U-CERT
User-Centred Energy Performance Assessment and Certification

EPB CENTER

These projects have received funding from the European Union's Horizon 2020 research and innovation programme. The European Union is not liable for any use that may be made of the information contained in this document, which is merely representing the authors' view.

Web workshop

Building Energy Performance Certificates (EPCs): Convergent evolution?!

01 July 2021, 10h00 – 11h30 CEST

Supported under Service Contract ENER/C3/2017-437/SI2-785.185 Support the dissemination and roll-out of the set of Energy Performance of Buildings standards developed under EC Manadate M/480.

European Commission

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Programme (approximate timings)

10h00-10h05 – **Welcome and general introduction**

by **Andrei Vladimir Lițiu**, Building Performance Adviser, REHVA

10h05-10h25 – **Keynote "The set of EPB standards supports convergence and coherence"**

by **Dick van Dijk**, EPB Expert, EPB Center & Chairperson ISO JAG on ISO 52000 EPB standards

10h25-11h28 – **Moderated panel discussion and Q&A from the audience**

moderated by **Jaap Hogeling**, Chairperson CEN/TC 371, Enery Performance of Building, CEN

Spotlight on the **Next Generation EPCertificates cluster of H2020 projects**

Panagiota Chatzipana-giotidou	Michal Zbigniew Pomianowski	María Fernández Boneta	Olivier Greslou	Stephanie Veselá	Dick van Dijk	Lukas Kranzl

11h28-11h30 – **Closing remarks**

by **Andrei Vladimir Lițiu**

General introduction

- **Building EPCertificates** have now been **around** in the EU's Member States **for at least 10 years**. Underpinned by the **Energy Performance of Buildings Directive (EPBD)**, building performance assessment methodologies (and related certification processes) have been prepared at national level leading to **more than 30 different methodologies** (in some cases several within the same country).
- The **overall context is somewhat different now in 2021** from when **EPCs** were first introduced. Buildings are acknowledged as one of the **key focus areas for delivering the European Green Deal and more specifically the Renovation Wave Strategy**. Furthermore, **finance** is becoming more and more available and will reach in the coming decades the **needed scale to digitally transform buildings** not as a goal in its own right, but as means to an end for **reaching by 2050 a healthy, safe, efficient, flexible and sustainable EU building stock**.
- Policy and finance for buildings are rolling in the needed direction, however on the **technical side the EU's market is still fragmented** due to the different approaches of the Member States. Although, **there's no right or wrong nor better or worse** building performance assessment methodology and ultimately **building physics/science is the same round the globe**, the current situation is **hindering the needed leapfrogging** for immediately reaping the multiple benefits of continuously improving and optimizing the performance of the buildings we live, work, study, heal, relax etc. in.

General introduction

- Policy and finance for buildings are rolling in the needed direction, however on the **technical side the EU's market is still fragmented** due to the different approaches of the Member States. Although, **there's no right or wrong nor better or worse** building performance assessment methodology and ultimately **building physics/science is the same round the globe**, the current situation is **hindering the needed leapfrogg**ing for immediately reaping the multiple benefits of continuously improving and optimizing the performance of the buildings we live, work, study, heal, relax etc. in.
- Fortunately, all the **"technical layer" ingredients are available**, such as the set of **CEN/ISO Energy Performance of Buildings (EPB) standards** and **Horizon 2020 coordination, support and innovation actions** and moreover the **EPBD is currently being revised** (the public consultation closed on 22 June 2021).
- Can we **walk the talk and go farther together** (as opposed to fast alone) in the **spirit of the EU's principles, including subsidiarity**, and facilitate a **convergent evolution to a common building performance coherence framework?**

General introduction

Transition

Build forward together

“Go far, go together”

Business as usual

Build back better

“Go fast, go alone”

Keynote presentation

“The set of EPB standards supports convergence and coherence”

Moderated panel discussion

Spotlight on Next Gen EPCerts H2020

Dick van Dijk

Jaap Hogeling

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Building Energy Performance Certificates: Convergent evolution?!

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10h05-10h25

Your service center for information and technical support on the set of EPB standards

The set of EPB standards supports convergence and coherence

Dick van Dijk

dick.vandijk@epb.center

This project is facilitated by the EU-Commission Service Contract ENER/C3/2017-437/SI2.785185

Start: 21 September 2018 for 3 years

Web workshop: *Building Energy Performance Certificates: Convergent evolution?*

July 1, 2021

in cooperation with U-CERT

User-Centred Energy Performance Assessment and Certification

My background

- EPB Center expert (> 2017)
- Involved in initiation, preparation and coordination of set of EPB standards (2012-2017)
- Convenor of ISO Joint Advisory Group on the (EN) ISO 52000 family of EPB standards, in collaboration with CEN

  ISO/TC 163 & ISO/TC 205, CEN/TC 371
- Convenor of ISO Working Group responsible for few key EPB standards:

  Energy needs heating/cooling, Climatic data, Partial EP indicators (ISO/TC 163/SC 2/WG 15)

Mandate European Commission

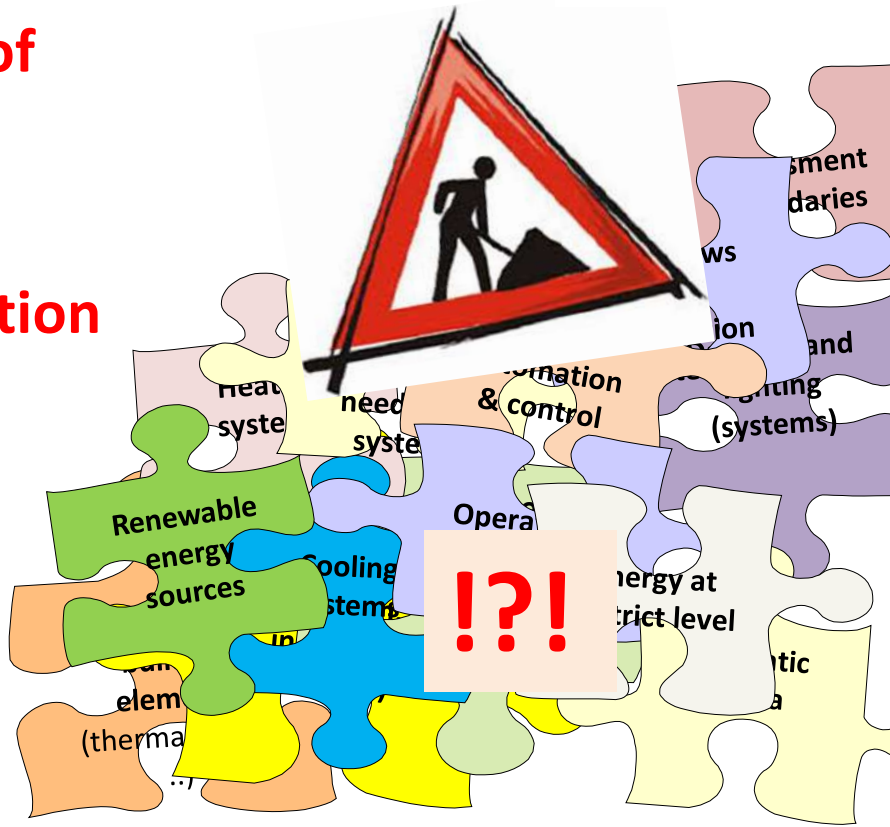
December 2010:

Mandate M480 European Commission to CEN:

to develop a consistent set of standards to assess **overall Energy Performance of Buildings**

to support the EPB Directive (EPBD)

- For **energy performance certification** and to check compliance against minimum **EP requirements**
- **Harmonized** procedures, but:
- with **flexibility** for national situations



Current status

Set of international standards on EPB using holistic approach

- Most EPB standards were published in 2017
  - 17 EPB standards at European (**CEN**) ánd global (**ISO**) level
  - 36 EPB standards at European (**CEN**) level only
- Since 2017:
  - Few EPB standards added
  - Some EPB standards (being) upgraded from **EN xxx** to **EN ISO xxx**

The key EPB standards are all part of the (new) brand:

(EN) ISO 52000 family

Set of EPB standards: Common quality features

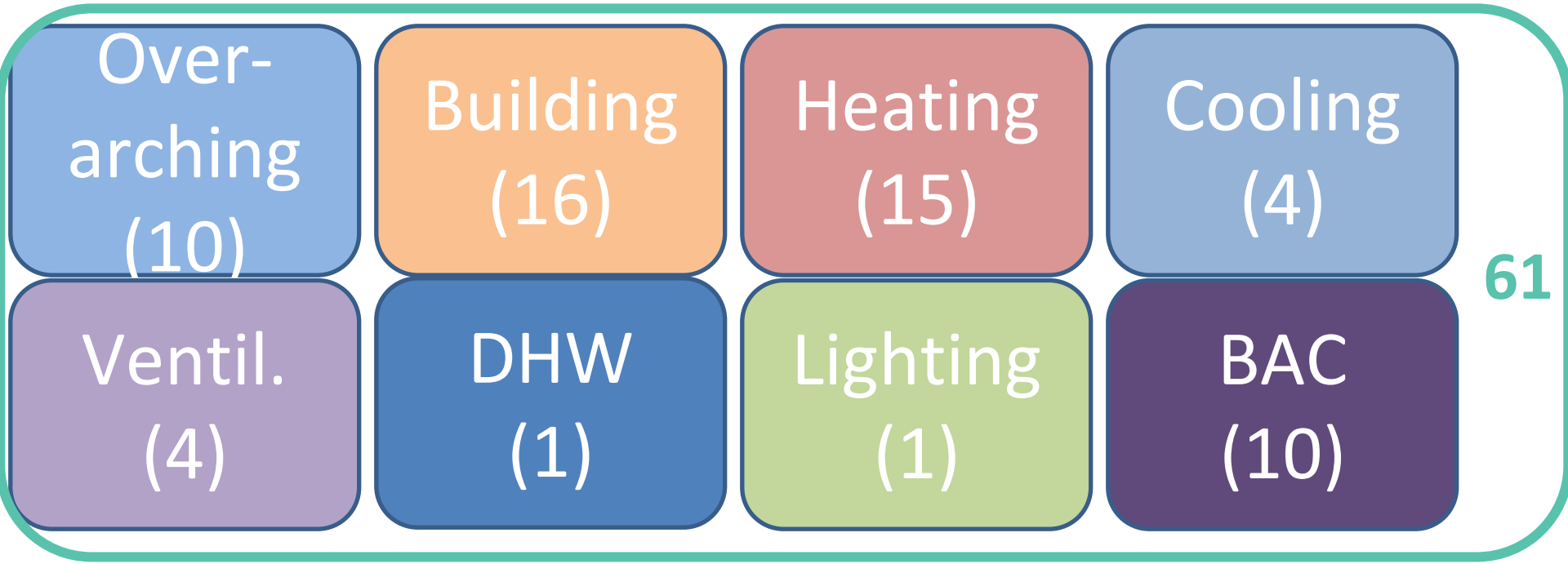
Fit for use in context of building regulations

implementing the EPBD: EP Certificates & EP requirements

- Overarching **framework** (EN ISO 52000-1)
- Common **quality** requirements for all
- Overall **consistency** (incl. output -> input links)
- Common **format**
- **Managed** by multi-disciplinary international team of experts *(ISO/TC 163, ISO/TC 205, CEN/TC 371)*
- Explanation, justification and examples in accompanying set of **Technical Reports** (e.g. CEN ISO/TR 52000-2)
- Validation and worked examples in accompanying **spreadsheets**

Modular approach (1)

Technical topics:



Modular approach (2)

Themes:

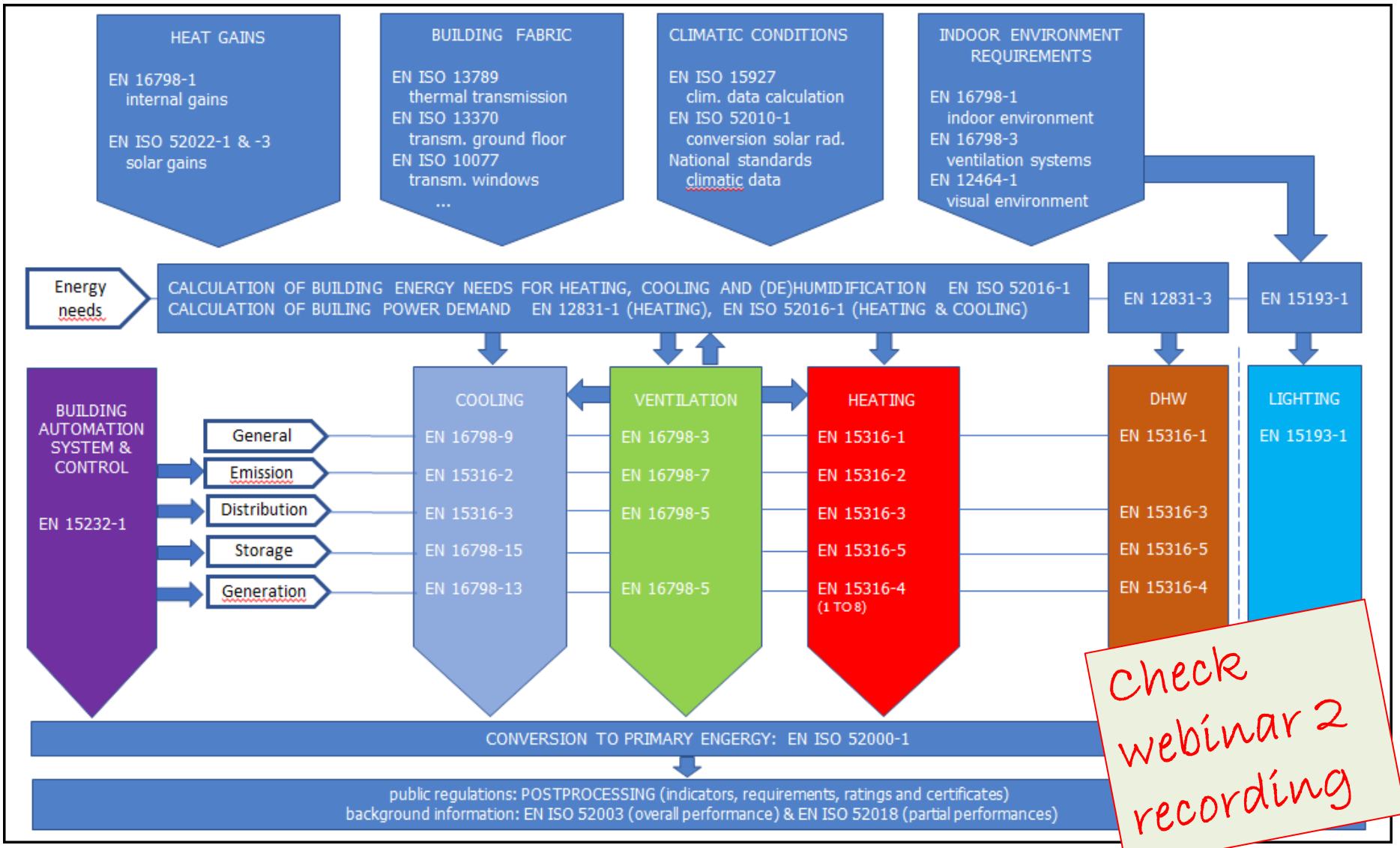
- (EP) Calculation procedures (36)
- Pre-processsing: indoor and outdoor conditions (3)
- Post-processing: EP indicators, requirements or ratings (2)

*)

- (EP) Measurement procedures (1)
- Building, system or component design procedures (11)
- Inspection procedures (4)
- Other (4)

*): Core set for the calculation of the overall energy performance: about 10 to 15 EPB standards

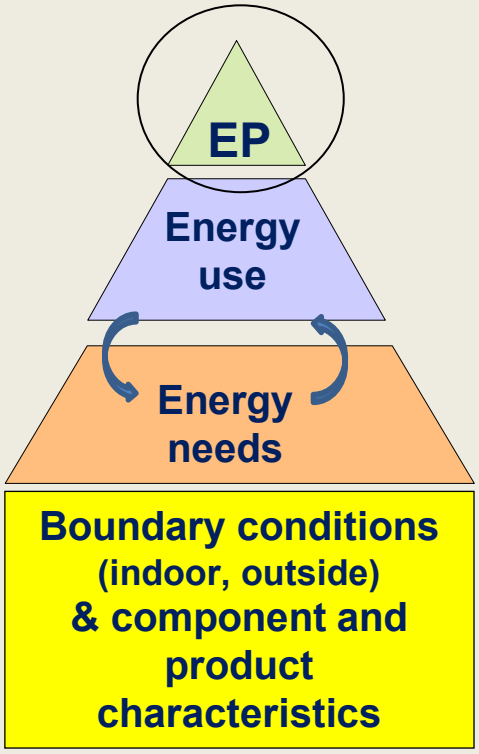
Complete overview



Check webinar 2 recording

Five key EPB calculation standards

EN ISO 52000-1, Overall EPB Framework (common terms, modular structure, ...)



EN ISO 52000-1 Aggregation & conversion to primary energy → EN ISO 52003-1 Overall indicators, requirements, ratings

<< Several system standards >>

EN ISO 52016-1 Energy needs heating and cooling → EN ISO 52018-1 Partial indicators (building fabric, needs)

EN ISO 52010-1 Climatic conditions

Harmonized but flexible

- Clearly identified **options** and **national data** remain necessary

User behaviour	External influences	Cultural influences
Number of users	Actual climate (cold/warm winter/summer)	building tradition
Ventilation etc. behaviour	Actual climate on site (next to sea, in a windy place, etc…)	building typologies
Temperature etc. set points	Actual location (latitude)	culture
Use of shading devices	Shading from other buildings/trees	policy and legal frameworks (including the type and level of quality control and enforcement)
Maintenance of	Annexed buildings	

Check webinar 1 recording

Each EPB standard:

Annex A (normative template for the choices)

Annex B (informative default choices)

➔ ***National Annexes for national or regional choices***

Specifically suited for EPCs and EPB requirements. *Example:*

- **EN ISO 52016-1**, *Energy performance of buildings – Energy needs for heating and cooling, internal temperatures and sensible and latent heat loads– Part 1: Calculation procedures (2017; replaced EN ISO 13790:2008)*
- Contains both **monthly** ànd **hourly** calculation procedures
- NEW! Hourly method = tailored to goal:
  - *Fully described, transparent method*
  - *Input data asked from the user for the hourly method is not more than for the monthly method*
- ➔ *Easy for EP regulators to switch ("upgrade") from monthly to hourly calculations*
- ***Hourly calculation is needed to deal with hourly interactions, innovative solutions, impact on thermal comfort***

Check webinar 4 recording

Need for convergence

Plan to revise EPBD: "*… update of the framework for Energy Performance Certificates with a view to increasing their quality and availability, for example through greater* ***harmonisation****, the inclusion of additional information and more stringent provisions on availability and accessibility of databases.*"

Why harmonization?

- Removes barriers
- Enables efficient and reliable exchange of information
- Ensures level playing field
- Stimulates innovation

Cooperation in U-CERT: Better, user-centred and converging EP Certificates *See panel discussion*

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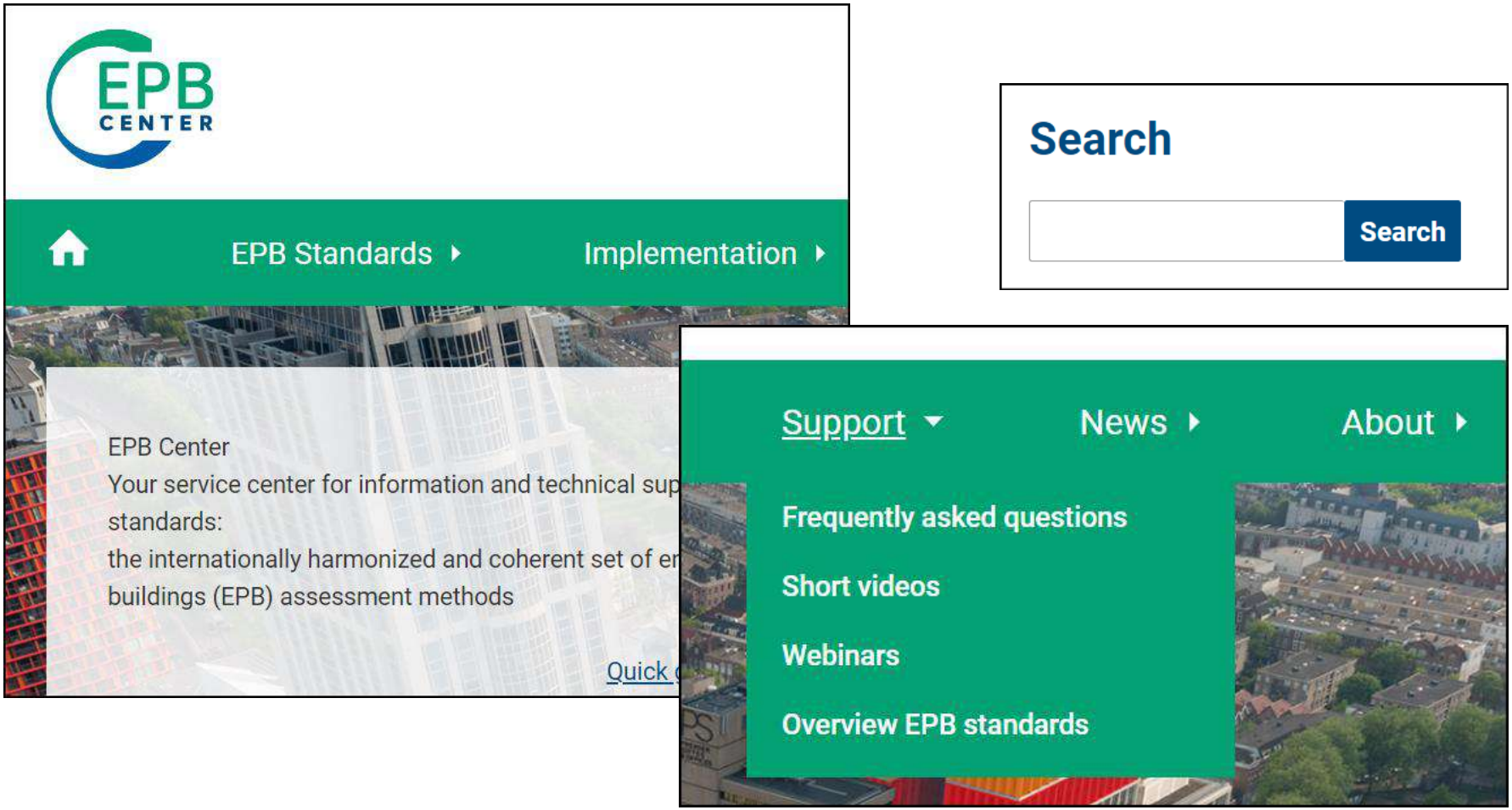
Conclusion

- The set of EPB standards to assess the energy performance of buildings
  - Harmonized, transparent and consistent
  - Specifically suited for EPB Certificates and EPB requirements
  - Flexible: to tailor to national/regional climate, building tradition, legal framework, ..
  - Modular
    - Step-by-step implementation
    - Regular maintenance and updating (knowledge, technologies)
  - Fit for nearly zero energy buildings, new or renovated
  - Small core of standards, with others for specific applications
  - (EN) ISO 52000 family, with common quality requirements

More information?

See EPB Center website www.epb.center



Knowledge base

Even if you are more familiar with the subject (EPB standards, regulations)…

you probably (still) have many questions

Check www.epb.center

- *for short videos and webinar recordings*
- *for overviews and demo tools*
- *for FAQs on a variety of subjects*

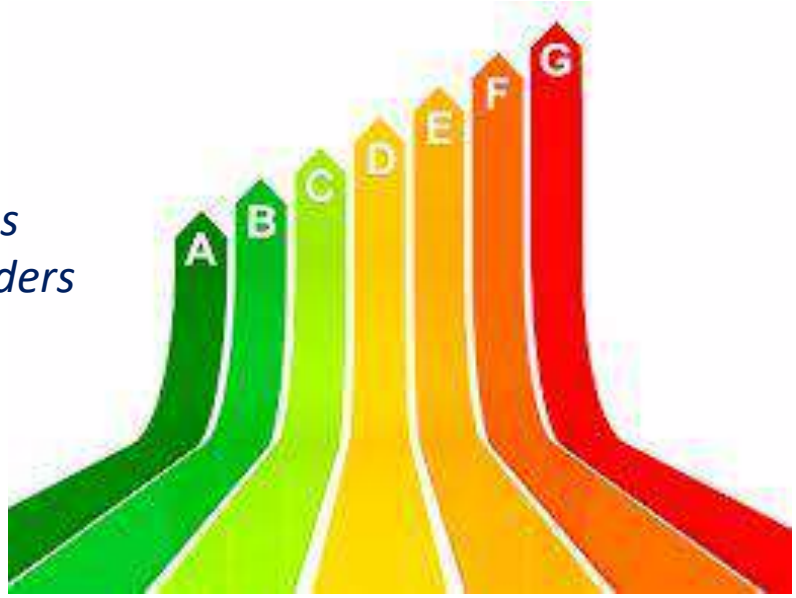
Or contact us (www.epb.center/contact) for more specific technical support and information

EPB Center: a continued build up of services

- The knowledge base available at the EPB Center will continue to expand
- Increasing role as platform to support sister projects
- To further facilitate and enable convergence and access to high quality EPB assessment procedures and EP certificates

Thank you!

EPB Center is also available for specific services requested by individual or clusters of stakeholders



More information on
the set of EPB standards:

www.epb.center

Contact: info@epb.center

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10h25-10h28

Panel discussion **Next Gen EPCertificates H2020 cluster of projects**

Panagiota Chatzipana-giotidou

D2EPC

Michal Zbigniew Pomianowski

E-DYCE

María Fernández Boneta

ePANACEA
Smart European Energy Performance Assessment & Certification

Olivier Greslou

EPC RECAST
ENERGY PERFORMANCE CERTIFICATE RECAST

Stephanie Veselá

Qual DeEPC

Lukas Kranzl

X-tendo

Panellists representing the Next Gen EPCerts H2020 cluster's projects

- Q1: In your project's perspective what **issues/challenges** does the multitude of methodologies create for **building performance processes** (assessment, management, certification, design, construction/installation, inspections, renovation etc.) **in practice** and **vis-a-vis EU's climate and energy targets**?

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- Q2: What kind of **activities is your project conducting** that facilitate and support the **overcoming/mitigation** of the before mentioned **issues/challenges**?

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Q&A audience

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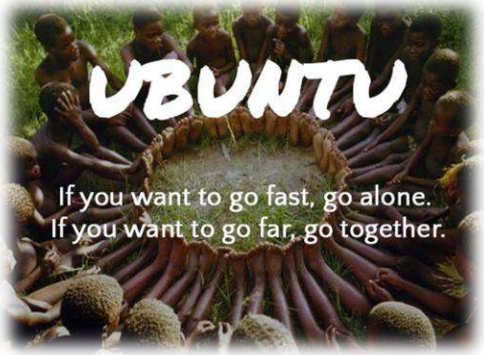

Closing remarks

Andrei Vladimir Lițiu
Building Performance Adviser, REHVA

Blagodarjá!	**Aitäh!**	**Go raibh maith agat!**	**Obrigado!**
Hvala!	**Kiitos!**	**Grazie!**	**Mulțumesc!**
Děkuji!	**Merci!**	**Paldies!**	**Ďakujem!**
Tak!	**Danke!**	**Ačiū!**	**Hvala!**
Dank je!	**Efcharisto!**	**Grazzi!**	**Gracias!**
Thank you!	**Köszönöm!**	**Dziękuję!**	**Tack!**

11h28-11h30