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## EXECUTIVE SUMMARY

# EU BUILDINGS CLIMATE TRACKER 2<sup>nd</sup> EDITION A CALL FOR FASTER AND BOLDER ACTION



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BPIE (Buildings Performance Institute Europe) is a leading independent think tank on energy performance of buildings. Our vision is a climate-neutral built environment, aligned with the ambition of the Paris Agreement, and in support of a fair and sustainable society. We provide data-driven and actionable policy analysis, advice, and implementation support to decision-makers in Europe and globally. [www.bpie.eu](http://www.bpie.eu)

# EXECUTIVE SUMMARY

The EU Buildings Climate Tracker (EU BCT) monitors the progress of the building stock in the European Union towards the goal of achieving climate neutrality by 2050, in the form of an index. This second edition analyses the progress of the EU building stock towards climate neutrality from 2015 until 2020.

The tracker finds that the EU building stock remains off track to achieve climate neutrality by 2050. Compared to the previous results, the decarbonisation gap is slightly reducing, but not to the degree necessary to bring the sector on track towards climate neutrality. The tracker's value for 2020 should be at 18.1 points but is only at 7.8, resulting in a gap of over 10 decarbonisation points. This significant gap means that the effects of policies and support programmes to decarbonise EU buildings must urgently increase in the coming years.

Figure 1<sup>1</sup> shows the difference between the observed results and the necessary progress. The gap between the actual progress made until 2020 (dark blue line) and the reference path (grey dotted line) is significant. The actions taken after 2015 have not been effective enough to decarbonise the EU building stock as much as required. Since 2015, the start of the index, around 3.6 points of decarbonisation progress would have been required every year. From 2019 to 2020 the gap has decreased only by 1.1 points, not enough to stay on the path of climate neutrality. Based on the current situation, **4.7 points of progress in the decarbonisation of the building stock are required every year to get on track by 2030.** The longer we delay, the harder it will be to get on track. Now is time to bring the EU building stock on track towards climate neutrality.

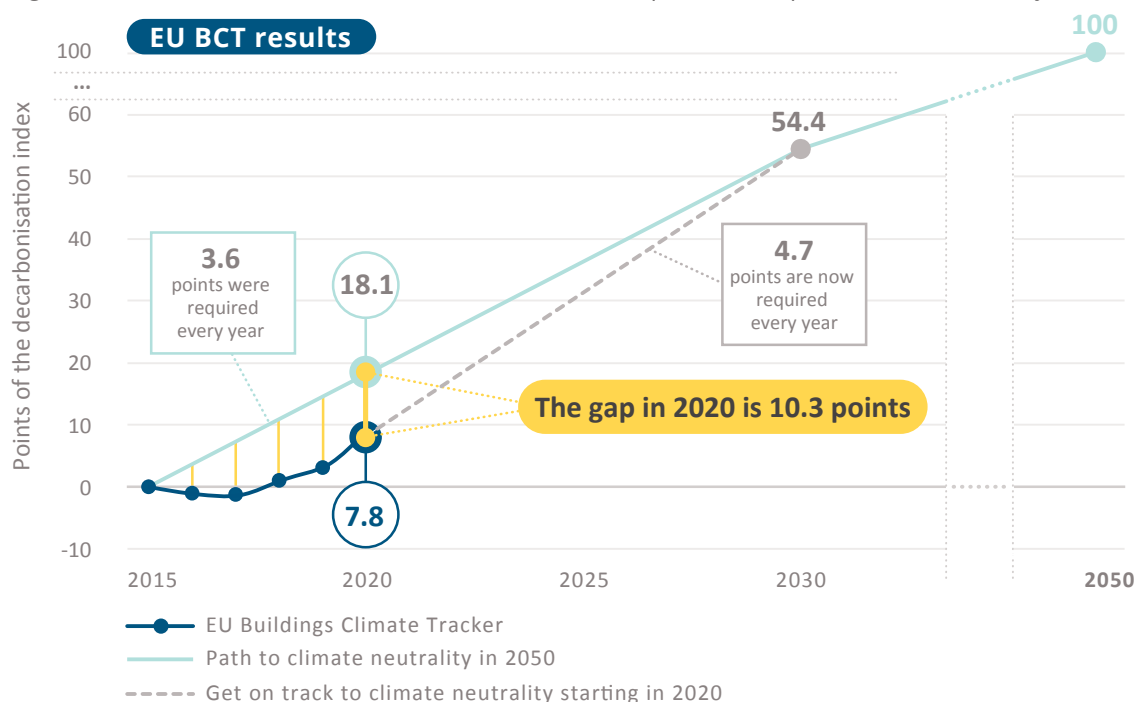


**The EU Buildings Climate Tracker finds that the EU building stock remains off track to achieve climate neutrality by 2050. The decarbonisation gap is not reducing to the degree necessary to bring the sector on track towards climate neutrality.**



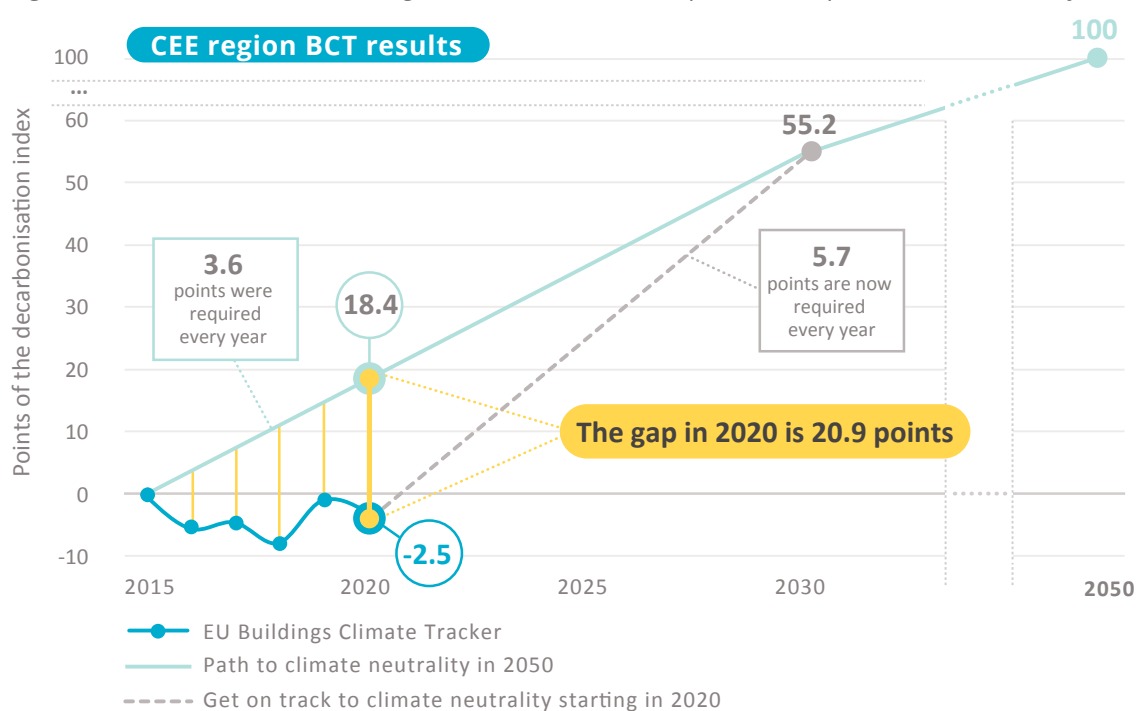
<sup>1</sup> Due to a technical correction the historical index values are different from those published in the first edition. Please refer to Annex IV for more details.

**Figure 1: EU BCT results for the EU in 2015-2020 and the required development to be on track by 2030.**



This edition also includes a separate analysis of the Central and Eastern European (CEE) region (Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). The analysis for the CEE countries shows a more worrying trend: by 2020 the progress to decarbonise the building stock is 21 points off the required decarbonisation path, the largest gap since the beginning of the tracker period in 2015, as presented in Figure 2. This requires a significant increase of efforts to implement effective policies in the near future. Based on the current situation, **5.7 points of progress in decarbonisation are required every year in the CEE region to get on track by 2030.**

**Figure 2: EU BCT results in the CEE region 2015-2020 and the required development to be on track by 2030.**



## HOW IS THE EU BUILDINGS CLIMATE TRACKER GENERATED?

The tracker corresponds to an index composed of a set of five indicators monitoring CO<sub>2</sub> emissions, final energy consumption, renewable energy share, investments in renovation, and domestic energy expenditures.

When looking at the progress between 2015 and 2020, the results for most of the indicators show a gap between the current status and the values required to be on track towards climate neutrality. These gaps highlight the need to strengthen efforts to improve the EU building stock to achieve the goals established for each indicator.

- **In 2020, CO<sub>2</sub> emissions from energy use in buildings reached 422 Mt CO<sub>2</sub>, more than 18% higher than the required goal value. The reduction of CO<sub>2</sub> emissions from the EU building stock is clearly off track.** Energy efficiency measures and renewable energy supply should be accelerated to reduce the CO<sub>2</sub> emissions resulting from the operation of the EU building stock.
- Considering both households and the service sector, **final energy consumption has seen no significant progress**, with only a 1% reduction between 2015 and 2020. This calls for clear and effective schemes to support and promote deep renovation, especially in the worst-performing buildings, to reduce the CO<sub>2</sub> emissions from energy use.
- Considering only the residential sector, it is observed that the **final energy consumption in households by 2020 has not reduced compared to the starting value in 2015, but instead is 1.2% higher**. By 2020, this indicator is 7.6% higher than the target value for that year. It is important to notice that the final energy consumption in households in 2020 could have been even higher due to people spending more time at home and other consumption patterns linked to the COVID-19 pandemic restrictions. This expected trend might have been balanced by energy savings due to an exceptionally mild winter (the value of heating degree days in 2020 was the lowest registered in recent decades<sup>2</sup>).
- **The share of renewable energies for heating and cooling was around 30% lower than required, which calls for a clearer roadmap to decarbonise the heating and cooling sector.** Decarbonisation of heating and cooling needs to be linked to energy efficiency measures to reduce the heating and cooling needs of the EU building stock.
- **Accumulated investments in renovation in 2020 were 40% lower than required.** Greater investment and better-targeted investment schemes are needed, along with better access to existing funding opportunities.
- Energy expenditures per household were close to achieving the targeted values in 2020, but the subsequent increase in energy prices may negatively impact this indicator. The consequences of not reducing household energy expenditures can be significant, especially in regions with high energy poverty levels like **the CEE region, where household energy expenditure was already 6.3% higher than the required value in 2020.**

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<sup>2</sup> According to the Eurostat database, which has records for heating degree days since 1979.

In 2020, four out of the five main indicators were off track: <sup>3,4</sup>

Indicator		CURRENT STATUS 2020	
1	CO <sub>2</sub> emissions	<b>OFF TRACK</b>	<ul style="list-style-type: none"> <li>a. Emissions from energy use in households reached 301 Mt CO<sub>2</sub>, which was <b>20.7% higher than the required value.</b></li> <li>b. Emissions from energy use in service sector buildings reached 121 Mt CO<sub>2</sub>, <b>13.2% higher than the required value.</b></li> </ul>
2	Final energy consumption	<b>OFF TRACK</b>	<ul style="list-style-type: none"> <li>a. Final energy consumption in households was 2,886 TWh, <b>7.6% higher than the target.</b></li> <li>b. Final energy consumption in service sector buildings was 1,410 TWh, meeting the target (1,462 TWh).</li> </ul>
3	Renewable energy share	<b>OFF TRACK</b>	<ul style="list-style-type: none"> <li>a. The share of energy from renewable sources for heating and cooling reached only 23%, <b>11.4 percentage points lower than the target.</b></li> <li>b. The share of energy from renewable sources in gross electricity consumption reached 37.4%, <b>1.6 percentage points below the target.</b></li> </ul>
4	Investments in renovation	<b>OFF TRACK</b>	Accumulated to €1,771 billion, <sup>5</sup> <b>41.2% lower than the target.</b>
5	Domestic energy expenditure	<b>ALMOST ON TRACK</b>	Reached €1,406 per household. <sup>6</sup>

**The need to improve and strengthen strategies supporting the decarbonisation of the building stock in the EU demands immediate action.** This means seizing opportunities such as the ongoing recast of the Energy Performance of Buildings Directive (EPBD) to get on track towards a climate-neutral building stock. As the main legislative instrument to advance the decarbonisation of buildings at EU level, the EPBD must set ambitious goals, trigger action and establish monitoring mechanisms to guide Member States' efforts to deliver a climate-neutral building stock by 2050.

EPBD provisions<sup>7</sup> regarding **zero-emissions buildings (ZEBs)**, **a whole-life carbon approach** for the EU building stock, **minimum energy performance standards (MEPS)**, the **review of EPCs** and a **financial support framework for building renovation and decarbonisation** are crucial to tackle the lack of progress. Effective, immediate, and robust EPBD provisions and additional strategies can enable the reduction of final energy consumption in buildings, reduction of CO<sub>2</sub> emissions from non-renewable energy supply (especially for heating and cooling), reduction of energy poverty, and increase of investments in renovation, as summarised below. All these improvements will contribute to bridging the gap between the path the EU is currently following and the required path to achieve climate neutrality by 2050.

<sup>3</sup> The detailed analysis for each indicator and the results for the CEE region can be found in the full report.

<sup>4</sup> Two potential indicators covering the energy performance certificates (EPCs) and the use of primary solid biofuels for space heating were also investigated. The analysis for EPC ratings exposes two main challenges: a) the EPC schemes across Member States are not harmonised and their comparison is very limited; b) there is a lack of aggregated EPC data at the national and EU levels, and the data available is often not consistent. The analysis of primary solid biofuel use shows many households depend on this energy source to fulfil their space heating requirements (biomass represents almost 90% of the renewable energy for space heating in households).

<sup>5</sup> Adjusted to 2015 euro values.

<sup>6</sup> Adjusted to 2010 euro values.

<sup>7</sup> An overview is available in BPIE's report on [Assessment of co-legislators positions and recommendations](#)

# WHAT IS EXPECTED FROM THE EPBD TO GET ON TRACK WITH CLIMATE NEUTRALITY?



BENEFITS TOWARDS  
DECARBONISATION

## ZEB DEFINITION

- The use of **fossil fuel heating systems** in new buildings **should not be allowed**
- The ZEB definition must have **well-defined low thresholds** for energy needs
- **New buildings should be constructed as ZEBs** as soon as possible

Final energy  
consumption and  
CO<sub>2</sub> emissions  
reduction

## WHOLE-LIFE CARBON APPROACH

- Clear principles on **how to measure, disclose and limit whole-life carbon** of buildings should be defined
- An implementation plan should be developed, including a clear **timeline and incentives** for data collection and generation

CO<sub>2</sub> emissions  
reduction

## MEPS

- MEPS should be designed to **address the worst-performing buildings first**, establishing clear targets, milestones and timelines
- MEPS should be accompanied by an **effective compliance support and enforcement system** to monitor and track their deployment and impacts

Final energy  
consumption,  
energy  
expenditures, and  
CO<sub>2</sub> emissions  
reduction

## EPCs

- **EPC thresholds and definitions should be aligned with ZEBs and MEPS**
- **Quality principles are required** for EPCs as a tool to support decision-making (buy/sell, renovation trigger/advise, etc.)
- High **EPC rollout** and **better national databases** should be pursued

Final energy  
consumption,  
energy  
expenditures, and  
CO<sub>2</sub> emissions  
reduction

## FINANCIAL FRAMEWORK

- Strategies to **improve access to existing funding programmes** should be developed
- Funding programmes should be **designed and targeted to achieve the greatest energy savings and social benefits**

Investments  
in renovation  
increase, final  
energy consumption  
reduction

## RENEWABLE ENERGY SYSTEMS

- **Ambitious targets and clear roadmaps** to decarbonise building heating and cooling systems should be integrated in national building renovation plans

CO<sub>2</sub> emissions  
reduction

## RENOVATION

- **Deep renovation should be a guiding principle** reflected in the design of all policy measures and financing programmes
- **Technical information to support initiatives should accelerate**, e.g. one-stop-shops and strategies to engage inhabitants
- Better schemes should be implemented to **monitor the number and type of renovation activities being carried out**

Investments  
in renovation  
increase, final  
energy consumption  
reduction



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