# How far can buildings take us in fighting climate change?

CENTER FOR CLIMATE CHANGE
AND SUSTAINABLE ENERGY POLICY

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# Key messages

- Buildings are key to solving the climate challenge; few (if any) sectors can deliver the magnitude of emission reductions needed
- However, present (even advanced) related policies may lock us into a high-warming future, or make meeting mid-term targets very expensive. Policies need to focus on whole-building, deep retrofits rather than cherry-picking
- If we embark on the ambitious path to fixing our buildings, not only do we contribute to addressing CC to large extent, but (partially) solve several other problems also as a “bonus”

# (Very) green buildings are key to solving the climate challenge

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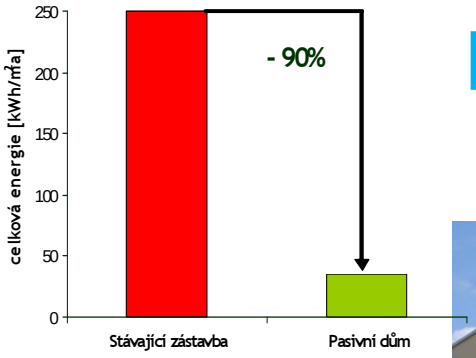
# Few sectors can deliver the magnitude of emission reduction needed

- Buildings are responsible for app. 1/3 of energy-related CO2 and 2/3 of halocarbon emissions
- know-how has recently developed that we can build and retrofit buildings to achieve 70 – 90% energy and emission savings as compared to standard practice in all climate zones (providing similar or increased service levels)

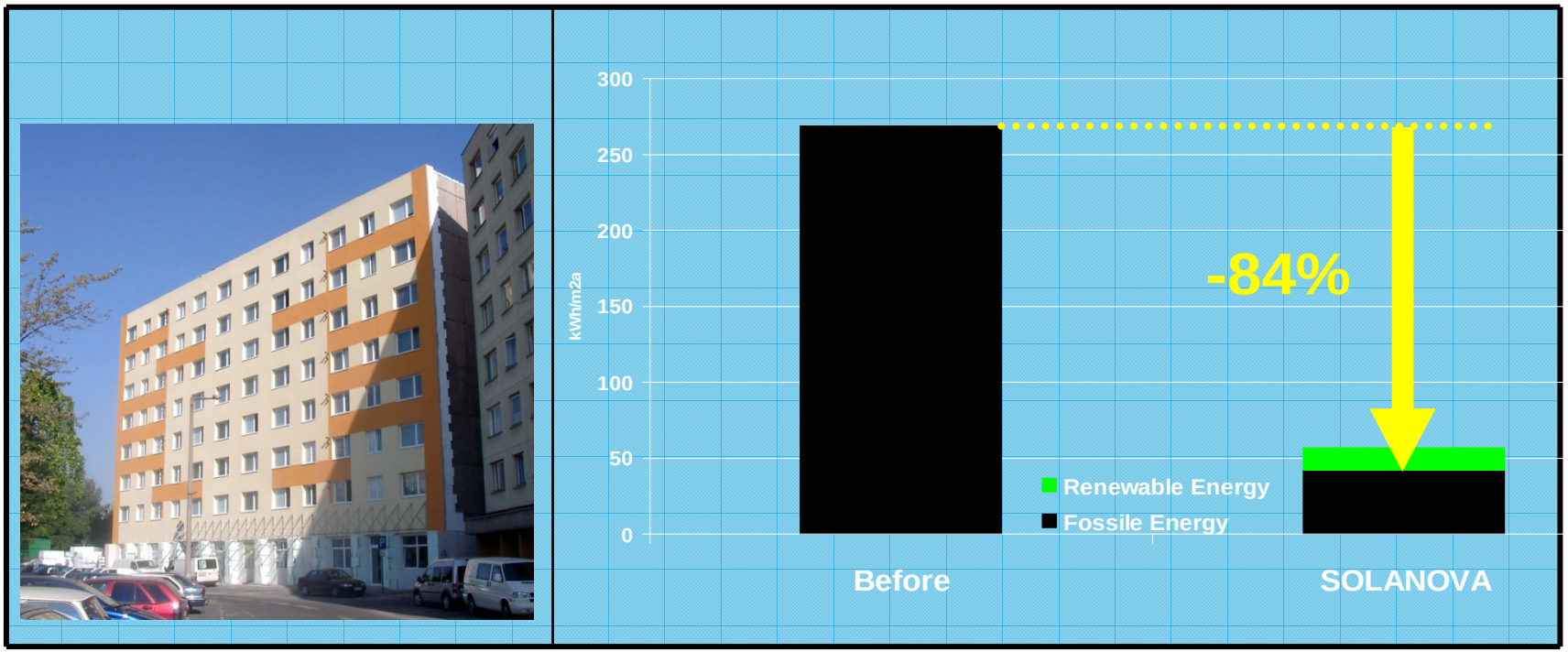
# Buildings utilising passive solar construction (“PassivHaus”)





Source: Jan Barta, Center for Passive Buildings, www.pasivnidomy.cz

# We can also *retrofit* buildings to save 70 – 90% of thermal energy use




**Source**: Claude Turmes (MEP), Amsterdam Forum, 2006

More on Solanova: www.solanova.eu

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# Global heating&cooling final energy and floor area, 2005 - 2050
# State-of-the-Art Scenario

UNEP SBCI
Sustainable Buildings & Climate Initiative

GEA

Work in progress – do not cite or quote

Exact numbers still changing

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# Opportunity or risk?

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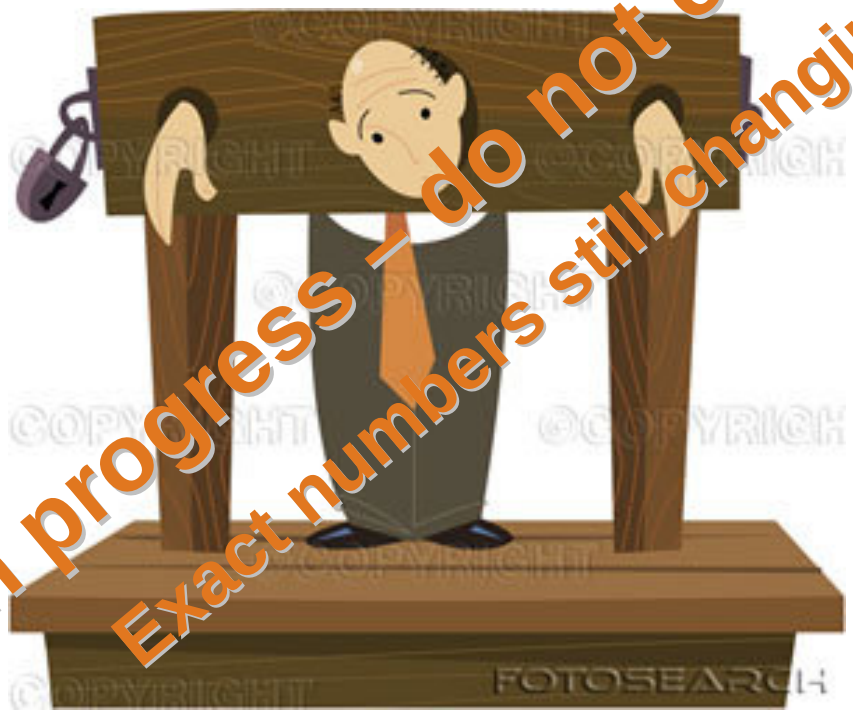
## The size of the potential lock-in effect

# The lock-in effect

- Recognising the importance of retrofits, many governments support/encourage energy-efficient refurbishments
- However, these usually do not save more than 10 – 40% of individual bldg energy use in contrast to the 70 – 90% possible; since they “cherry-pick”
- Resulting in a major lock-in effect, since suboptimally renovated buildings will not be economical to revisit for many decades

# Scenario Results. World- Energy





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# The lock-in effect by 2050
# Western Europe

**State-of-the-Art Scenario**

**Sub-Optimal Scenario**



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# The free lunch we are paid to eat: selected co-benefits of high-efficiency buildings

- **Fuel poverty eradicated**
- Energy security improvement: e.g. Hungary can avoid app. 60% of January n. gas imports
- **Employment**: in Hungary alone, a deep retrofit program will create up to 180,000 *net* new jobs
- **Health and productivity**: cold and flu rates drop by 20%; in US alone resulting in over USD10bln/yr financial savings for companies in productivity gains

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# Thank you for your attention

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*Trust me – they just keep promising this global warming; they just keep promising; but they won't keep this promise of theirs either…*

hvg.hu hírek szünet nélkül


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