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# A national perspective on buildings' renovation

*Making the renovation wave happen through the new Energy Performance of Buildings Directive*

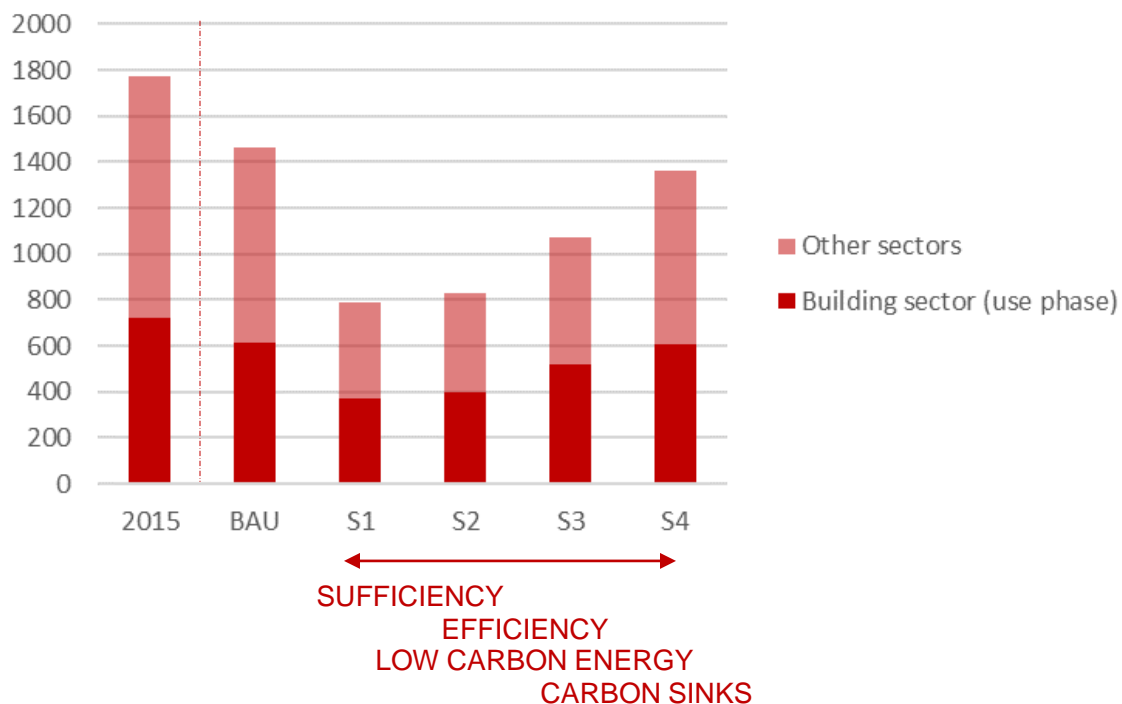
**April 12<sup>th</sup>, 2022**

# Carbon neutrality in 2050 in France: how can the building sector contribute?

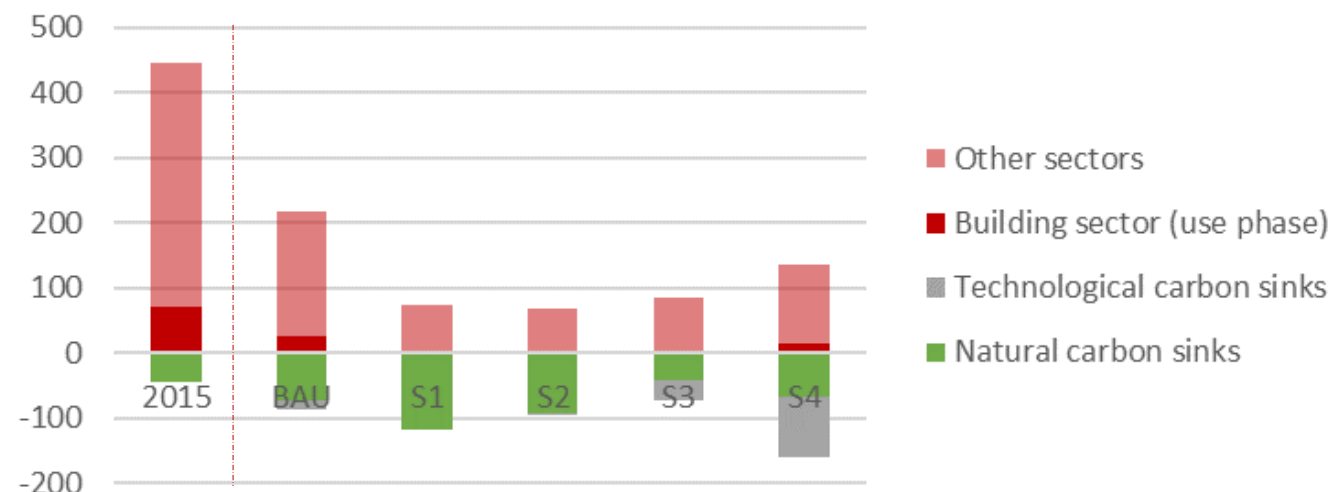
A STEEP DECREASE IN ENERGY CONSUMPTION...

... AND A NEARLY TOTAL DECARBONATION OF THE BUILDING SECTOR

Energy consumption in France in 2050 (TWhEFpci)



GHG emissions in France in 2050 (MtCO<sub>2</sub>eq)

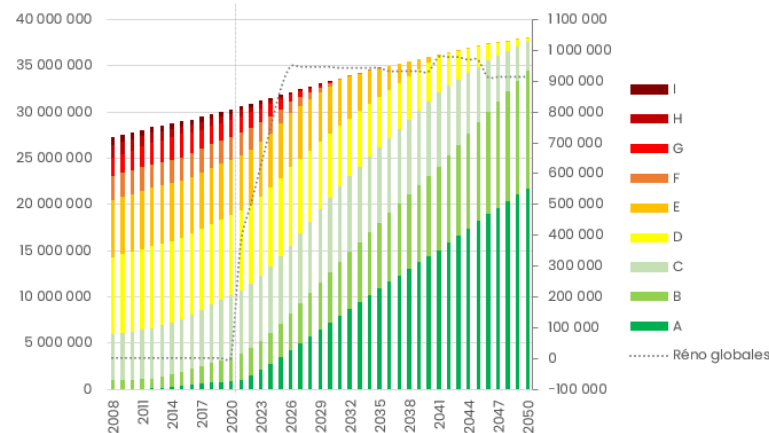


Only S1 reaches a 55% reduction in GHG emission by 2030

# How deep should we renovate the French building stock to reach carbon neutrality?

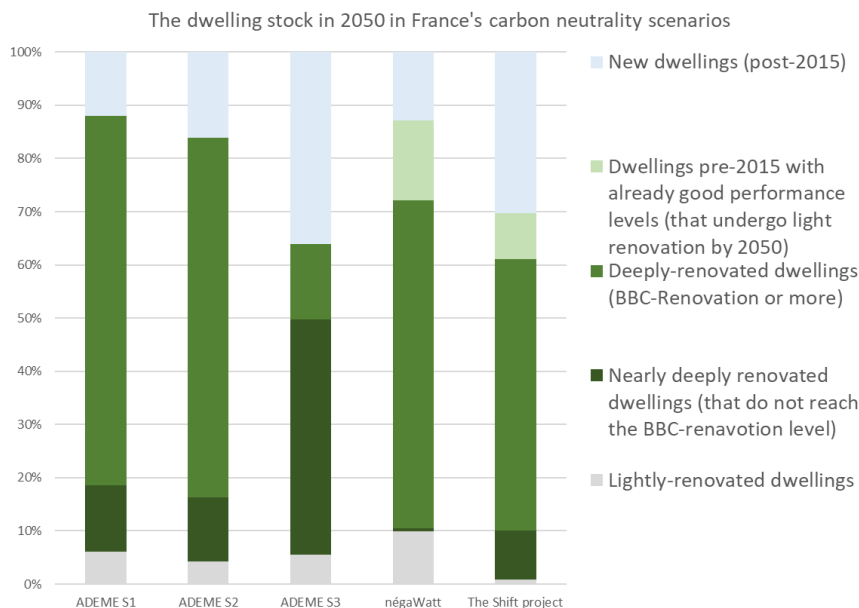
In all scenarios that limit the use of technological carbon sinks (ADEME S1,S2 & S3, Shift Project, négaWatt)

RENOVATING ALL THE BUILDING STOCK, NOT ONLY THE LEAST PERFORMANT BUILDINGS



The Shift Project Scenario – Evolution of dwellings by energy certificate

NEARLY ALL DWELLINGS NEED TO REACH A HIGH PERFORMANCE LEVEL



BBC Renovation = 80 kWhEP/m2/year

NON RESIDENTIAL BUILDINGS ALSO NEED HIGH RENOVATION RATES

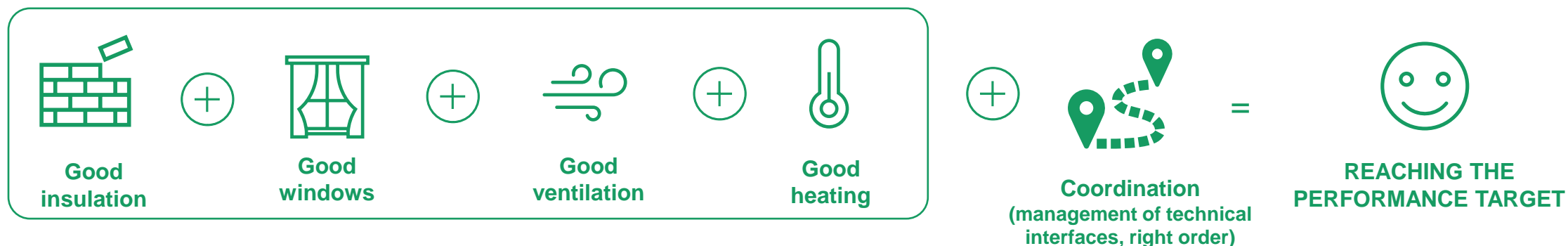
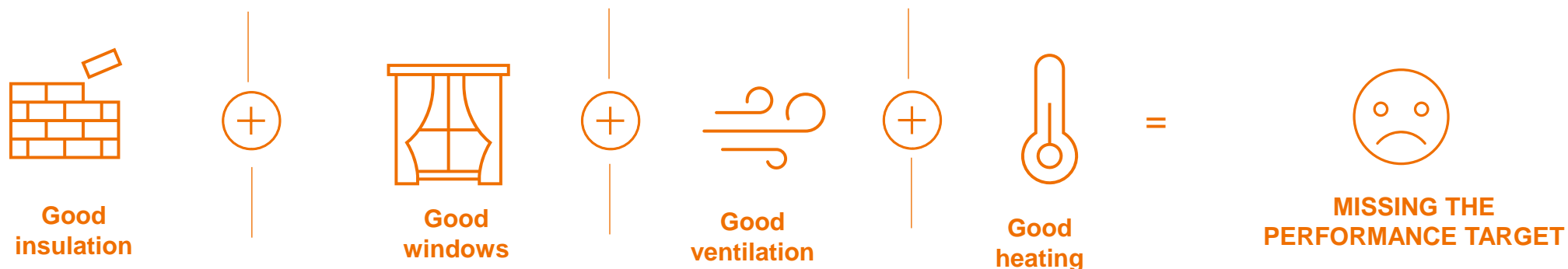
Proportion of the non-residential building stock having followed the tertiary decree trajectory in 2050\*

BAU	S1	S2	S3
50%	80%	70%	70%

\*this provision is applicable to large non-residential buildings with a floor area larger than 1000 m<sup>2</sup>. The Decree requires building owners to achieve energy performance targets that rise in ambition over time (40% savings in 2030, 50% in 2040 and 60% in 2050, compared to pre-renovation level in a baseline year)

# What does reaching a high level of performance mean? The example of dwellings (1/2)

DEEP RENOVATION REQUIRES A CLEAR RENOVATION PLAN

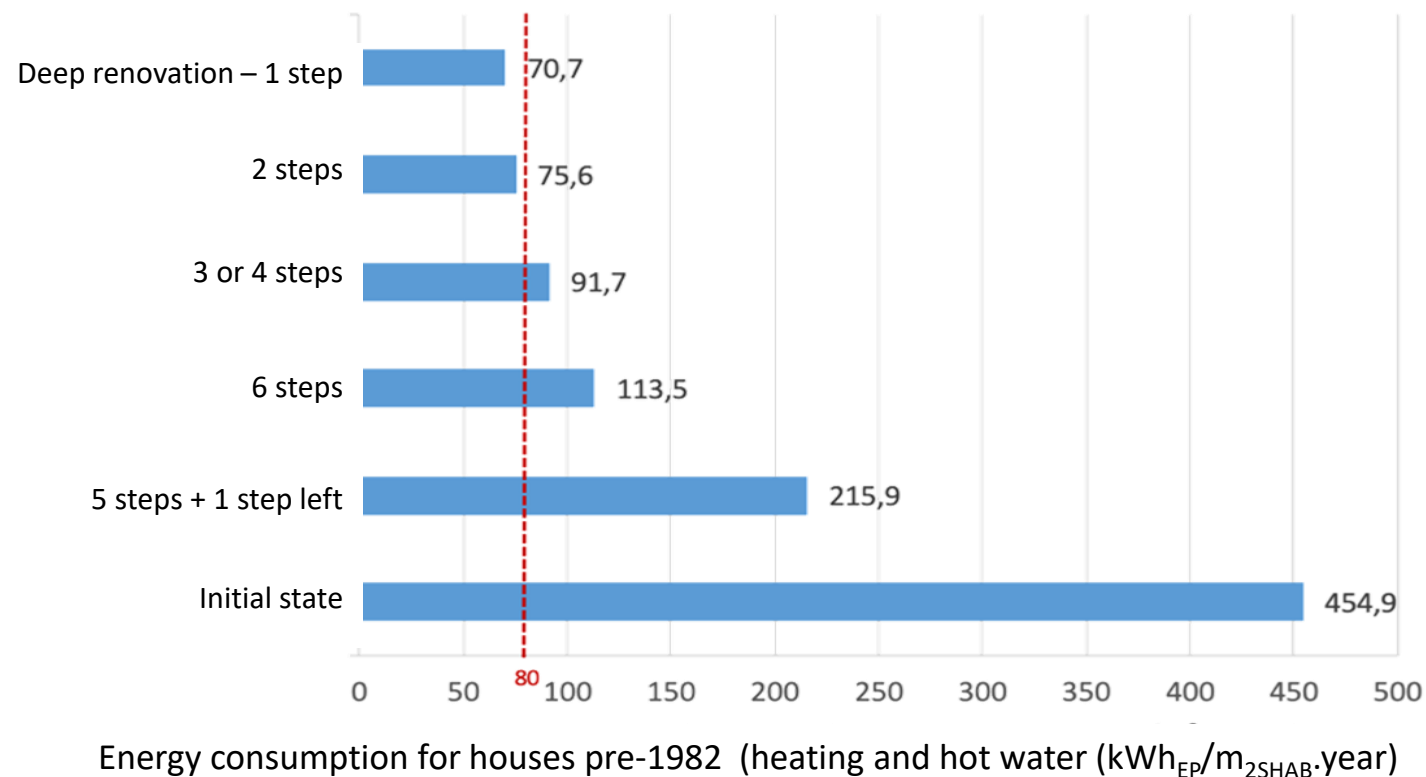


# What does reaching a high level of performance mean? The example of dwellings (2/2)

To achieve national climate objectives, complete (rather than staged) renovations up to BBC level are technically the most suitable.

If this is not possible due to financial or social reasons, a renovation with **a maximum of three steps** is the optimal path. More steps jeopardize the ability to correctly manage technical interfaces (e.g. between windows and walls).

This three-step renovation must include **a significant first step (more likely insulation and ventilation)** with multiple renovation measures, combined with a clear renovation plan to ensure climate targets are achieved and health of occupants is improved

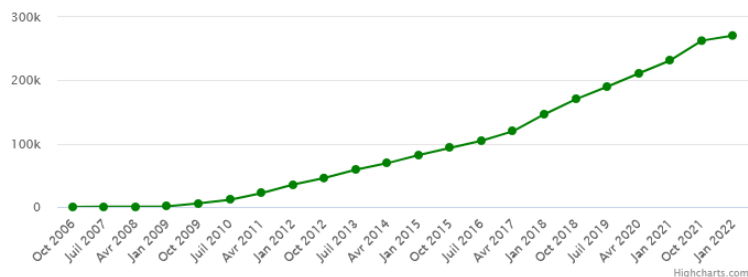


# Deep renovation: where are we at in France?

## THE DYNAMICS OF DEEP RENOVATION

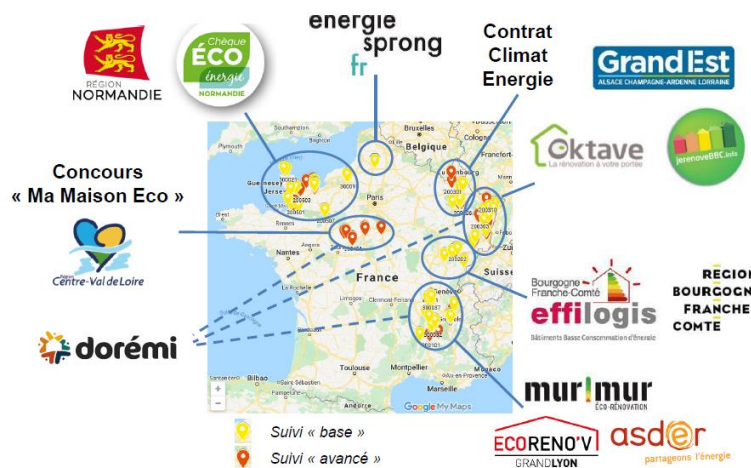
Still a niche... (approx. 3 million main residences out of 28 million in 2015)

... but increasing



Number of collective dwellings having received the BBC-renovation label

## PIONNIERS



## ENABLING CONDITIONS

- Upskilling of workers (including self renovation)
- Industrialisation in order to accelerate the renovation rythm
- Channeling financial help to deep renovation (ex: Global Renovation' within MaPrimeRénov)
- Ensuring global investment levels required are met
- Integrating a wider view of performance (beyond energy and carbon... climate-change adaptation, health...)

# Ressources

ADEME's Transition(s) 2050 scenarios

<https://transitions2050.ademe.fr/en>

ADEME, Dorémi, Enertech, 2020. *La rénovation performante par étapes - Étude des conditions nécessaires pour atteindre la performance BBC rénovation ou équivalent à terme en logement individuel.* 196 pages.

<https://librairie.ademe.fr/urbanisme-et-batiment/4168-renovation-performante-par-etapes.html>



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