
TOWARDS BETTER DATA ON ENERGY PERFORMANCE OF BUILDINGS

G20 Energy End-Use Data and Energy Efficiency Metrics initiative:

Uncovering the role of digitalization for energy efficiency indicators

21st and 22nd November 2019, Paris, France

Session 5 – The role of new technologies/digitalization for end-use data collection

What are the challenges around use of new technologies for data collection?

Matthias Reuter, Fraunhofer ISI



AGENDA

- Status quo of the handling of EPC in the EU
- EPCs in the EPBD
- What should/could a centralised system look like?
- Conclusions

Status quo of the handling of EPCs in the EU

- Scattered data due to regional databases with different designs, formats and access levels
- Many EPC register still offer no or restricted access
- Data (even aggregated) is only shared by a few registers

	Type of register	Public EPC register	Limited access	No access
Austria	Regional		x	
Belgium	Regional		x	
Bulgaria	Central			x
Cyprus	Central			x
Czech Republic	Central			x
Germany	Central			x
Denmark	Central	x		
Estonia	Central	x		
Spain	Regional	depend on region		
France	Central		x	
Finland	Central			x
Greece	Central			x
Croatia	Central			x
Hungary	Central		x	
Ireland	Central	x		
Italy	Regional	depend on region		
Latvia	Central			
Lithuania	Central	x		
Malta	Central			
The Netherlands	Central	x		
Poland	Central			x
Portugal	Central	x		
Romania	Central			x
Slovakia	Central	x		
Slovenia	Central		x	
Sweden	Central	x		
United Kingdom	Central	x		

Source: <https://ec.europa.eu/energy/en/content/public-epc-registers>

Status quo of the handling of EPC in the EU

Aims:

- More comprehensive and more recent statistics on the European Building stock (e.g. BSO*)
- Open interfaces for input and output can help to improve coverage
- Joining data from different regional and national databases

* BSO: <https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-performance-of-buildings/eubuildings>

Source: <https://ec.europa.eu/energy/en/content/public-epc-registers>

EPC in the latest recast of the EPBD

- The newly added Article 10 Paragraph 6a requires that

“Databases for energy performance certificates shall allow data to be gathered on the measured or calculated energy consumption of the buildings covered, including at least public buildings for which an energy performance certificate, as referred to in Article 13, has been issued in accordance with Article 12.”

- Together with Article 10 Paragraph 6b, stating that

*“**At least aggregated anonymised data** compliant with Union and national data protection requirements shall be made **available on request for statistical and research purposes** and to the building owner.”*

→ this implies several new challenges for the design and implementation of currently existing databases.

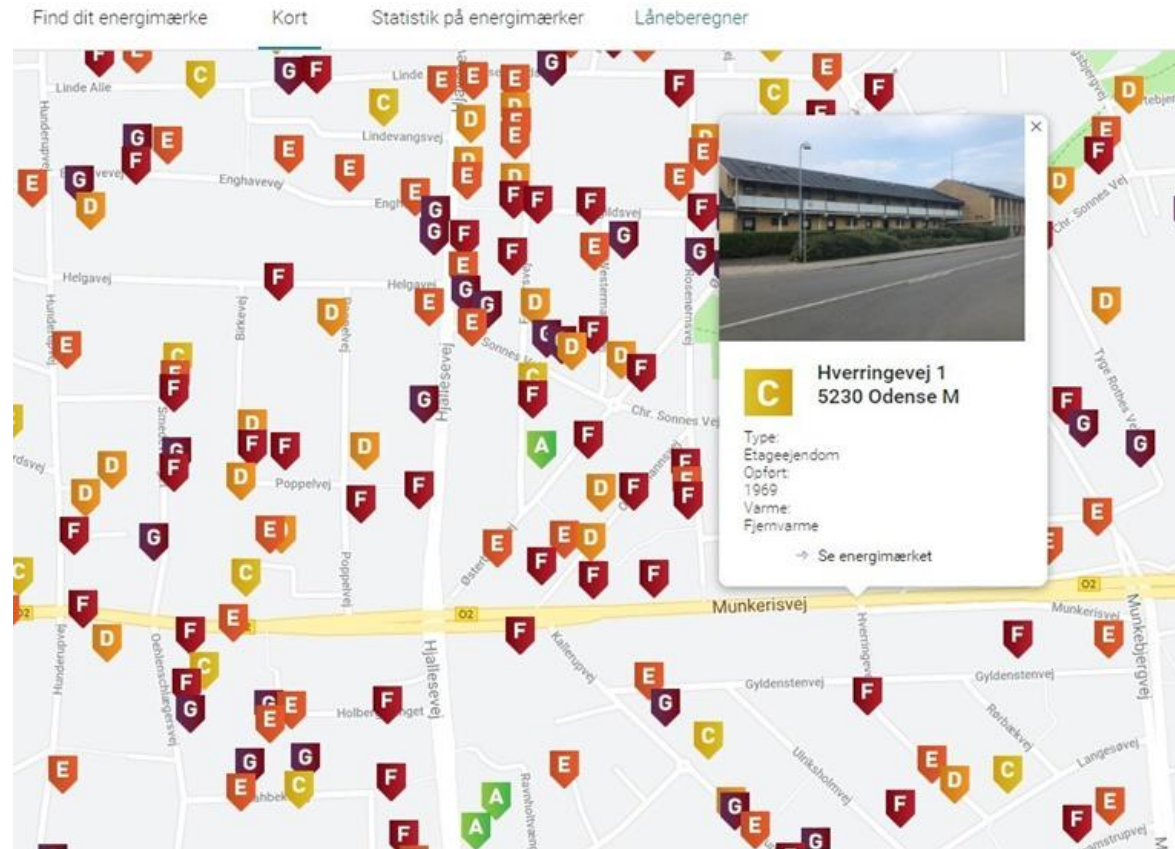
→ Using the need for change to improve the system

Denmark's implementation: Role model for a central database?

- Generally, it can be stated that for an EPC database to be effective, the following conditions need to be met (Loga et al., 2012):
 - data is collected in one central database
 - data is of high quality (ensure high education and skills of the building energy performance expert)
 - data is updated on a regular basis
 - data is comprehensive so that it is possible to extract enough information from the database to redo the energy performance calculation
 - database must be based on professional database management tools to ease analyses and reporting from the database
- By implementing a system that broadly fulfils these criteria, the Danish authorities have effectively used EPC and other public information to inform stakeholders in the buildings sector and contribute to energy savings.

Denmark's implementation: Role model for a central database?

- Denmark was one of the first European countries to create a central EPC register
- the database contains almost 600,000 building certificates covering almost 40% of the total building stock.
- the EPC database supports **open and free standardized data formats** (e.g. XML or editable pdf).



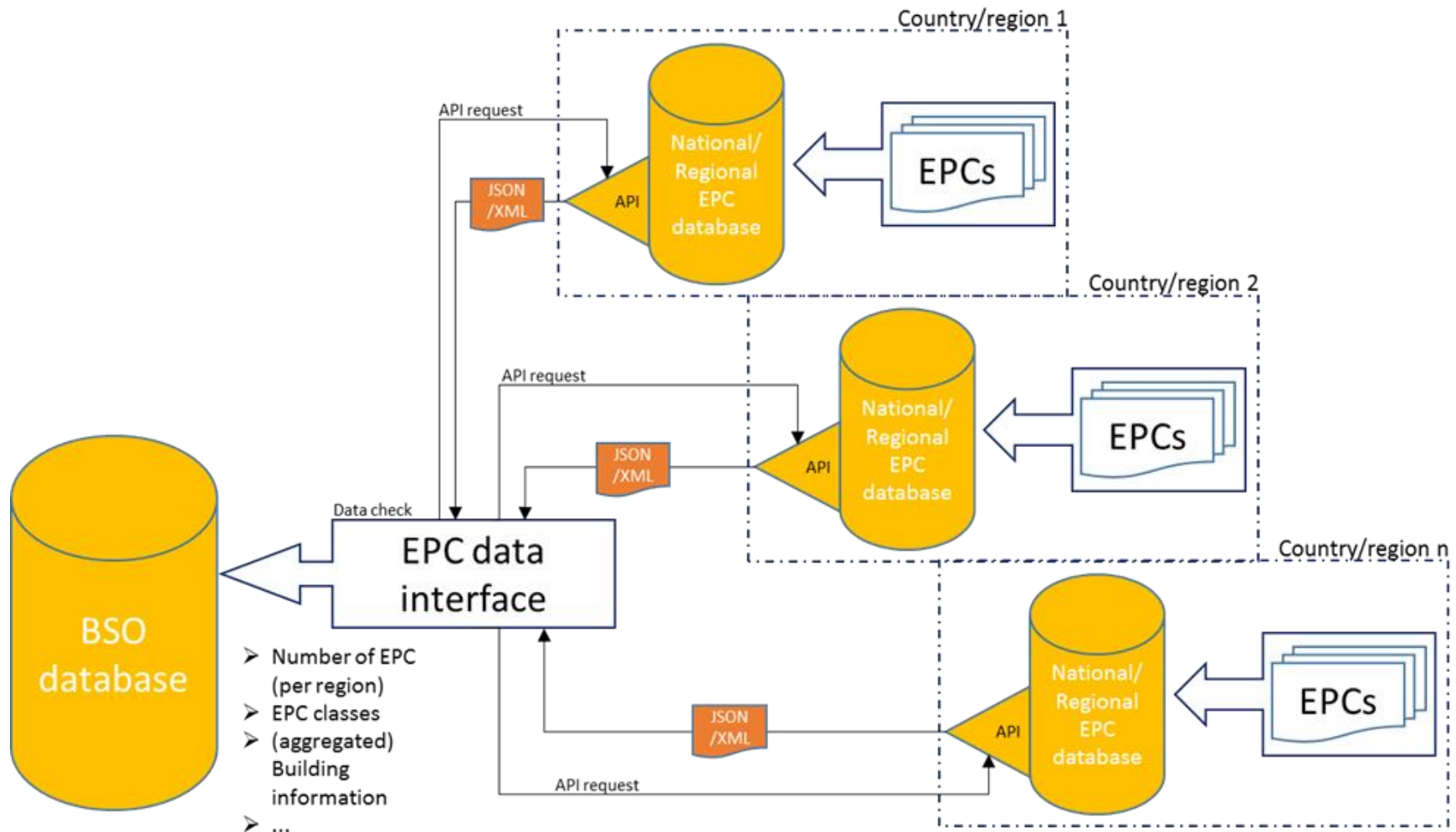
<https://sparenergi.dk/forbruger/boligen/energimaerkning-boliger>

Denmark's implementation: Role model for a central database?

- Learning from Denmark and studies on the effectiveness of EPC registers a central European register can be designed
 - Enhancing data of the Building stock observatory (BSO)
 - Improving quality and effectiveness of national implementations
 - Provide regional/local data

- Such an implementation should be using open standards and recent technologies for direct data exchange (e.g. APIs)
 - ➡ Towards more “real time” data

Denmark's implementation: Role model for a central database?



Conclusions

- A central European database designed the right way could
 - Improve national implementations of EPC registers
 - Improve data availability, timeliness and spatial resolution

- Challenges:
 - A suitable standardization has be found to include all existing databases
 - Legal basis is necessary
 - Data security and privacy risk have to be minimized

Thank you very much!

Contact: matthias.reuter@isi.fraunhofer.de