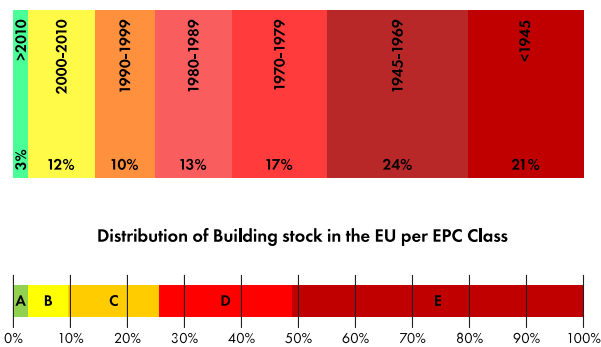


### Implementation of the Paris Agreement in the real estate sector by 2030 and 2050 - a look towards Europe and the future

By 2050, the world population will grow to almost 10 billion people. In order to cope with this growth, current studies assume that the global demand for existing buildings will double by 2050. Most of this population growth will take place in Asia, 60% of which will take place in the current decade, i.e. by 2030. Europe, on the other hand, faces a different challenge.

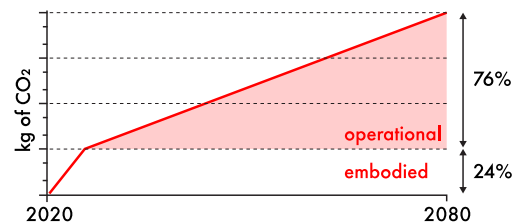
Distribution of Building stock in the EU by age



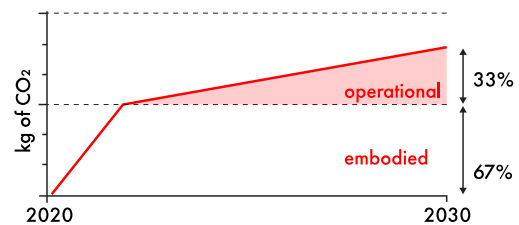
Data from: State of the building stock briefing, 2017, BPIE ©Bluecon Engineering GmbH, 2020

According to recent UN studies, population figures will remain virtually unchanged. In Europe, the challenge is therefore not only to create new housing. For example, 75-90% of the building stock required by 2050 is already in place. However, according to a 2017 study by the Buildings Performance Institute Europe, approximately 35% of the buildings in Europe are older than 50 years, 97% of the building stock is not energy efficient enough, does not meet the Energy Performance Class A (EPC Class A) and needs to be renovated to meet the upcoming greenhouse gas reduction targets. The European building stock must be extensively refurbished in the coming years to meet the Paris Agreement targets.

Comparison of a buildings operational and embodied carbon until 2080



Comparison of a buildings operational and embodied carbon until 2030



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With regard to the necessary renovations, the so-called "time-value of carbon" is one of the groundbreaking factors. Defined by the Carbon Leadership Forum in the USA, it describes how measures implemented today are irreversible in terms of their greenhouse gas emissions. If necessary remediation measures are already being carried out today without considering the complete CO<sub>2</sub> emissions, all emissions caused by them are also irreversible.

It is due to this fact that future regulations, e.g. a CO<sub>2</sub> tax, will assess measures already implemented today that do not meet the objectives of the Paris Agreement. Property owners who carry out refurbishments today and consider future regulations will therefore not only achieve operational savings by increasing efficiency, but will also secure a competitive advantage in the market.

### Implementation of the Paris Agreement in the real estate sector by 2030 and 2050 - a look towards Europe and the future

Looking around Europe, a number of countries can be identified that play a pioneering role. In the Netherlands, for example, a regulation (Bouwbesluit) has existed since 1992 that sets limits for "embodied carbon". Life cycle assessments (LCAs) have been mandatory for new residential and commercial buildings since 2013. These LCAs are converted to a value of all negative environmental impacts in €/m<sup>2</sup>. Since January 2018, the limit for this value has been set to 1€/m<sup>2</sup>/year.

A further example can be seen in Oslo, Norway. The city's strategy is to reduce emissions by 95% compared to the base year 1990. This goal is to be achieved by 2030. The city also aims to become completely independent of fossil fuels by that time, which is already being achieved on a large number of construction sites. In Oslo, for example, construction machines are used that run on biodiesel or electricity.

A quantitative target for embodied carbon will be set by the city as soon as enough data has been collected to set a realistic target.

An example of how a CO<sub>2</sub> tax can be designed is provided by the city of New York. It has already passed "Local Law No. 97" in 2019, which provides absolute figures for CO<sub>2</sub> emissions (in kg CO<sub>2</sub>e per square foot). Exceeding this limit will be punished by a fine. The first reporting will take place in 2024.



Unlike in Asia, the challenge facing the real estate industry in Europe until 2050 will largely not be the creation of new housing. Instead, the renovation of existing buildings will play a critical role. In order to achieve the climate goals of the Paris Agreement despite these renovations, future regulations are already being drawn up today. Renovation measures that are carried out today and ignore this consideration will lead to additional costs and further disadvantages on the market.

#### About us

BLUECON is an innovative real estate consultant from Germany, Frankfurt am Main. We support our customers around the globe in the construction and real estate industry with planning, consulting and management services along the entire value chain of real estate and have made it our business to make new and existing properties futureproof.

We make #realestate #futureproof.

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