involved:	

Date / Place Signature

Figure 2. New draft of the EPC (page 1)



BUILDING ENERGY PERFORMANCE CERTIFICATE

Reference number of certificate: **Expiration date:** 28.02.34 2

BUILDING ENVELOPE ENERGY PERFORMANCE

Thermal transmittance (U-value)	mean U-value [W/m²·K]	allowed U-value [W/m²·K]
External walls	0.00	0.00
Roof	0.00	0.00
Attic sole	0.00	0.00
Ground floor	0.00	0.00
Window (inc. glass and frame)	0.00	0.00
Mean transmission heat loss coefficient	**Value [W/(K m²)]**	**Allowed [W/(K m²)]**
	0.00	.00

TECHNICAL SYSTEMS

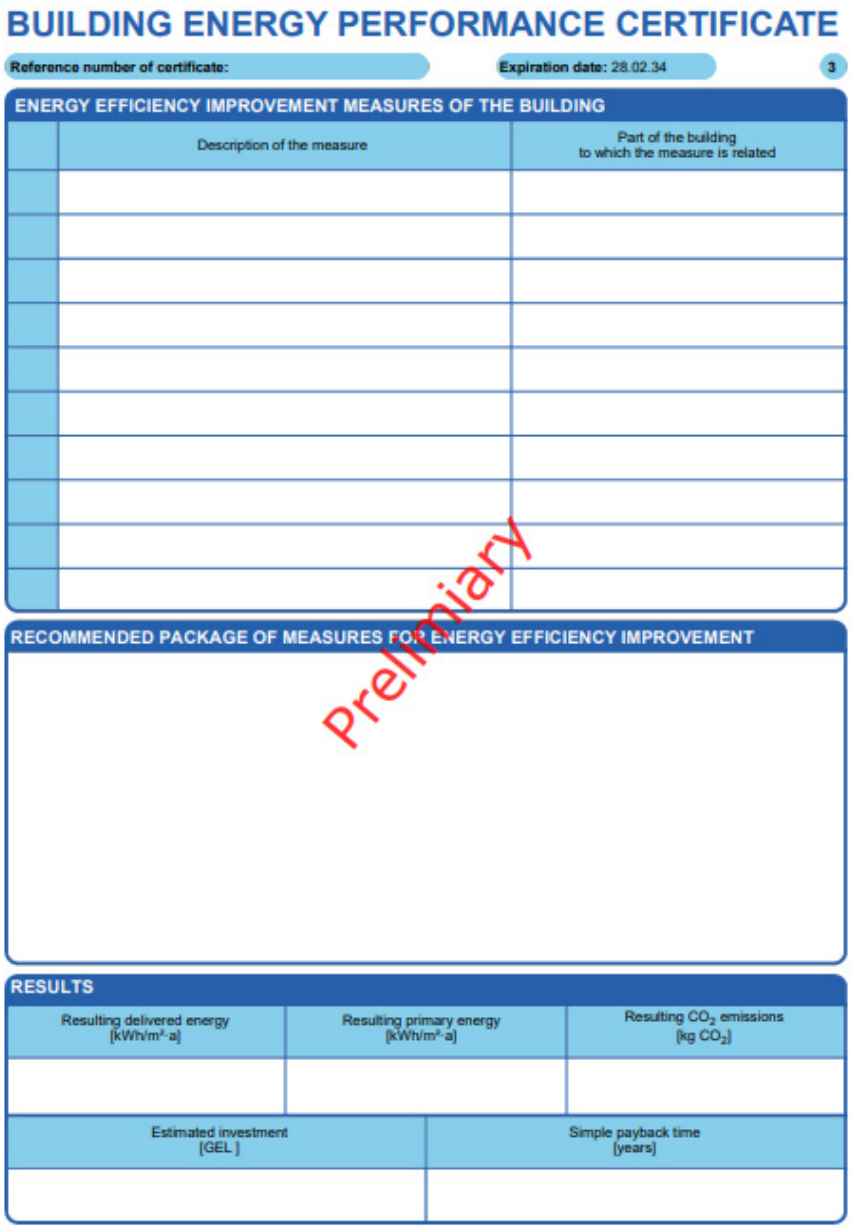
Type of heating system:	Oven/Stove, efficiency 0.65, Electric heater, efficiency 1.00	Energy carrier used for heating:	Biomass (wood), Electricity
Type of cooling system:	Split/Multisplit unit, efficiency 3.	Energy carrier used for cooling:	
Type of DHW system:	Electric heating (storage or flow heater), efficiency 2.25	Energy carrier used for DHW:	Solar thermal, Electricity
Type of ventilation system:		BMS is available:	Class C

Preliminary

RENEWABLE ENERGY

Renewable energy source used:			
Renewable energy produced		**Renewable energy used**	
Share of renewable energy sources in delivered energy for HVAC and domestic hot water [%]:	1.21%	Share of renewable energy sources in primary energy [%]:	0.00%
Solar thermal water heaters requirements fulfilled (mandatory for Zone 1)		Heat recovery requirements fulfilled (mandatory for larger buildings with air exchange rate larger than 0.7 h-1 and total flow rate larger than 2 500 m3/h)	

Figure 3. New draft of the EPC (page 2)



BUILDING ENERGY PERFORMANCE CERTIFICATE

Reference number of certificate: | Expiration date: 28.02.34 | 3

ENERGY EFFICIENCY IMPROVEMENT MEASURES OF THE BUILDING

	Description of the measure	Part of the building to which the measure is related

Preliminary

RECOMMENDED PACKAGE OF MEASURES FOR ENERGY EFFICIENCY IMPROVEMENT

RESULTS

Resulting delivered energy [kWh/m²·a]	Resulting primary energy [kWh/m²·a]	Resulting CO_2 emissions [kg CO_2]

Estimated investment [GEL]	Simple payback time [years]

Figure 4. New draft of the EPC (page 3)

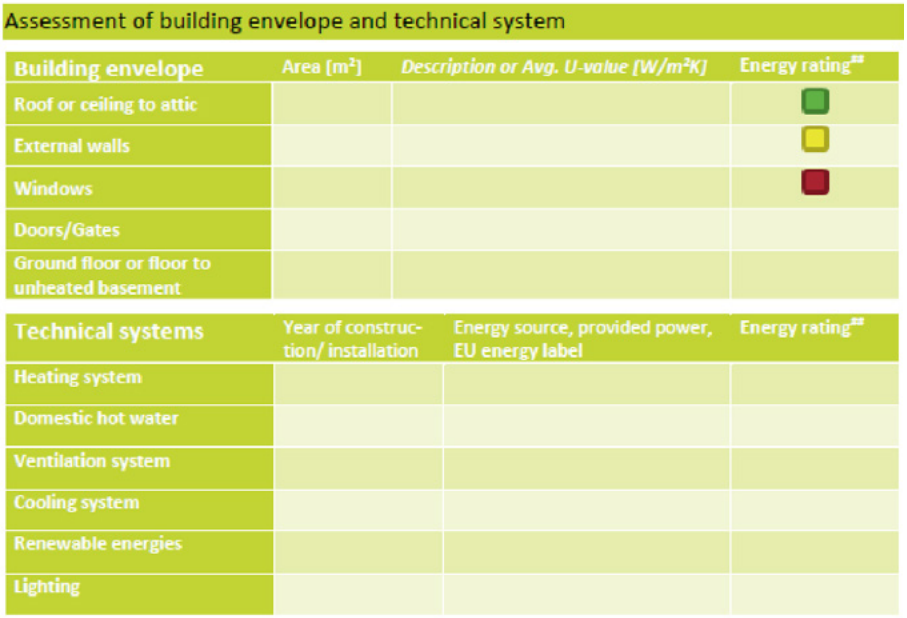
BEST PRACTICES, MORE INFORMATION ABOUT DESIGN AND STRUCTURE OF EPCs

A template for an enhanced and more user-friendly EPC form has been created and tested in the QualDeEPC project in 2022-23. In order to raise awareness for the potentials of deep energy renovation, it is not only necessary that the number and

technical specifications of the renovation recommendations are sufficient to achieve deep energy renovation when implemented. It will also be important to clearly display the baseline situation and the results could be achieved by retrofit to the user.

In the project a template for an enhanced and more user-friendly EPC form has been developed. This form will contain the following elements:

1. General data and building specification (standard requirement)
2. Energy performance and classification (standard requirement)
3. Past metered or modelled yearly total energy consumption
4. Details on building envelope and building HVAC system
5. Display of improved classifications and energy performance
6. Potential energy savings (in kWh/yr)
7. Detailed renovation recommendations by component
8. Useful combination of renovations and stepwise implementation
9. Link to Deep Renovation Network Platform



Assessment of building envelope and technical system			
Building envelope	Area [m²]	*Description or Avg. U-value [W/m²K]*	Energy rating##
Roof or ceiling to attic			
External walls			
Windows			
Doors/Gates			
Ground floor or floor to unheated basement			
Technical systems	Year of construction/ installation	Energy source, provided power, EU energy label	Energy rating##
Heating system			
Domestic hot water			
Ventilation system			
Cooling system			
Renewable energies			
Lighting			

Figure 5. Energy rating indicator as presented on the template of the enhanced EPC form

A very useful method is the **traffic light system** showing the energy efficiency levels of building and system components in green, yellow, and red, both for the current state and the renovation recommendations. “Energy Rating” indicator could be very useful, which provides information about the energy performance of each building envelope components and technical systems separately, by using three coloured symbols (green - good, yellow - average, red - poor). The same

rating and indicator values are also applied to the state of energy efficiency that a building component would achieve after implementing the energy renovation recommendations.

It is very important that the user knows which renovation combination is the most proposed, it should be defined the 'main option', a combination of recommendations that would lead to deep energy renovation.

To make customers transparent which renovation measures to apply and how many energy savings could be achieved by these retrofitting steps, it is worth displaying on the front page the improved energy performance and classification after implementation of the 'main option' and the total amount of energy savings (in kWh/yr) and GHG emissions reductions after realizing "main option". More information here.[6]

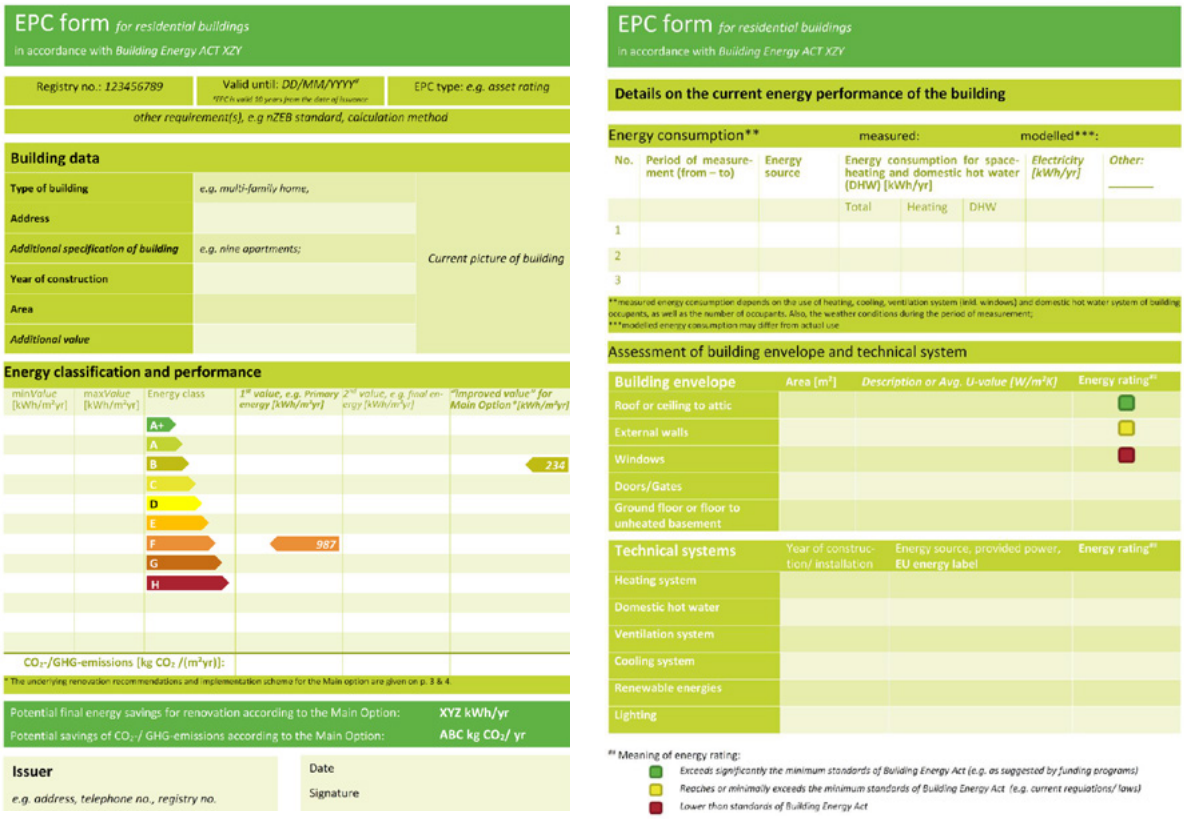
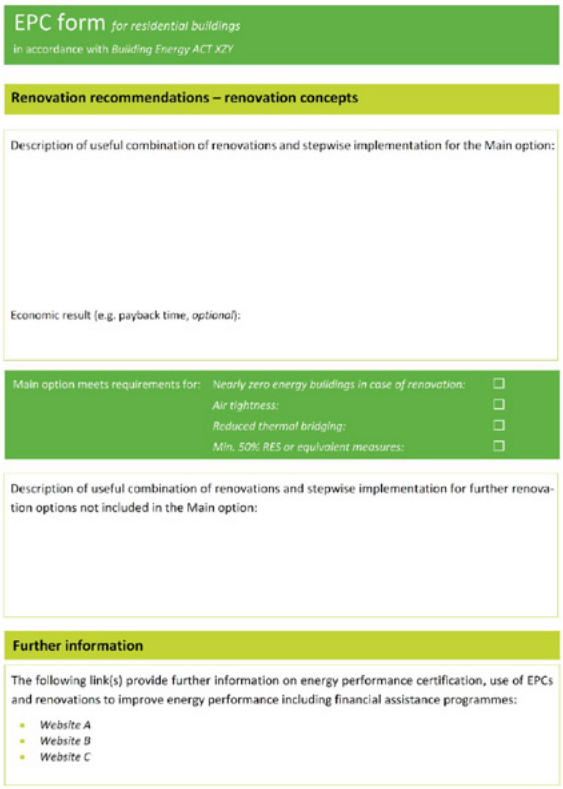


Figure 6-7: Pages of the enhanced EPC form template

6 D5.3 Guidebook for improved EPCs presenting the project's proposal for an enhanced and converging EPC assessment and certification scheme - tinyurl.com/4be3etd7



EPC form *for residential buildings*
in accordance with *Building Energy ACT XZY*

Renovation recommendations – renovation concepts

Description of useful combination of renovations and stepwise implementation for the Main option:

Economic result (e.g. payback time, *optional*):

Main option meets requirements for: *Nearly zero energy buildings in case of renovation:* ☐
Air tightness: ☐
Reduced thermal bridging: ☐
Min. 50% RES or equivalent measures: ☐

Description of useful combination of renovations and stepwise implementation for further renovation options not included in the Main option:

Further information

The following link(s) provide further information on energy performance certification, use of EPCs and renovations to improve energy performance including financial assistance programmes:

- *Website A*
- *Website B*
- *Website C*

Figure 8: Page of the enhanced EPC form template

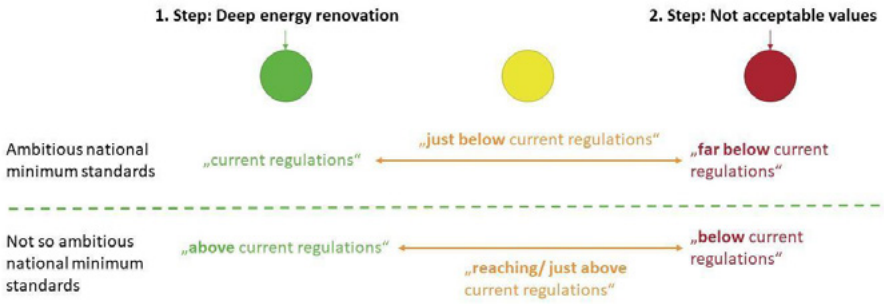


Figure 9. Energy rating indicator as defined by the QualDeEPC project

BEST PRACTICES AND MORE INFORMATION ABOUT SCALE

EU requirement says that EPCs should indicate the building's energy performance class on a scale from A to G, where "A" means Zero-emission buildings ang "G" the worst-performing buildings in the given Member State. It is not easy to correctly define the scale and determine the best- and worst-performing buildings. Either

a representative survey should be carried out or statistical methods should be used to determine the energy performance of the top and bottom 15% of buildings. In Hungary a novel estimation was carried out by combining the energy certificates issued since 2016, the 2016 Micro Census and the housing construction statistics of the Hungarian Central Statistical Office (HCSO). Energy performance certificate data are assigned to the dwellings included in the Micro Census and to the 68,000 new dwellings built in the period since then. A statistical relationship is established between the characteristics and the energy demand of dwellings, which is then extrapolated to the stock as a whole. This is processed to present the estimated calculated energy consumption per square metre of the Hungarian residential real estate stock and the characteristics of the estimate by area and real estate type. The results can support to determine the energy performance of the top and bottom 15% of buildings and using this statistical method is much cheaper than carrying out a representative survey about national building stock.

More information about the survey in English is available here.[7]

RECOMMENDATIONS

It is strongly recommended to define the scale in kWh/m^2/year and publish these data in the front page. It would give customers more information about the actual energy consumption of the building, would help to raise public awareness and would make easier to compare buildings internationally. This may require a change in the calculation methodology. It would be also useful to describe narratively the different energy classes to indicate how energy efficient or wasteful the building is. E.g. minimum energy demand, nearly-zero energy demand, advanced, better than average, average, near average, poor, extremely poor.

It is recommended to place not only energy consumption in kWh/m^2/year but CO_2/GHG emissions and savings on the 1st page of EPC form template. A separate scale and classification could be introduced for CO_2 use, which could be different from the energy use classification. CO_2 data help to promote the circular economy, decarbonisation and the transition from fossil fuels. A calculation methodology would need to be developed.

It is useful to place a picture about the current situation of building. It could prove that a site visit took place to assess the energy situation of the building. It is worth describing the nZEB standard on the first page of the EPC form template. It is useful to make a footnote on the date of validity.

For users it is very helpful to see what kind of economic and non-economic advantages could be reached by retrofitting. It is worth discussing the possibilities how

7 Estimating the Energy Demand of the Residential Real Estate Stock in Hungary Based on Energy Performance Certificate Data - tinyurl.com/3wtj8shv

to display the economic and non-economic result of the main renovation option on the EPC template.

As the average heating demand of detached houses is 191 kWh/m^2/year, it seems that the scale of EPC should be changed. Class G should include the worst performing 15% of buildings and A+ class for buildings with 20% lower energy demand than zero-emission buildings. It is worth positioning Minimum Energy Performance Requirements compliance at the B-C boundary and leaving enough 'headroom' to give meaningful visible credit to buildings (new or renovated) at nZEB or better standard – while also allowing the creation of building 'classes' such as nZEB, Zero Energy or 'Energy Plus'. Energy class "D" should probably be set around the average value (191 kWh/m^2/year) To correctly define the scale and determine the best- and worst-performing buildings, a survey should be carried out to determine the energy performance of the top and bottom 15% of buildings. In the part of "best practices" we showed a novel statistical method carried out in Hungary which determined the best- and worst-performing buildings in a much cheaper way than by using a representative survey.

It would be an important help for renovators if the energy performance (in kWh/m^2/year and in CO_2) that could be achieved by the proposed retrofit measures (main option) were published on the front page. It would also very useful to include on the first page the energy and CO_2 saving potential between the energy performance of the baseline and the one that could be achieved with the retrofit.

It is recommended to assess each building envelope components and technical systems separately and to mark their condition with green-yellow-red signs (good – average – poor condition). From this assessment alone, without reading the retrofit recommendations, the user can have an idea of which building envelope elements or technical system should be upgraded. The same rating and indicator values should be also applied to the state of energy efficiency that a building component would achieve after implementing the energy renovation recommendations.

A guidebook or tutorial on how to fill in the Enhanced EPC template should be developed.


Italia Star Com Due s.r.l.
www.italiastar.ro
Tel: 021- 231.53.71

5. Renovation proposals

EU REQUIREMENTS

Article 19, 20, 21 of the Energy Performance of Buildings includes that EPCs must provide recommendations for cost-effective measures. Recommendations should cover two levels: suggestions for major renovations of the building envelope or technical systems and recommendations for individual building elements independent of major renovations. If a renovation passport is issued under Article 12(3), it will substitute the recommendations in the EPC. An assessment should be made regarding whether heating, ventilation, and air-conditioning systems can be adapted to more efficient temperature settings. EPCs should assess the remaining lifetime of heating and air-conditioning systems, suggesting alternatives aligned with the 2030 and 2050 climate targets.

Recommendations must be technically feasible, with estimates of energy savings, GHG reductions, and possible financial benefits. For buildings with performance below class C, building owners must receive renovation advice within 5 years in the EPCs.

EPBD introduces the concept of Building Renovation Passport (Article 12). Renovation passport means a tailored roadmap for the deep renovation of a specific building in a maximum number of steps that will significantly improve its energy performance. The scheme will be voluntary for building owners, unless Member States decide to make it mandatory. Member States may decide to allow the renovation passport to be drawn up and issued together with the energy performance certificate. Member States shall ensure that the renovation passport can be uploaded to the national energy performance database and accessed through the digital building register. Annex VIII of the EPBD contains the list of requirements for the renovation passport. Member States will have to provide a specific digital tool for the preparation and possible updating of the passport. A complementary tool, similar to the dedicated Building Renovation Passport, will also be developed for building owners and managers to simulate a draft simplified passport.

SITUATION IN ALBANIA

There are renovation proposals in EPCs. The level of detail for renovation proposals is relatively basic and focuses on improving energy efficiency metrics, such as:

a) general recommendations for energy-saving measures, such as improving insulation, upgrading windows, or installing renewable energy systems,
b) do not typically provide detailed cost analyses or specific phased strategies

tailored to the building's unique characteristics,

c) it does not explicitly prioritize or calculate cost-effectiveness for each proposed measure. This limits its utility for homeowners or managers seeking clear financial guidance,

d) it does not propose phased renovation strategies or detailed sequencing of measures.

BEST PRACTICES, MORE INFORMATION

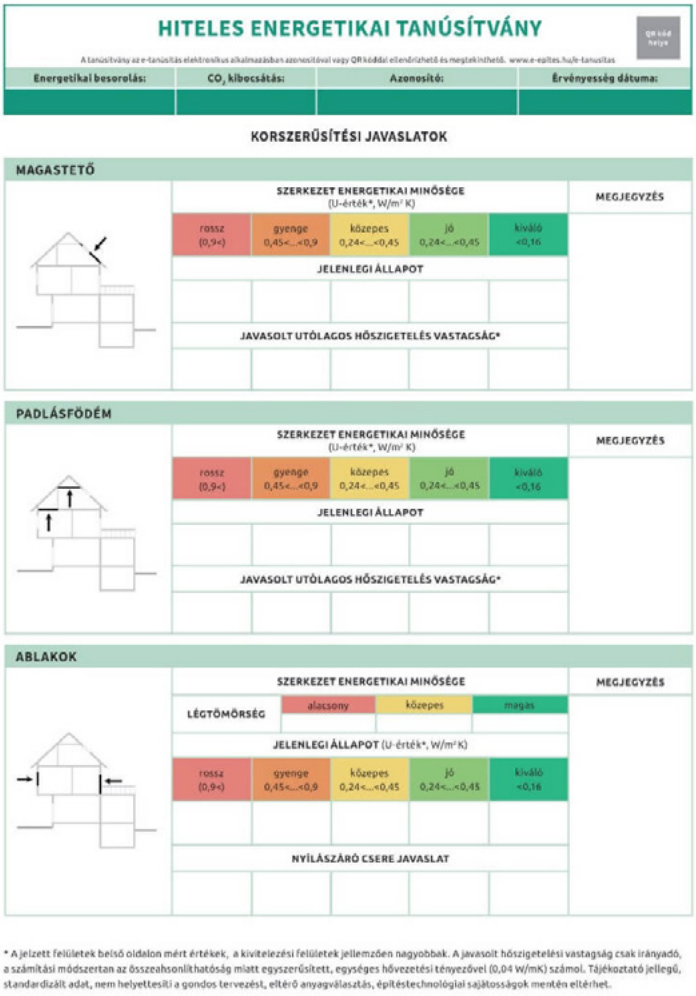
iBRoad2EPC project aimed to integrate Building Renovation Passport (BRP) elements into existing EPC schemes in order to provide to users the following added values:

- Improvement of the renovation recommendations in alignment with national building climate targets
- Outline of an individual building long-term renovation strategy considering
  - Step-by-step renovations that gradually lead to a consistent deep renovation
  - Avoidance of mistakes through early preparation of later renovation measures
  - Alignment with overarching national building targets
  - Fulfilment of future legal requirements and obligations (e.g., ban of fossil fuels, minimum energy performance standards)
- Enhanced quality through the obligatory nature of an on-site visit by a trained expert[8]

Figure 10. Building Renovation Passport logic in IBroadProject

8 Technical report on the definition of the proposed concept, content and methodology - tinyurl.com/bdf4cd7c

IBRoad2EPC project carried out a Building Renovation Passport template and suggestions. The project recommends an **extra page** to the regular EPC with an individual URL and QR-code which will contain the BRP information. The BRP outlines an initial **renovation strategy** on how a building can become climate neutral in the long term. BRP is hosted online and thus can be adapted dynamically. BRP suggested by iBRoad2EPC project is an individual **energy consultation** for building owners, issued by trained building professionals. IBRoad2EPC Building Passport can be extended flexibly with additional modules e.g Energy demand, cost and GHG emissions; Investment cost; Indoor environment quality (IEQ) and Smart readiness indicator (SRI).



HITELES ENERGETIKAI TANÚSÍTVÁNY

Energetikai besorolás:	CO_2 kibocsátás:	Azonosító:	Érvényesség dátuma:

KORSZERŰSÍTÉSI JAVASLATOK

MAGASTETŐ

SZERKEZET ENERGETIKAI MINŐSÉGE (U-érték*, W/m² K)					MEGJEGYZÉS
rossz (0,9<)	gyenge 0,45<...<0,9	közepes 0,24<...<0,45	jó 0,24<...<0,45	kiváló <0,16	
JELENLEGI ÁLLAPOT					
JAVASOLT UTÓLAGOS HŐSZIGETELÉS VASTAGSÁG*					

PADLÁSFÖDÉM

SZERKEZET ENERGETIKAI MINŐSÉGE (U-érték*, W/m² K)					MEGJEGYZÉS
rossz (0,9<)	gyenge 0,45<...<0,9	közepes 0,24<...<0,45	jó 0,24<...<0,45	kiváló <0,16	
JELENLEGI ÁLLAPOT					
JAVASOLT UTÓLAGOS HŐSZIGETELÉS VASTAGSÁG*					

ABLAKOK

SZERKEZET ENERGETIKAI MINŐSÉGE					MEGJEGYZÉS
LÉGTÖMÖRSÉG	alacsony	közepes	magas		
JELENLEGI ÁLLAPOT (U-érték*, W/m² K)					
rossz (0,9<)	gyenge 0,45<...<0,9	közepes 0,24<...<0,45	jó 0,24<...<0,45	kiváló <0,16	
NYÍLÁSZÁRÓ CSERE JAVASLAT					

* A jelzett felületek belső oldalon mért értékek, a kivitelezési felületek jellemzően nagyobbak. A javasolt hőszigetelési vastagság csak irányadó, a számítási módszertan az összeahsonlíthatóság miatt egyszerűsített, egységes hővezetési tényezővel (0,04 W/mK) számol. Tájékoztató jellegű, standardizált adat, nem helyettesíti a gondos tervezést, eltérő anyagválasztás, építéstechnológiai sajátosságok mentén eltérhet.

Figure 11. Hungarian Energy Performance Certificate: renovation proposals

Another good example is Hungary where the renovation proposals in the EPCs are drafted for two level of retrofitting: for zero-energy renovation and for cost-effective level. The recommendations should be developed in a very detailed way:

the energy assessor have to define exactly how to change all structural elements and equipment (walls, attic, windows, heating system), e.g. how many centimeter of facade insulation to add. Under the heading "Renovation Passport", he/she should also suggest the correct sequence of renovation steps and at the end he/she should calculate how many energy savings, CO_2 savings could be reached by these steps.

The Hungarian model is based on recommendations of QualDeEPC project3 where the three colored symbols (green, yellow, red) are linked to the following levels of energy rating, depending on whether the current national minimum energy efficiency standards for buildings or their components are considered ambitious (upper scale) or not so ambitious (lower scale):

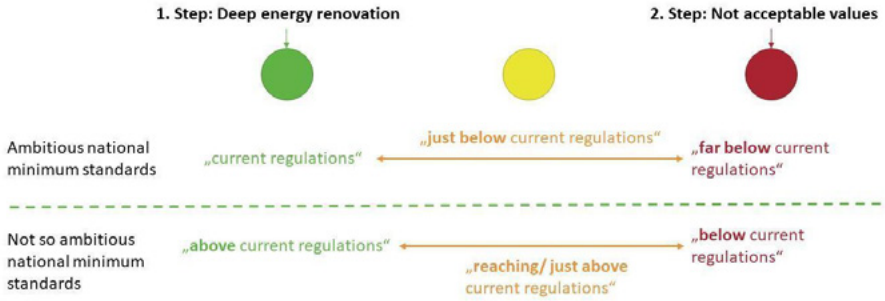


Figure 8. Energy rating indicator as defined by the QualDeEPC project

A. In case of ambitious national minimum standards already in force, the energy rating indicator and values could stand as follows:

- *Green:* Reaches the minimum standards set by the national the regulation/ legislation
- *Yellow:* Just below the minimum standards set by the national the regulation/ legislation
- *Red:* Significantly below the minimum standards set by the national the regulation/legislation

B. In case of less ambitious national minimum standards in force, the energy rating indicator and values could stand as follows:

- *Green:* Exceeds the minimum standards set by the national the regulation/ legislation
- *Yellow:* Reaching or slightly exceeding the minimum standards set by the national the regulation/ legislation
- *Red:* Below the minimum standards set by the national the regulation/ legislation

The exact values and/or conditions differ in the participating countries, therefore the country-specific definition of the values/ ranges for the 'energy-rating" indicator should be defined.

RECOMMENDATIONS

Renovation proposals should be much more detailed. It is useful to develop proposals for two levels of expectations: cost-effective and deep renovation expectations. To implement this method, cost-effective and deep renovation standard should be defined. It is important that the suggestions to each of the building envelope elements and technical systems structural elements are precisely described (e.g. how many centimeters of façade or roof insulation is required). It is very useful to link the three coloured system to the recommendations to make customers clear how the recommended retrofit measures relate to national standards and objectives. The exact values and/or conditions differ in the participating countries, therefore the country-specific definition of the values/ ranges for the 'energy-rating" indicator should be defined. These must be consistent with the improved renovation recommendations proposed i.e., components that already meet the energy efficiency levels of these recommendations, or would meet them after implementing an actual recommendation included on an EPC, would be rated 'green'.

It is critical that the technically and financially correct sequence of renovation steps should be identified so that phased renovation can be implemented based on the proposals. A good tool for it is the Building Renovation Passport which is an initial **renovation strategy** on how a building can become climate neutral in the long term. This helps owners to plan ahead and to carry out a staged renovation which aims to reach deep renovation standards. However, the exact sequencing is not easy: the ranking can be based on energy aspects only (energy efficiency first principle or the next measure can be implemented without demolition), but other technical aspects (e.g. waterproofing) can also be incorporated into the proposal. It is also possible to take into account in the renovation strategy, when different elements will reach the end of their lifetime and propose their upgrading. Taking into account the value for money of the measures (which can change continuously) can also change the proposed order.

6. National database of EPCs

EU REQUIREMENTS

EU requirement is that each Member State must set up a national database for EPCs, tracking individual building energy performance and aggregated national data. This database should also collect information from renovation passports, smart readiness indicators, and other relevant inspections.

Anonymized data must be made public. Full EPCs must be easily accessible to building owners, tenants, managers, and financial institutions which could help banks to green their mortgage portfolio. Local authorities must have access to relevant building data for tasks like heating and cooling planning. National databases must be interoperable with other administrative databases, such as land registries or building registers.

Member States must update and make public data on their building stock's energy performance at least twice a year. Data must be transferred annually to the EU Building Stock Observatory.

SITUATION IN ALBANIA

The Agency for Energy Efficiency is authority that records in a special register of the performance certificate of building energy.

According to the DCM No. 958, dated 2.12.2020 Approval of the procedures and conditions for the certification of the energy performance of the building models, content and conditions for the registration of the "Certificate of the energy performance in the building" the procedures for registering the "Building Energy Performance Certificate" are administered by the agency responsible for energy efficiency and include:

a) checking in the Register of Certified Energy Auditors, if the energy auditor is certified;
b) checking data, such as: identification of the assessor, identity of the building owner, construction details and other data, for completing the data in the National Register of Energy Performance Certificates;
c) checking, within 10 (ten) working days, the input values in the approved computer program, which have been previously compiled by the agency responsible for energy efficiency, in accordance with the national calculation methodology, approved for the input values in the approved

computer program. If these values are not completed according to the format, the agency responsible for energy efficiency requests by e-mail from the energy auditor their review, within 5 (five) days from the notification. The application is re-entered into the procedure after these values are completed;

d) registration of the Energy Performance Certificate, as well as the issuance of an unique identification number or code of the certificate, and the date of its issuance;
e) issuance of the final energy performance certificate to the auditor and the building owner, only when the conditions for the certification of the energy performance of buildings, have been met.

The system itself ensures, through the authorized officer, the permission of interested parties to check the validity of the performance certificates. In theory they are available for all institutions, but yet there is not any integrated register.

BEST PRACTICES, MORE INFORMATION

Good example is Salzburg region (Austria), where EPCs are stored in the so-called internet database ZEUS (Central EPC environment), which also contains Building Renovation Passports (BRP), detailed renovation measures, energy advice data, plans etc. It is also connected to the funding authority. Inspection reports and smart meters can also be integrated. In addition, the building owner can give access to the data to selected professionals, for example. All these systems are realised by one service provider. Thus, the technical interfaces are easy to implement.[9]

Another good example is France, where one national calculation method for EPCs harmonized and defined by law. There is one national EPC data model (XSD/XML format) and one national EPC database that contains the data models of each EPC. These standardized xml data models of each EPC are generated automatically by accredited EPC software and uploaded on the national database. They are then checked with automatic “consistency checks” (set of automated algorithms) that validate the inputs for each EPC (otherwise the EPC is rejected and not valid). This is allowed by a standardized description of building elements and not only simulation results. The French national EPC database is widely available as an open database. The open data version is “cleaned” so that no personal information can be retrieved/displayed (eg: name of the owner, etc). Only the building location is kept as well as information about its technical components and its performance. The French national EPC database is managed by ADEME.[10]

Most EU member states have implemented databases of all issued EPCs, but there there are significant disparities. There are differences particularly in database

9 Energieusweise - www.energieausweise.net, crossCert project - www.crosscert.eu

10 EPC Recast project - tinyurl.com/bdd25z2y

interlinking with external sources, upload procedure and data access levels for citizens and third parties, hindered by privacy and data protection laws. Analysis and comparison of European EPC databases in project CrossCert[11] and in project TimePAC.[12]

RECOMMENDATIONS

If the data in the Albanian database is not searchable, it is strongly recommended to store all the data in digitalised form which could be searched by many aspects. It would be useful and would save human resources if the data will be checked with automatic "consistency checks" (set of automated algorithms) that validate the inputs for each EPC.

It would be very useful if the national database would be available as an open database. Because of GDPR rights the open version of data should be cleaned so that no personal information can be retrieved, only the building location, technical components and its performance should be displayed. It would help banks and financial institutions to analyse their mortgage portfolio and to make measures to improve the performance of the portfolio.

EPC's database should be integrated with the land registry and building cadastre.

If Albania will be part of the EU, the authority responsible for EPCs (e.g agency for energy efficiency) should transmit annually to the EU Building Stock Observatory.

11 D4.2. Analysis of the current integration of EPC data - tinyurl.com/b3bdtnxt

12 TimePAC - zenodo.org/records/7660538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7. Energy experts

EU REQUIREMENTS

Article 19, 20, 21 of the Energy Performance of Buildings Directive about Energy Performance Certificates provides that EPCs must be reliable, affordable, and issued by independent experts after on-site visits (or virtual checks).

SITUATION IN ALBANIA

There are currently 93 certified energy auditors for buildings, which is insufficient as a proportion of the population. Majority of them are located in the capital, making difficult or expensive service for the building outside of main cities of Albania.

Energy auditors must meet specific qualifications, including technical expertise in building systems and energy efficiency technologies, and they must pass certification exams based on government standards.

Training programs to become an energy auditor typically take several month to a year. This includes both coursework on energy systems and practical experience, ensuring auditors can evaluate energy performance effectively and recommend improvements aligned with Albania's energy efficiency goals.

BEST PRACTICES, MORE INFORMATION

High-quality energy assessment and certification requires regular training of energy consultants and EPC assessors. Requirements defined by Member States for qualifications, training, and examinations to be certified or accredited and registered as an EPC assessor differ significantly. A University degree may not be needed to become a high-quality EPC assessor. However, QualDeEPC's research and stakeholder discussion support the conclusion that either there should be initial and regular training of EPC assessors on calculation methods, avoiding errors, dealing with new technologies and changes in legislation, issuing EPCs, explaining the functions and content of the EPC and renovation to their clients, and particularly on the deep (energy) renovation recommendations; or there should be a regular examination (combined with voluntary training) on these types of content. QualDeEPC recommends regular, mandatory training for assessors to maintain qualification and high quality of issued EPCs. The frequency of the trainings is proposed to be every 3-5 years. The regular training can be based on an initial training, which should have a larger duration than the regular training sessions that serve for refreshment and updating

of knowledge and skills. Moreover, the curriculum of the initial training should vary so as to be suitable for all eligible qualifications at national level (University degree or secondary technical education). The regular mandatory training might be a combination of training courses, participation in workshops or seminars, and the verification of the high quality of a random sample of issued EPCs. In each category, the curriculum for the EPC assessors should be specified on a national level. More details in 2.4 Chapter of D5.3 of QualDeEPC project.[13]

Tools available in Austria for EPC-experts Assessors are the validate ECOTECH software solutions ranging from building physics to EPCs. On a buildings materials and technical equipment (HVAC) level the ecobook database provide extensive data content.

RECOMMENDATIONS

The number of energy auditors should be increased, mainly in the countryside. New trainings should be held until the desired number of assessors is reached (recommendation: 250 auditors).

If the current EPC system (template, calculation method, database) will be improved, the trained auditors will also have to update their knowledge: new training courses will have to be held for them. It would be very useful to introduce a regular, mandatory training for EPC assessors to maintain qualification and high quality of issued EPCs. The regular training can be based on an initial training, which should have a larger duration than the regular training sessions that serve for refreshment and updating of knowledge and skills. The regular mandatory training might be a combination of training courses, participation in workshops or seminars, and the verification of the high quality of a random sample of issued EPCs.

The regular training should focus on the following information:

- changes in national or European Building Performance Acts,
- state-of-the-art technologies,
- deep energy renovation recommendations,
- common mistakes or errors in EPCs,
- funding programs for renovation and their technical requirements,
- consumer information and communication,
- contract design,
- further (soft) skills for EPC assessors. An on-line publicly accessible central register of licensed professionals should be established, containing a sufficient number (at least 150 residential & 50 non-residential) of qualified EPC assessors/ energy auditors to serve market compliance needs. A Code of Practice for EPC assessors should be finalized.

13 D5.3 Guidebook for improved EPCs presenting the project's proposal for an enhanced and converging EPC assessment and certification scheme - tinyurl.com/4be3etd7

8. Enforcement of EPCs

There are no EU requirements about enforcement of EPCs, it is national responsibility.

SITUATION IN ALBANIA

The Agency for Energy Efficiency is authority that records in a special register of the performance certificate of building energy and systematically performs a verification process to all data referred to in reports verification for Certifications of energy performance of buildings, issued by the energy auditor with a random selection of significant interest or if the agency identifies irregularities in the records of the energy performance certificate. If it is necessary for the energy performance certificates, details of which are found irregularities, the Agency will take measures for verification in place for the building or its unit, which is undergoing the certification process.

The supervision report is issued by the authorized officials of the Agency and the energy auditor, who has issued the "Energy Performance Certificate" for the building or its unit, as well as the entity that owns or is responsible for the management of the building or its unit, which has been certified, is notified of its results. The energy auditor and the entity that owns or manages the building or its unit have the right to appeal to the competent administrative court against the content of the supervision report, within 45 (forty-five) days from the date of issuance and/or notification of the report.

The clients need a permit for major renovation, particularly for works that affect the structure, use, or external appearance of a building. The requirements are guided by Albanian construction law and urban planning regulations. Albanian building authorities are tasked with monitoring construction activities, including major renovations, through municipal urban planning departments.

Compliance with Energy Performance Certificates (EPCs) or other regulatory standards is supposed to be verified post-renovation. This involves checking whether the building's actual performance aligns with the submitted plans.

On-site inspections may be conducted, but their frequency and rigor depend on the authority's capacity. While in larger municipalities like Tirana, inspections may be more regular, smaller municipalities might struggle with consistent enforcement due to limited resources.

In Albania, the content of Energy Performance Certificates (EPCs), including data and calculations, is theoretically subject to control by the relevant building authorities. Nevertheless, the practical enforcement and detailed validation remain inconsistent. Limited resources and institutional capacity can hinder the rigorous control of EPC accuracy and compliance.

For family houses, inspections are required when new construction or major renovations are undertaken, particularly those involving structural changes or energy efficiency upgrades. The municipal building authority may conduct inspections during and after construction to ensure compliance with the permit, building codes, and energy performance requirements.

Energy Performance Certificates (EPCs) are often required for new constructions or major renovations, but rigorous checks of compliance with EPC content may not always occur, particularly for smaller family houses.

Condominiums are subject to stricter regulatory oversight compared to family houses, as they involve multiple units and higher structural and safety risks. Building authorities generally perform inspections at various stages of construction or renovation to verify compliance with architectural plans, safety standards, and energy efficiency regulations.

For condominiums, the EPC typically covers the entire building rather than individual units, focusing on shared systems (e.g., central heating, cooling, insulation). Authorities are more likely to inspect the energy performance details for condominiums due to the larger scale and potential impact of non-compliance.

BEST PRACTICES

CrossCert project stated that quality control mechanism should depend on the calculation methodology, EPC software, EPC document and assessor qualifications. These categories reflect that quality control is often (or can be) applied in different ways for different aspects of the overall EPC framework. For standardised calculation methodologies similar to the UK and Austria, it is possible to eliminate a higher level of errors by implementing validation rules in the EPC software, whereas for more tailored methodologies, such as the Bulgarian methodology, where there are several steps to modelling the building, manual checks by experts might be more critical and should be emphasised. EPC software also plays a role in the quality control mechanism. For countries that allow non-accredited software to be used for issuing EPCs, stricter manual checks by independent experts have a higher priority.

Using automatic checks in the EPC database is an effective way to prevent low-quality EPCs. Implementing automatic checks on lodged EPCs is simpler for countries with less detailed documents. However, more manual in-depth checks

can be implemented for countries such as Austria with highly detailed documents, where inputs and outputs of calculations are provided.

Assessor education, background, and further training requirements vary across countries. Such differences should also be reflected in quality control mechanisms. Countries with lower qualification requirements for assessors can benefit from targeted controls on assessors with low qualifications and experience levels. In contrast, in countries with a more qualified workforce, random checks can be enough to ensure the reliability of EPCs.[14]

RECOMMENDATIONS

Adequate capacity (assigned staff) of building authorities should be ensured to control and enforce compliance with construction regulations, particularly EPC legislation, and to implement penalising sanctions in cases of non-compliance.

While in larger municipalities like Tirana, inspections may be more regular, smaller municipalities should improve their capacity in checking EPCs, particularly for smaller family houses.

Technical Assistance should be engaged to provide instruction and training to municipalities on their range of existing and new responsibilities, including particularly on their enforcement role in the construction process for both newbuild and major renovations with training covering the topics: NCM[15], MEPR[16], nZEB[17], EPCs, technical EE measures in buildings, issuing permits to build, inspection of works, evidences on energy performance and quality, issuing occupancy certificates etc.

Random checks and dissuasive fines may be appropriate tools to enforce the implementation of the measures proposed in the EPCs.

14 D3.6 Proposed harmonised verification framework for quality checking EPC outputs - tinyurl.com/3de7svh3

15 National Calculation Methodology

16 Minimum Energy Performance Requirements

17 Nearly-Zero Energy Buildings

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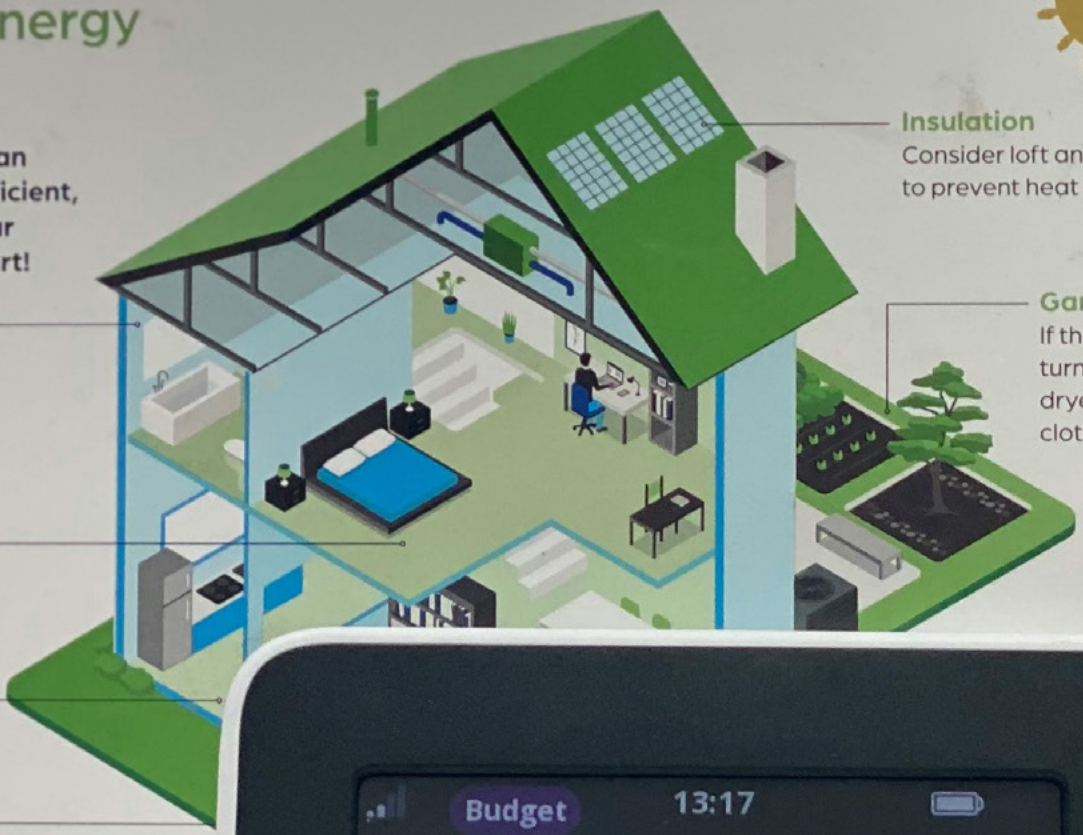

Insulation
Consider loft and wall insulation to prevent heat leakage.

Garden
If the sun is shining turn off the tumble dryer and dry your clothes naturally.

Living Room
Turn off as many ligl
and appliances as
possible when not u
your living room. Fu
energy savings can
be made by avoidir
standby mode.

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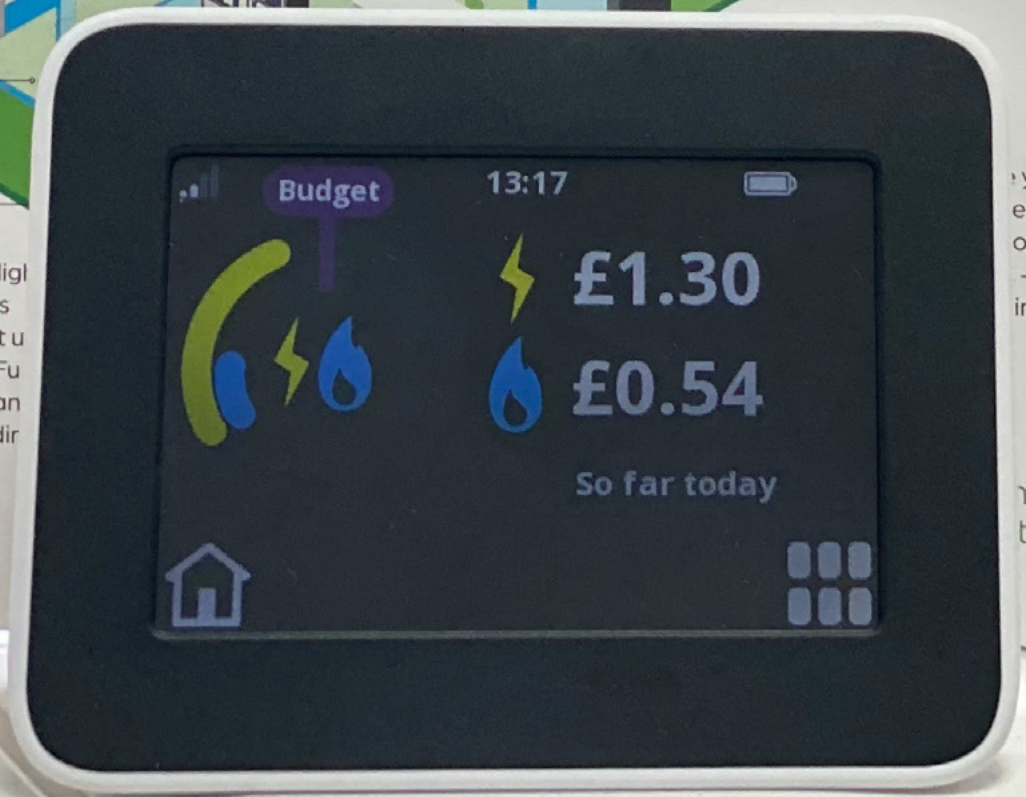

9. Other

EU REQUIREMENTS

Article 19, 20, 21 of the Energy Performance of Buildings Directive provides that Member States should consider financial support for vulnerable households to be able to have an EPC made. EPCs must indicate where more detailed information on cost-effectiveness and financial incentives can be found, such as steps for implementing recommendations and available support. In this point an operating one-stop shop could be suggested. EPCs should be valid for up to 10 years. For buildings with performance below class C, building owners must receive renovation advice within 5 years.

SITUATION IN ALBANIA

The Energy Performance Certificate should be valid for a period of ten years.

There is not foreseen any financial support for vulnerable households for paying an EPC for them.

There is no plan to create a national one-stop-shop advisory network to provide independent advice, tendering and specialist recommendations to help renovators to upgrade their homes energy efficiently. A long-term building renovation Plan has not yet been adopted but is under preparation.

Financial support for renovations

The Ministry of Infrastructure and Energy drafted an order for the approval of the Energy Efficiency Obligation Scheme, which has not been adopted. In terms of funding mechanisms for energy efficiency, no dedicated fund has been established. Investments in energy efficiency are currently being channeled through the state budget and foreign financial aid, with a particular focus on the buildings sector. Furthermore, local banks are actively involved in promoting energy efficiency by offering credit lines for various measures, with a primary focus on enhancing the thermal insulation of building envelopes in private buildings. These initiatives are subsidized with up to 50% of the costs being financed by the Municipality of Tirana. The regulation and model contracts for energy performance contracting of the energy service (ESCO) market model is in place.

BEST PRACTICES, MORE INFORMATION

EPC Recast project suggests that building owners should make the most of the EPC for the price they pay. The content of EPCs could be enriched with information and data obtained from the on-site visit and remote metering. EPC certificates could include information that is additional to simulation results, like blueprints, photos, observations (eg: potential sources of good/bad IEQ, mould, wall cracks etc). Digital apps like BIMEO show this can be already achieved with a tablet. High-quality summaries of metered heating and domestic hot water consumptions should also be reported.[18]

Furthermore, EPCs can become less costly by developing national reference databases including common building typologies, etc., allowing for faster/easier energy rating (and renovation advice) of buildings, as proposed by iBRoad2EPC.[19]

The Hungarian EPC system uses a reference building method for non-residential structures to ensure consistent energy performance requirements across similar building categories.

RECOMMENDATIONS

EPCs should indicate where more detailed information on cost-effectiveness and financial incentives can be found. To achieve this, a one-stop advisory network should be set up in Albania to help with financial options, tender writing and recommending reliable contractors.

To keep EPCs affordable, it is worth considering setting maximum fee levels for EPC assessors in the residential sector or give financial support for vulnerable, energy-poor households to be able to finance energy assessments. Another option is to make EPCs less costly is developing national reference databases including common building typologies, etc., allowing for faster/easier energy rating (and renovation advice) of buildings.

18 D5.9 Policy recommendation paper for an EU wide deployment of EPC RECAST - tinyurl.com/bdd25z2y

19 Technical report on the definition of the proposed concept, content and methodology - tinyurl.com/bdf4cd7c

10. Summarized recommendations

The EPC template should be completed with kWh/m^2/year, CO_2 and energy saving data on the 1st page of EPC form template. It is strongly recommended to define the scale in kWh/m^2/year. To correctly define the scale and determine the best- and worst-performing buildings, a survey should be carried out to determine the energy performance of the top and bottom 15% of buildings. EPCs calculation methodology should be developed.

Renovation proposals should be much more detailed. It is useful to develop proposals for two levels of expectations: cost-effective and deep renovation expectations. To implement this method, cost-effective and deep renovation standard should be defined.

The national EPC database should be developed. It is recommended to store all the data in digitalised form which could be searched by many aspects.

It is proposed to make the national database open. It would help banks and financial institutions to analyse their mortgage portfolio (with anonymized data). EPC's database should be integrated with the land registry and building cadastre.

The number of energy auditors should be increased, mainly in the countryside. It would be very useful to introduce a regular, mandatory training for EPC assessors to maintain qualification and high quality of issued EPCs.

Adequate capacity (assigned staff) of building authorities should be ensured to control and enforce compliance with construction regulations, particularly EPC legislation, and to implement penalising sanctions in cases of non-compliance.

To help to implement the proposals suggested in EPCs, a one-stop advisory network should be set up in Albania to help with financial options, tender writing and recommending reliable contractors.

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