

EVIA's Key Recommendations for the European Affordable Housing Plan

Right to adequate ventilation and healthy indoor air to deliver decent, sustainable and affordable housing

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Key numbers and facts

50%

Of the energy demand in well-insulated buildings can stem from thermal losses due to air renewal through both window airing and natural ventilation



>5%

Of buildings in the EU are equipped with ventilation energy recovery systems



154,000

Europeans die prematurely every year due to poor IAQ, according to WHO estimates



€325B

Is the approximate annual cost to society linked to premature deaths caused by poor IAQ¹

15-26%

Of residential building's energy needs may be reduced via demand control mechanical ventilation systems by adapting air replacement needs²

10x

The air inside our homes can be up to 10 times more polluted than outdoor air



10L

Of moisture per day are generated by the average family of four. This favours the development of respiratory diseases and contributes to building decay when not controlled



90%

Of the average life of a European is spent indoors, making good indoor air quality a critical element of health that must not be overlooked



Energy-efficient mechanical ventilation systems deliver significant benefits to occupants

Sustainable housing

- ✓ Minimises thermal losses
- ✓ Optimises energy consumption
- ✓ Improves building's carbon footprint
- ✓ Prevents structural damage and degradation
- ✓ Improves building's durability

Affordable housing

- ✓ Reduces energy costs
- ✓ Supports affordability in both new and renovated buildings
- ✓ Reduces impact of energy prices increases
- ✓ Fights energy poverty
- ✓ Reduces the need for expensive renovations

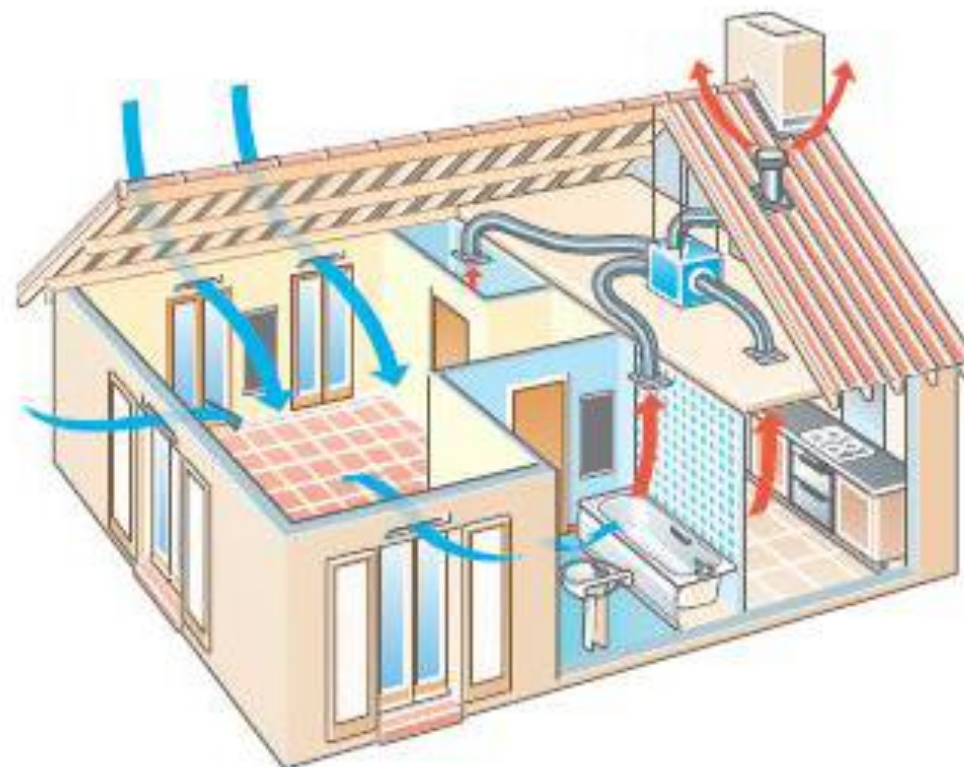
Decent housing

- ✓ Limits the concentration of indoor air pollutants
- ✓ Prevents mould creation
- ✓ Maintains healthy indoor environment
- ✓ Prevents structural degradation
- ✓ Helps preventing respiratory diseases
- ✓ Improves physical and mental health, and productivity

Mechanical ventilation as a solution

Mechanical ventilation systems involve the use of fans and ducts to circulate and exchange air, ensuring an adequate flow of incoming fresh air in the least polluted rooms, while stale air is expelled outside of the building from the most polluted ones.

An ideal energy-efficient home is airtight thanks to appropriate insulation, with a mechanical ventilation system renewing the air in a controlled way, thereby contributing to ensuring a good indoor air quality, keeping occupants healthy and buildings in good shape while reducing thermal losses and the impact on energy needs to what is strictly necessary.



The right to healthy air does not stop at your front door

EVIA'S RECOMMENDATIONS

1. Include healthy IAQ, through adequate ventilation, as an essential aspect of decent housing

2. Support IAQ data gathering to inform policy and best practices

3. Incentivise the installation of mechanical ventilation and IAQ monitoring systems

4. Finance information initiatives to educate residents on IAQ and ventilation



KEY RESULTS

Ensuring European citizens are breathing healthy air inside their homes while reducing financial burdens in the medium and long term

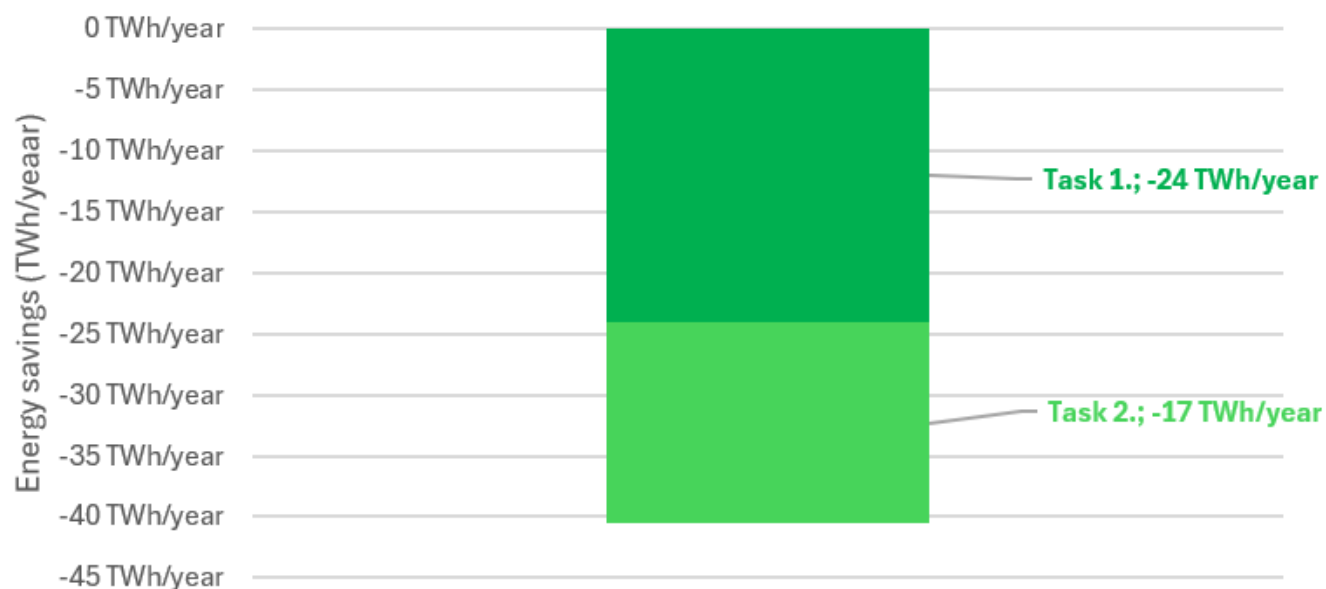
Improving the sustainability and durability of European buildings in a cost-efficient way

Maintaining climate ambition while strengthening the housing sector

Case Study: French residential sector

Equipping homes with an efficient mechanical ventilation system could save individuals more than €6 billion of energy costs a year, and can be done in 2 complimentary ways with considerable benefits:

Résidentiel : Potential energy savings (TWh/year) linked to efficient mechanical ventilation



Task 1. Equip homes, which are not fitted with a mechanical air renewal system, with such a device like demand control UVU or BVU with energy recovery: savings of 24 TWh/year and €3.2 billion of energy costs for individuals, as well as a reduction in emissions of 4.1 MteqCO₂.

Task 2. Replace old-generation, constant flow UVUs with high-performance systems, demand control UVU or BVU with energy recovery: savings of 17 TWh/year and €2.8 billion of energy costs for individuals, as well as a reduction in emissions of 2.8 MteqCO₂.

Case Study: French residential sector

The TREMI 2020 Study on renovating homes for energy efficiency (Tremi) and on reducing GHG emissions from renovations and sponsored by the French Ministry for the Ecological Transition, quantifies the conventional reductions in energy consumption and GHG emissions generated by specific renovation works carried out between 2017 and 2019 in single-family homes.

It concludes that:

1. Implementing mechanical ventilation is by far the most cost-effective energy-saving measure in home renovation

2. In terms of greenhouse gas emission reduction, fitting mechanical ventilation is the second most advantageous type of work.

Work gesture	Energy saving (kWhEP/year) / cost (€ inc VAT supplied & installed)
Replacement or installation of a mechanical ventilation system	6,66
Replacement or installation of a heat production system	2,13
Insulation of hot water and domestic hot water systems	1,63
Insulation of attic floor	1,61
Improvement of heating monitoring	1,43
Insulation of walls from the inside	1,33
Insulation of low floor	1,15
Replacement of external doors	0,91
Insulation of walls from the outside	0,79
Installation of shutters	0,73
Replacement of domestic hot water system	0,58
Insulation of flat roof	0,46
Insulation of attic roof from the inside	0,35
Replacement of windows	0,34
Installation of electric heating system	0,26

Work gesture	Carbon saving (kgeqCO2/year) / cost of project (€ inc VAT supplied & installed)
Replacement or installation of a production system	0,80
Replacement or installation of a mechanical ventilation system	0,74
Installation of electric heating	0,42
Insulation of the attic floor	0,22
Insulation of the walls from the inside	0,19
Insulation of the lower floor	0,17
Insulation of the hot water and domestic hot water networks	0,15
Insulation of the walls from the outside	0,12
Replacement of the domestic hot water system	0,07
Insulation of the flat roof	0,06
Insulation of the attic roof from the inside	0,05
Improvement of heating monitoring	0,04
Replacement of windows	0,03
Replacement of external doors	0,01
Installation of shutters	0,01



Thank you for your attention