

Review of the Current State of Development of the Progress Indicators in National Long-Term Renovation Strategies

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Summary

The Commission Recommendation (EU) 2019/786 created a clear path towards a low and zero-emission building stock by 2050, based on milestones and progress indicators. National Long-Term Renovation Strategies (LTRS) are required to ensure the renovation into energy efficient and decarbonised buildings. This paper reviews the current status of the development of the progress indicators carried out by the Member States.

Introduction

European directives and strategies, such as Directive (EU) 2018/844 [1], the European Green Deal and the Renovation Wave, point out the importance of decarbonising the building sector in achieving the climate targets set by the European Union (EU) for 2030, 2040 and 2050. In this sense, the decarbonisation of existing buildings is a priority. To do so, it is necessary to increase the current annual energy renovation rate from 0.4 - 1.2% to a renewal rate of 3% according to the European Commission. One of the most important barriers to increasing the rate of energy refurbishment is the lack of open data on the progress that is being carried in the different member countries. For this reason, Directive (EU) 2018/844 recommends that EU countries use measurable progress indicators to monitor the actual gradual decarbonisation of national building stocks.

In this way, this paper's aim is to review the current state of the development of this progress indicators.

Methodology

The paper is proposed as a review of the current state of the progress indicators in the countries, comparing the development presented in their LTRS, with the progress indicators proposed in the Commission Recommendation (EU) 2019/786 [2].

Results

A comparative table has been made with the current status of the European and national progress indicators of each country, observing a significant lack in their implementation due to the absence of data. This lack of data is an aspect indicated by several countries.

Conclusions

Obtaining reliable indicators of progress is a key point to be tackled in the future strategies of the member countries.

The most frequently provided indicators are the reductions of emissions and the actual energy savings achieved, with a general lack of cost-effectiveness of main renovation measure.

Within the indicators sets provided by the countries, the most represented blocks are: 32% correspond to the overview of the national building stock, 24% to the estimate of expected energy savings and wider benefits, 12% to the promotion of smart technologies, 10% to energy poverty.

The Government of Spain has contributed only with 17 in the ERESEE 2020 [3] out of the 70 indicators proposed in the European Recommendation, most of which remain without contributing due to their difficulty in obtaining it. Twelve of them, the 70%, correspond to the general vision indicators of the real estate stock.

Only three strategies meet half of the proposed indicators out of the 30 countries with strategies, 9 have no indicators, and 19 have fewer than 5 and 24 of the strategies have fewer than 10 indicators.

REFERENCES

- [1]. DIRECTIVE (EU) 2018/844 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 May 2018 [...] energy performance of buildings [...]. Official Journal of the European Union.

[2]. THE EUROPEAN COMMISSION. COMMISSION RECOMMENDATION (EU) 2019/786 of 8 May 2019 on building renovation. Official Journal of the European Union

[3]. MITMA. 2020 UPDATE OF THE LONG-TERM STRATEGY FOR ENERGY RENOVATION IN THE BUILDING SECTOR IN SPAIN (ERESEE). June 202

Table 1. Relationship between the progress indicators of the Commission Recommendation 2019/786 and the LTRS of each country.

EPBD Article 2a	Indicators	Flanders	Wallonia	Bulgaria	Croatia	Cyprus	Czechia	Finland	France	Greece	Hungary	Ireland	Latvia	Lithuania	Luxembourg	Malta	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	Nº of countries
(a) overview of the national building stock, based, as appropriate, on statistical sampling and expected share of renovated buildings in 2020;	Nº of buildings per building type		X								X						X				X		4
	Nº of buildings per building age		X							X							X				X		4
	Nº of buildings per building size		X														X				X		3
	Nº of buildings per climatic zone																X						1
	Nº of dwellings per building type		X					X				X					X				X		5
	Nº of dwellings per building age		X							X							X				X		5
	Nº of dwellings per building size								X								X				X		3
	Nº of dwellings per climatic zone																X						1
	Nº of m2 per building type		X														X				X		3
	Nº of m2 per building age		X														X				X		3
	Nº of m2 per building size		X														X				X		3
	Nº of m2 per climatic zone																X						1
	Annual energy consumption per building type		X					X	X			X					X	X			X		7
	Annual energy consumption per end use		X								X						X				X		4
	Annual % of renovated buildings per building type		X								X						X				X		4
	Annual % of renovated buildings per building age		X					X			X				X	X	X	X					7
	Renovated m2 per building type		X	X	X						X				X		X						6
	Renovated m2 per building size		X														X						2
	Renovated m2 per building age		X														X						2
	Number of EPCs per building type		X	X					X	X	X	X					X				X		7
	Number of EPCs per energy class		X						X	X	X	X					X						5
	Number of NZEBs per building sector					X			X		X						X	X	X		X		7
m2 of NZEBs per building sector					X					X						X	X					4	
(b) identification of cost-effective renovation	Cost-effectiveness of main renovation measures		X							X						X							3
	Cost-effectiveness of main renovation measures									X						X							2
(c) policies and actions to stimulate cost-effective deep renovation	Total energy saving potential per building		X	X	X					X						X	X						6
	Total and annual proportion of buildings undergoing deep renovation		X	X			X	X		X						X	X						6
(d) overview of policies and actions to target the worst-performing segments of the national building stock	Public incentives for deep renovation		X	X							X					X							4
	Public and private investments in deep renovation		X	X							X					X							2
(e) policies and actions to target public buildings	Energy savings from deep renovations		X													X							2
	Public investments in policy addressing thermal renovation		X	X												X	X				X		5
(f) overview of national initiatives to promote smart technologies and well-connected buildings and communities, as well as digitalisation	% of rented houses with EPCs below a ceiling									X						X							2
	Energy poverty indicators: % of people affected		X							X				X		X							4
(g) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	Energy poverty indicators: proportion of affected population		X							X				X		X	X						5
	Energy poverty indicators: arrears on utility bills		X	X						X				X		X							5
(a) the aggregated reduction of	Energy poverty indicators: population living in energy poverty		X	X						X				X		X							5
	% of buildings in lowest energy classes		X	X						X				X		X							4
(b) use of public and accessible and transparent	m2 of renovated public buildings per building type		X	X						X						X					X		5
	m2 of renovated public buildings per building age		X	X						X						X					X		5
(c) guiding investment	m2 of renovated public buildings per climatic zone															X							1
	Nº of buildings equipped with building energy management systems		X		X		X			X	X					X	X						7
(d) accessible and transparent	Public and private investments in smart technologies		X							X						X							3
	Citizens participating in energy efficiency initiatives		X							X						X	X						4
(e) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	Nº of graduated students university courses		X							X						X	X						4
	Nº of graduated students professional/technical courses		X							X						X	X						4
(f) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	Nº of installers skilled in new technologies		X							X						X	X						4
	Budget of national research programmes		X							X						X	X				X		5
(g) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	Participation of national universities in training		X							X						X	X						4
	Reduction in energy costs per household		X	X											X	X	X	X		X	X		8
(a) the aggregated reduction of	Decrease in energy poverty		X													X	X						3
	Actual energy savings achieved		X	X	X		X			X			X	X	X	X	X	X	X	X			12
(b) use of public and accessible and transparent	Average/aggregate indoor air quality in dwellings		X	X			X			X													4
	Thermal comfort index (TCI)		X				X									X							3
(c) guiding investment	Cost of avoided illnesses		X													X							2
	Reduction in health costs attributable to energy efficiency		X											X		X							3
(d) accessible and transparent	Reduction of whole life carbon		X													X							2
	Disability Adjusted Life Year (DALY)/Quality Adjusted Life Year (QALY)		X													X							1
(e) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	Labour productivity gains from better work environment		X													X							2
	Reduction of emissions		X	X	X			X		X		X	X	X	X	X	X	X	X	X	X	X	14
(f) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	Employment in the building sector (Nº of jobs)		X	X	X											X	X						5
	GDP increase in the building sector		X	X										X		X	X						5
(g) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	% energy imports for the Member State (excluding EU countries)		X																				1
	Removal/prevention of accessibility barriers		X																				3
(a) the aggregated reduction of	Nº of integrated/aggregated projects		X								X							X					3
(b) use of public and accessible and transparent	Perceived risk of energy efficiency		X														X						2
(c) guiding investment	Public investments as percentage of total energy efficiency investments		X								X					X							3
(d) accessible and transparent	Public-private partnership initiatives		X								X					X	X						4
(e) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	Investment in energy efficiency renovation		X													X							2
(f) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	One-stop shop initiatives in place		X													X	X						3
(g) evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.	Awareness-raising initiatives (number, target audience, etc.)		X								X						X	X					3
Total		70	16	59	3	6	1	5	9	2	3	39	1	2	11	4	4	65	25	2	7	17	1