

Renovate to recover

2020, the greenest year in history?



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Introduction

Renovation is a powerful and immediate policy lever — and with the recent delivery of the Energy Performance of Buildings Directive (EPBD), serves to act as a catalyst for simultaneously delivering jobs, energy, healthier communities and a lower carbon footprint.

Building renovation is a proven macroeconomic stimulus that strongly supports local small and medium-sized local enterprises. In Europe alone, the industry for energy-efficient buildings already generates €850 billion in annual turnover and supports 6.5 million jobs. Scaling renovation activity can expand production capacity, accelerate innovation and grow regional economies. The payoff of doing so compounds: stronger markets, more skilled jobs, and buildings that hold their value for generations.

At a microeconomic level, renovation directly addresses building inefficiencies that drive excessive energy waste – and with it up energy bills. When renovation is done right, using the right materials, it holds the potential to cut average energy bills by up to 50%. When policy prioritises the lowest-performing buildings first, the benefits extend beyond individual homes, reducing energy demand and relieving pressure on local grids.

Beyond economics, renovation plays central role in securing public health and safety by securing our indoor environments. Cold and damp buildings fuel respiratory illnesses and strain public health services. Deep renovation tackles this at the source, reducing condensation and mould risk, improving indoor air quality and, critically, strengthens fire-resilience when non-combustible materials like stone wool are used.

The construction industry is the world’s biggest consumer of resources —yet more than 90 percent of materials are wasted, lost, or never made available for reuse. Deep renovation — starting with high-performing building envelopes — is the most direct route to cutting emissions, reducing resource waste and extending the useful life of existing structures. But how we renovate matters as much as how fast: durable, recyclable and non-combustible materials protect public investment, reduce waste and ensure performance lasts for decades.

Backed by credible national renovation plans, accessible financing and a skilled workforce — renovation can unlock a sustained wave of investment that strengthens local economies, protects people and accelerates the path to climate neutrality.

Every renovated building is a safer home, a lower energy bill, a local job created, and a step towards a more resilient society.

Source(s):

1. ING, “Renovation is taking centre stage in the construction sector”. 2023. [ING Report](#)
2. European Commission, Energy Performance of Buildings Directive (2019). [Source link](#)



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The economic case

Channelling economic recovery funds to energy efficiency renovation in buildings has huge potential to secure local jobs. Every €1 billion invested in renovation supports 20,000 local jobs in the short-term.³ Since renovation projects often can gain approval quickly and since there are so many buildings that can be improved, these jobs can be secured here-and-now.

Publicly-funded energy efficiency retrofitting programmes could also take advantage of the available capacity in the construction sector that exists because of stalled or delayed new-build projects, with new housing demand likely to suffer during a prolonged recession.

The positive impact of renovation increases exponentially when public sector investment attracts private sector investment. With every €5 billion of stimulus – divided between €1 billion of public financing and €4 billion of private financing – around 100,000 jobs would be secured.⁴ With 6.6 percent of all jobs in the EU in construction, this would have a massive impact on employment.

Investment in construction offers a highly efficient way to get funds to workers and small businesses compared to other sectors where a relatively small number of large corporations would be set to benefit. Approximately 95 percent of construction companies employ 10 or fewer people, and craftsmen

generate two-thirds of their revenue locally, within a 50-km radius of their business. Around 80 percent of value-added in the construction industry is created through SMEs.⁵

Beyond this immediate, positive, and localised impact on the labour market, energy efficiency renovation when considered alongside other longer-term investments can significantly improve the sustainability of our economies.

Reducing energy use contributes to making energy efficiency renovations an attractive investment, including via increased property values. A €10,000 investment in renovation yields energy savings of €1.8 - €5.6 per m²/year, direct to home- and building owners, depending on the depth of renovation.⁶ When magnified to a city or national level, these potential financial savings are impressive.

Source(s):

3. Study done by Boston Consulting Group (BCG) for ROCKWOOL Group

4. Eurostat (2017); homebuilding; BCG analysis

5. European Commission (2016)

6. The renovation depth logic is based on primary energy savings, considering 3-30% as light renovation, 30-60% as medium renovation and >60% as deep renovation. The yearly energy savings discounted for 30 years, assuming an average energy price of €0.15. Source: European commission (2019)





For investors, there is also a compelling case. Energy efficiency investments can yield an internal rate of return (IRR) of 5-6 percent over 30 years for medium renovation depth – outperforming capital markets or most bonds.⁷ These are generally very reliable and regular returns, less subject to volatility and general capital market movement. On average, investment in building renovation delivers more than a two-fold return in energy cost savings over the lifetime of the investment.

Key takeaways



Substantial labour market impact:

100,000 jobs

could be secured per €5 billion of public-private investment (€1b public/€4b private).

Localised, grassroots impact:

95% of construction companies

employ 10 or fewer people, and craftsmen generate two-thirds of their revenue locally.

Attractive investment opportunity:

Energy efficiency investments can yield an internal rate of return of

5-6% over 30 years

for medium renovation depth.

Source(s):

7. European commission (2019)

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The environmental case

Upgrading our urban landscape has a huge and longlasting environmental impact. The operational carbon footprint of buildings – CO₂ emissions throughout the life of a building – presently account for around 30 percent of the world’s CO₂ emissions. Furthermore, energy efficiency accounts for more than 40 percent of the carbon emission reductions needed to meet the goals established in the 2016 Paris Agreement.

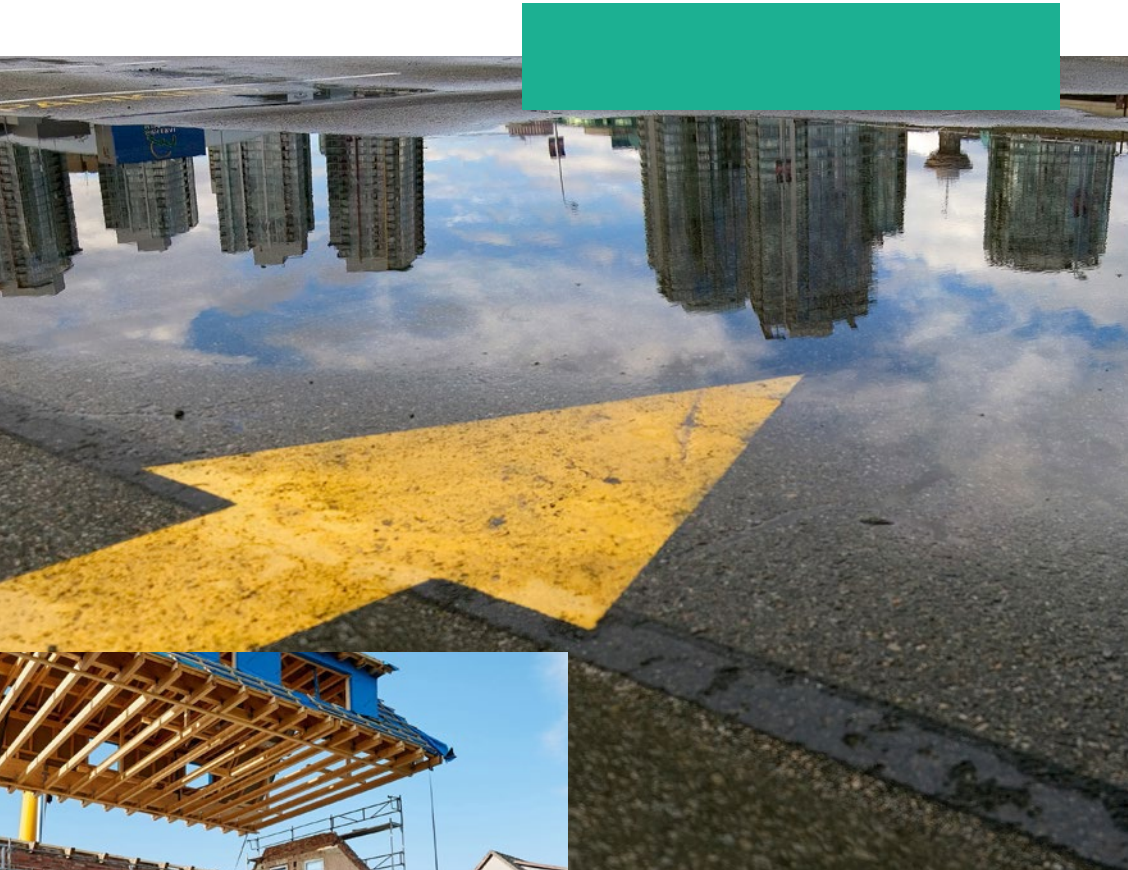
During a research programme piloted in New York City by the C40 Cities Climate Leadership Group (using a methodology and toolkit developed in cooperation with ROCKWOOL), deep energy retrofits of 23 high-emission public schools were shown to reduce greenhouse gas emissions by 42 percent. A scaled-up model of this programme, remediating 700 schools across the city, found that deep retrofits could avert 318,690 tonnes of CO₂ per year – equating to 9.56 megatonnes of CO₂ across the buildings’ lifetime. Energy cost savings across the portfolio of retrofitted schools amounted to \$99 million per year;

and maintenance cost savings, more than \$52 million. The larger scaled-up model also estimates between 32,000 and 49,000 jobs would be secured across the project’s lifespan.⁸ Worldwide, building renovation provides the most cost-effective method to reduce emissions when compared to other routes such as solar energy or fuel-efficient vehicles, with a €-150 marginal cost per ton of CO₂ emissions. Across the board, saving 1kWh of energy through stone wool insulation results in 480 and 220 times less carbon emissions than generating that same 1kWh from coal and gas respectively.



Source(s):

8. C40 analysis: https://www.c40knowledgehub.org/s/article/The-Multiple-Benefits-of-Deep-Retrofits-A-toolkit-for-cities?language=en_US



Key takeaways



Building quality is vital to climate goals:

Energy efficiency accounts for more than

40%

of the carbon emission reductions needed to meet the goals established in the 2016 Paris Agreement.

Renovation gives the most effective reduction of emissions:

Building renovation provides a

€-150

marginal **cost per ton of CO₂ emissions** - a greater impact than solar energy or fuel-efficient vehicles.

The “trickle-down” nature of these cost savings to consumers will help governments create long-term economic and environmental resilience, with substantial energy savings. With retrofitted buildings delivering household energy savings of €26 per square metre⁹, while safeguarding thousands of jobs, renovation provides a long-term method to regenerate the livelihood of the community as well as the planet.

Source(s):

9. Average European energy price: 0.2159€/kWh. Source European Commission (2019); Eurostat

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The societal case

There remains a pressing need to improve the conditions of urban living. People across Europe spend up to 90 percent of their time inside, two-thirds of which are at home.¹⁰ Thus, ensuring that our indoor environments promote healthy living conditions that can also remain resilient in the face of different hazards like fire, are vital components in securing public health and safety.

Currently, about 80 percent of EU buildings – some 250 million homes – require modernisation by 2050, which while increasing energy efficiency performance and reducing air pollution will also bolster building users' wellbeing via healthier and safer indoor climates. Energy poverty is a widespread problem across Europe, as between 50 and 125 million people are unable to afford proper indoor thermal comfort.¹¹

This recovery must provide long-term solutions to these problems, and energy efficiency renovations can achieve that. Retrofitting a building can also reduce fire risks and improve indoor air quality, playing a crucial role in protecting the health and wellbeing of residents.

The European Commission estimates building renovation can help save hundreds of € billions by improving air quality. Maintaining favourable air quality, temperature, light, and noise levels can yield an overall productivity increase of up to 12 percent in offices and eight percent in schools.¹² That is critical to securing a more productive and resilient economy going forward.

Energy renovation can also reduce the heating costs of inefficient buildings, relieving consumers whose bills might otherwise push or keep them in energy poverty. Deep retrofits could provide yearly energy savings of €26 per square metre¹³ for residential buildings, passed directly onto building owners/ occupants, who also benefit from improved health conditions.

Source(s):

10. C40 analysis: https://www.c40knowledgehub.org/s/article/The-Multiple-Benefits-of-Deep-Retrofits-A-toolkit-for-cities?language=en_US

11. https://ec.europa.eu/energy/content/introduction-5_en#Tackling-Fuel-Poverty

12. Building Performance Institute Europe (BPIE): <http://bpie.eu/publication/building-4-people-valorising-the-benefits-of-energy-renovation-investments-in-schools-offices-and-hospitals/> and <http://bpie.eu/wp-content/uploads/2018/11/discovering-the-impact-of-better-buildings.pdf>

13. Average European energy price: 0.2159€/kWh. Source European Commission (2019); Eurostat

In this way, energy efficiency renovation can ensure that the benefits of other stimulus measures are preserved. EU member states are already obligated to annually renovate at least three percent of the total floor area of government-owned buildings, ensuring they meet energy standards.¹⁴ Even more significantly, existing EU legislation requires all existing buildings to be renovated to a high standard of energy performance by 2050. Member states must take the lead with deep retrofits of their own public buildings, reducing both their carbon emissions and the significant costs of energy inefficiency across their own portfolio.

Energy efficiency renovations can improve our health, productivity, and financial security, especially when living and working in the same confined spaces. As we adapt to the “new normal”, that is essential for a safe and prosperous future.



Key takeaways

We spend most of time indoors:

Even pre-pandemic, people spent

90%

of their time inside, with two-thirds of that at home.

Our homes and offices are not fit for purpose:

More than

80%

of EU buildings, some **250 million homes**, require modernisation by 2050 to meet safety guidelines.

Renovation will safeguard livelihoods:

Energy poverty is a widespread problem across Europe, as between

50 and 125 million

people are unable to afford proper indoor thermal comfort, which can be alleviated by deep, state-backed retrofits of the worst performing homes.

Source(s):

14. Article 5, EU Energy Efficiency Directive. <http://bpie.eu/publication/bpie-factsheet-on-article-5-energy-efficiency-directive/>

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Renovate to recover with public-private partnerships

Building renovation can be seen as a new and attractive green asset class for long-term investors seeking stable returns at a premium versus government bonds.

A proper investment structure in a Public-Private set-up can provide investors with an acceptable risk-return where the public partner takes some of the risk to overcome some of the challenges that so far have limited the penetration of institutional capital in the sector.

Current market and policy conditions open a window of opportunity to engage with local authorities at municipal, government and EU level, where their interest in supporting local jobs and economies combined with long-term green ambitions can bring new business models to market.

Establishing a common investment fund capitalised by the public and the private investor is the first step. Seen from the public investor's perspective, the fund increases the public capital deployment capacity into the renovation segment by attracting institutional capital interested in reaching a new investment outlet in a new green asset class.

There are nevertheless two key factors that the public investor has to consider to make the investment attractive enough for large private capital, and those are: (i) the public party should take charge of the fund's operations and cash management; and (ii) it has to provide a minimum guaranteed return.

The first element is key for the private investor. The public entity can manage this task by leveraging existing point of contact with the end beneficiary of the renovation loan. With the right support, a government or a municipality can manage the lending and the cash collection parts on the fund's behalf and do so via existing invoicing or cash collection processes. This element is key for the private investor as it would not otherwise be able to reach the diffuse customer base in a cost-effective way.





The second element is also relevant for the private investor since the default risk and floor on investment can be more easily managed by the public party than the private one, again by leveraging the diffuse customer base and its own aggregated risk profile.

By attracting private capital – and combining it with grant money when appropriate – the public investor will be able to increase the amount of capital deployed into the renovation segment. At the same time, the services provided by the public partner and the low associated risk for the investors ensure that the household will be able to receive attractive funding conditions and significantly benefit from the capital invested for renovation.

Conclusion

Rarely before has there existed such broad consensus on the imperative and the mutually reinforcing nature of simultaneously pursuing global economic growth and climate action. The European Commission is pushing the Green Deal to be at the heart of its economic recovery plans. In the UK, some 200 leading firms and investors are calling on the Government to bind economic recovery plans to existing pledges for a net-zero economy by 2050. Spain has similarly drafted legislation pegging its recovery effort to climate goals – including a 35 percent reduction in energy consumption via the renovation of buildings and homes.

Now, it is crucial to convert this public and political commitment into tangible action.

It's broadly accepted now that policymakers can pursue both goals without sacrificing either. Massive energy efficiency renovation programmes offer European governments a chance to safeguard hundreds of thousands of jobs; modernise their building stock to dramatically improve citizens' quality of life; and shrink their countries' climate footprint for good.

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