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DANISH EXPERIENCES ON THE POSSIBILITIES FOR REDUCING WHOLE-LIFE CARBON IN BUILDINGS

PROFESSOR HARPA BIRGISDOTTIR

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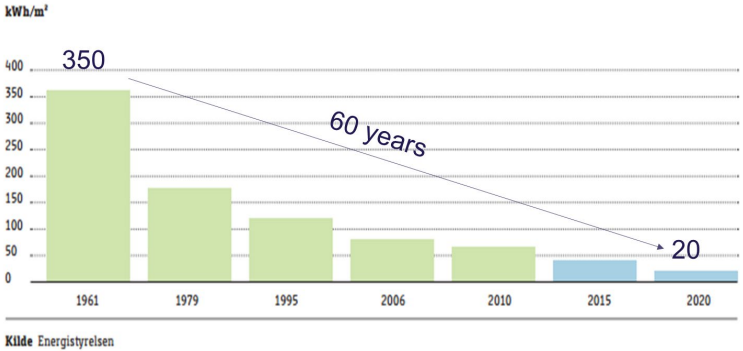
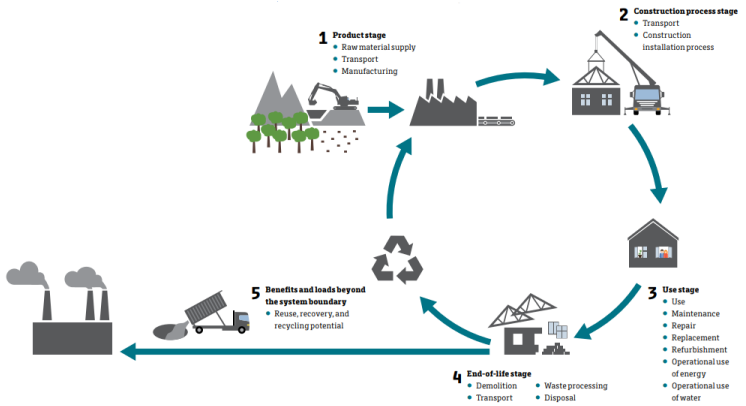
1. Development of the operational energy requirements



Kilde Energistyrelsen

2. Focus on building life cycle



10 years of Focus on LCA on Buildings in Denmark

2011-2012
Green Building Council Denmark
DGNB certification incl. LCA on buildings

2014
The Danish Government:
Political strategy for buildings with
Vision for a Voluntary Sustainability Class in the Building Code

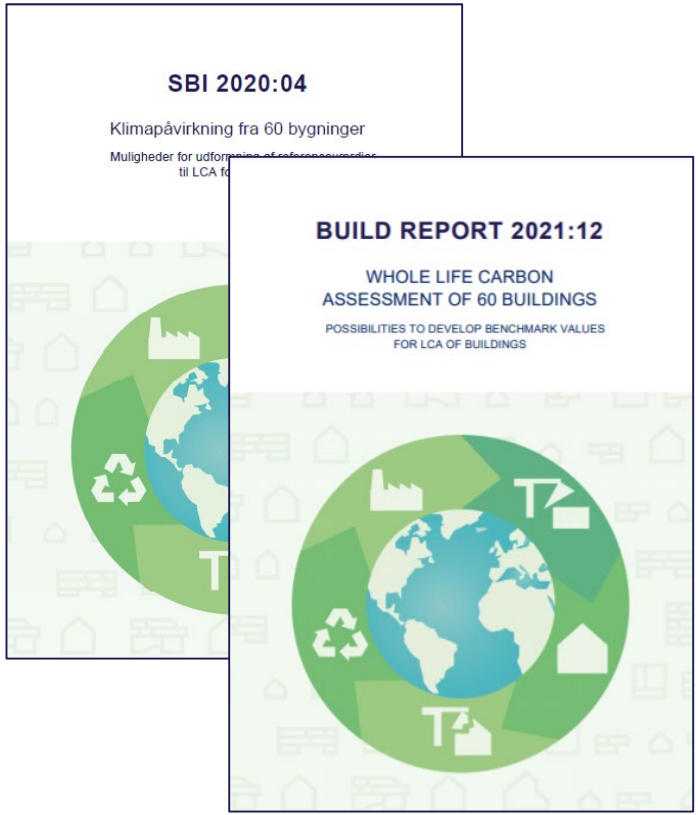
2015
National LCA-tool LCAbyg launched in April 2015
Several publications

LCAbyg

2020
The Danish Government:
Voluntary Sustainability Class launched

2021
The Danish Government:
National strategy for sustainable construction

Report: Whole Life Carbon Assessment of 60 Danish Building cases



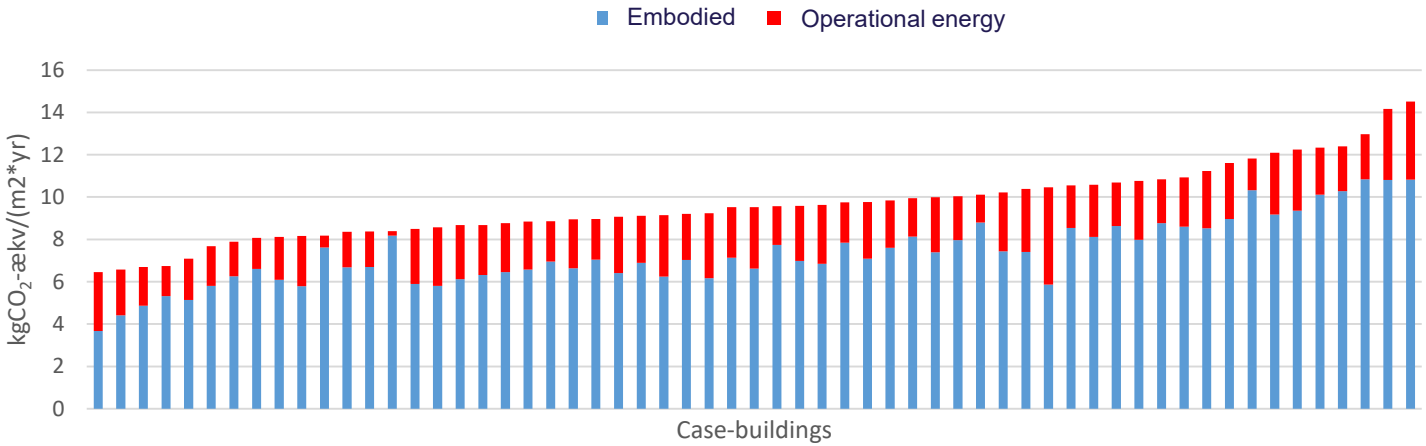
Purpose

- To establish sufficient data background on the climate impact of buildings in Denmark over their life cycle.
- On the basis of this, possible reference values are calculated and suggested

https://sbi.dk/Assets/Klimapaavirkning-fra-60-bygninger/SBi-2020-04.pdf

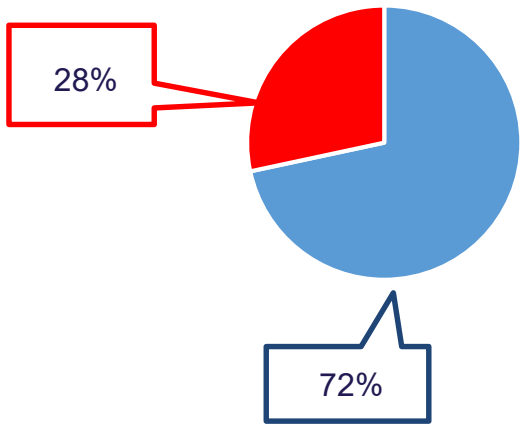
https://vbn.aau.dk/da/publications/whole-life-carbon-assessment-of-60-buildings-possibilities-to-dev

Whole Life Carbon (50 years reference study period)

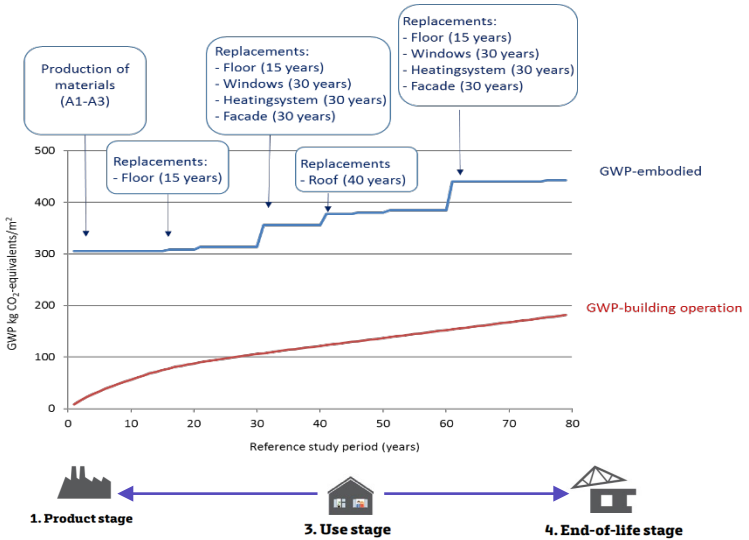


Important lessons for whole life carbon of new buildings

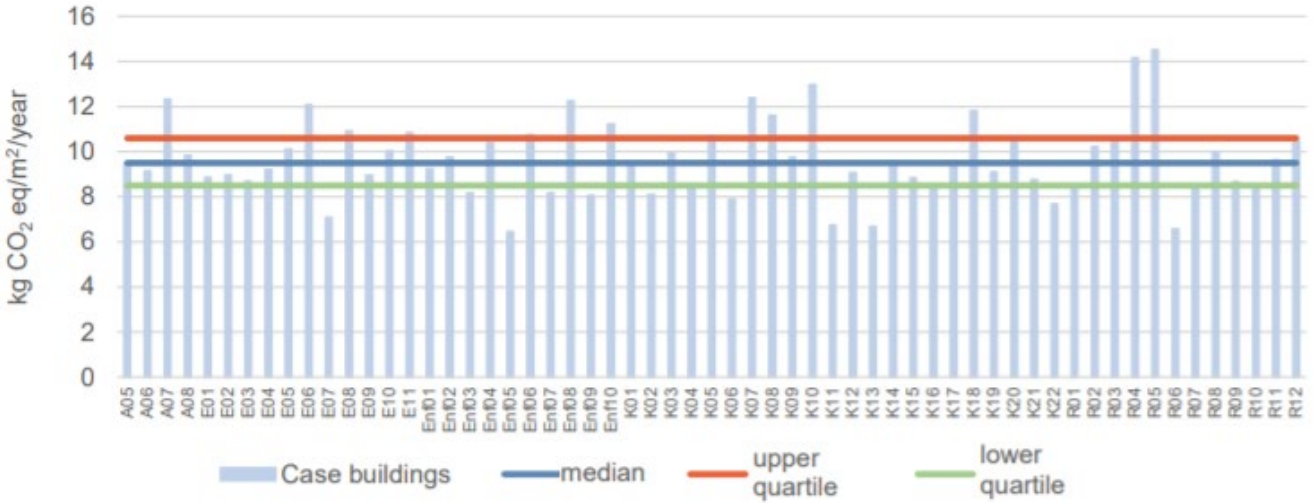
1. The importance of embodied



2. The timing of emissions



Suggestions for reference values (benchmarks)



Climate partnerships suggestions of limit values (in 2020)

https://www.frinet.dk/media/3174/climate-partnership-construction-report-march-2020-bat-kartellet.pdf

	Building regulation kg CO_2/m^2/year	Voluntary sustainability class kg CO_2/m^2/year
2021	12	8,5
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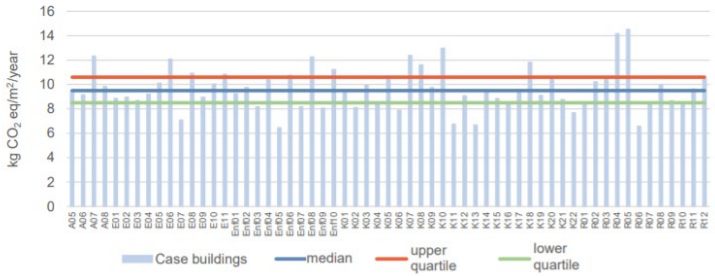
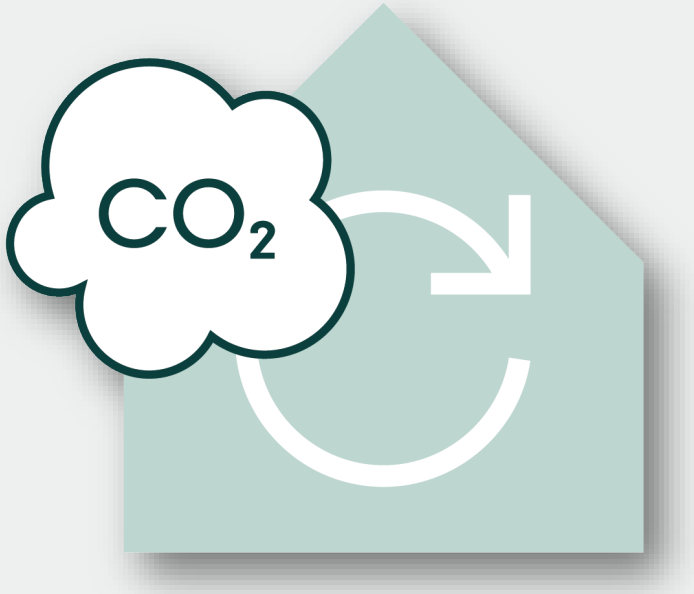
2030	6	3,5 - 4



Embodied Carbon regulation for DK

5. March 2021

- Upcoming LCA requirements
- Separate requirements for small and larger buildings (2023)
- Buildings over 1000m^2 required to meet a limit value for CO_2
- New requirement from 2025, 2027, 2029.
- Additional more ambitious volunteer targets
- Parties meet again in 2023, 2025, 2027 to tighten the target



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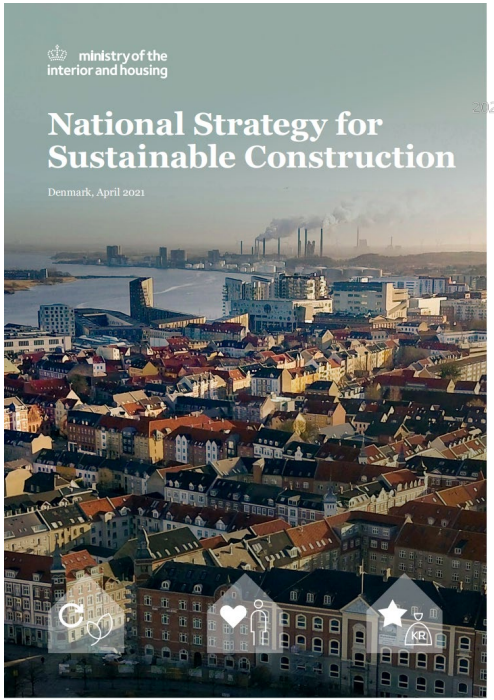
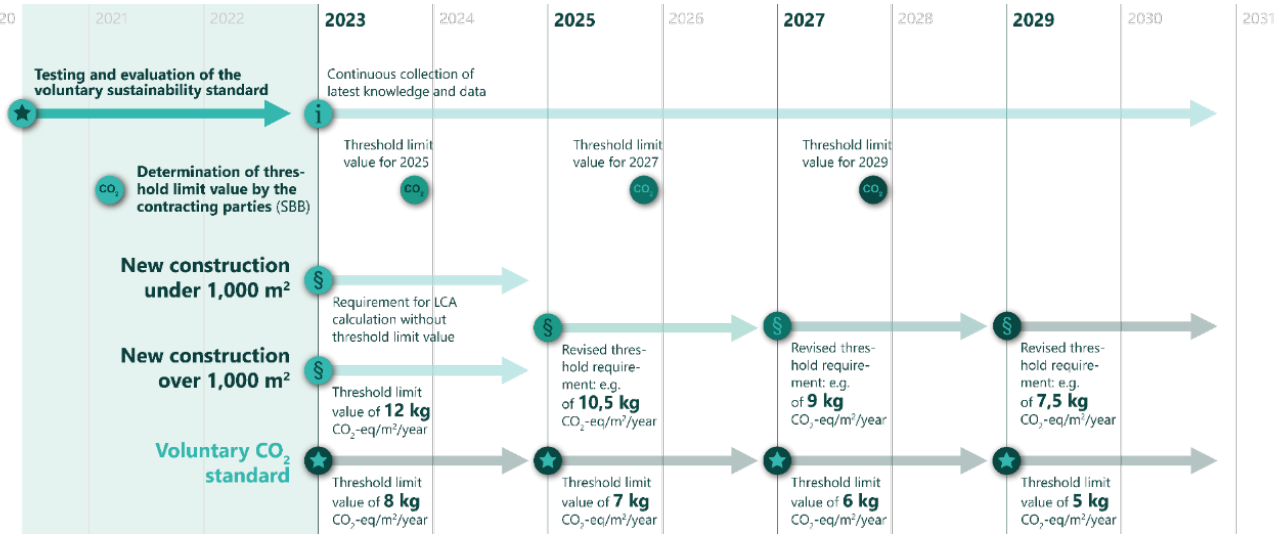
New national strategy (2021)





https://im.dk/Media/637602217765946554/National_Strategy_for_Sustainable_Construktion.pdf

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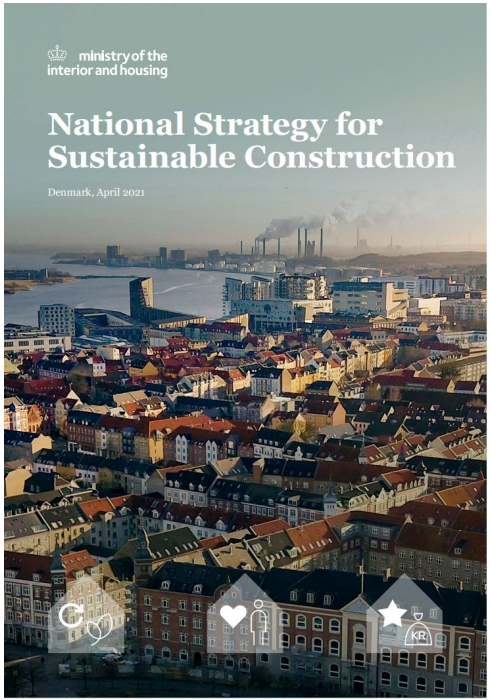

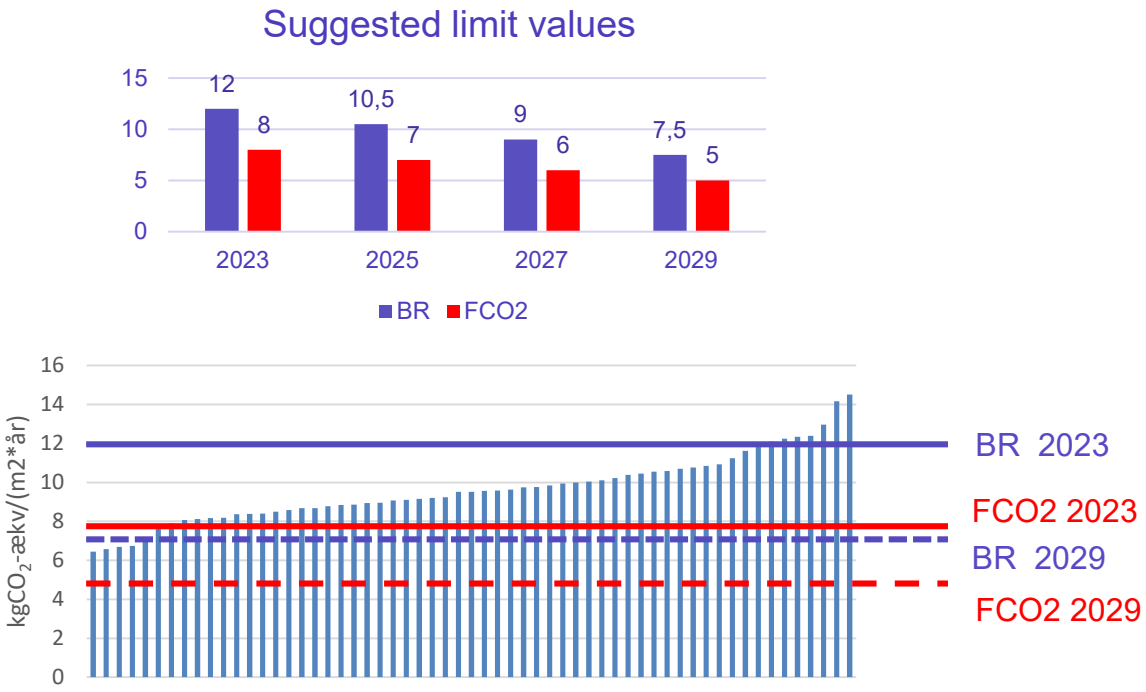

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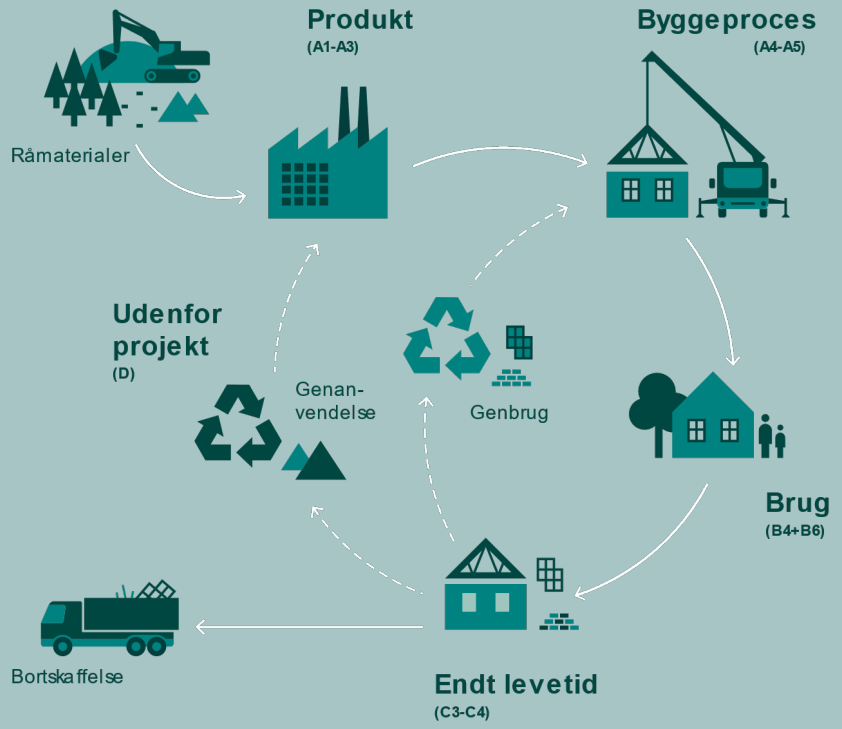
Preparation for the CO_2-regulation

Data collection for more data for upcoming LCA-regulation and limit value

- The knowledge and calculation basis for future determinaton of limit values will be expanded in the upcoming years
- Experience and data is analyzed
- Definition for system boundary
- Certain building types
- Development and LCA tool
- Define the upcoming LCA criteria



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