

ETICS benefits: good for the environment, the economy and the people

Environmental benefits



- More than **220 million building units**, representing 85% of the EU's building stock, were built before 2001. Almost **75%** is **energy inefficient** according to current building standards. **Around 90%** of existing buildings will **still be there in 2050**. They account for **40% of the total energy consumption** and **36% of Europe's CO2 emissions** - 79% thereof caused by space heating and warm water generation. [17] Renovating the building stock is key to **mitigating climate change**. [1], [2]
- As **ETICS** mark the **most used façade insulation system** they significantly contribute to the Renovation Wave.
- The annual weighted **energy renovation rate** of around 1% (deep renovation only 0.2%) [3] **needs to more than double** to meet the objectives of the EU Climate Law. [1] The Energy Efficiency Directive requires public administrations at all levels to achieve a 3% annual renovation rate.
- Preserving, remodelling and extending existing buildings will help **minimise carbon consumption in construction** whilst providing modern and additional floorspace in our cities as the load-bearing structure can be further used. ETICS help make our buildings fit for 2050.
- **ETICS protect** external walls from the elements, supporting the durability of the building structure. ETICS have proven in practice their **durability** and **long-term performance over several decades**. [5]
- Over their lifecycle ETICS save far more energy and GHG emissions than embedded during production and construction. The **carbon payback period** of typical **ETICS** is **less than two years**. [6]
- The ETICS sector takes responsibility for the **sustainability** and the **circularity** of systems. [7]

Gross economic benefits



- ETICS support the energy transition, making Europe's economy **less dependent on energy imports**. This **strengthens Europe's competitiveness**.
- We will have a **strong economy** whilst tackling climate change. Energy efficiency renovation is an investment for our society, not a cost.
- ETICS are manufactured and installed by local or regional economic actors. They support European value chains. **For every EUR 1 million invested** in energy renovation of buildings, an average of **18 jobs are created** in the EU. These are local, long-term jobs that will stimulate economic activity across the EU. [4] **Small and mid-sized enterprises will benefit**.
- Additional investments in ETICS generate **additional tax incomes** (VAT, corporate taxes, income taxes), **reduce societal costs** for unemployment, and help reduce costs for transfers to vulnerable households and healthcare costs including absence from school and work. [4]
- **Economic losses** from more frequent climate-related extreme events are increasing. In the EU, these losses already average **EUR 12 billion per year**. Conservative estimates show that exposing the EU economy to **global warming of 3°C** above pre-industrial levels would result in an **annual loss of at least EUR 170 billion** (1.36% of EU GDP). The Climate Law and the Renovation Wave aim to accelerate the EU's adaptation to climate change and to limit impacts on people, economy and biodiversity. [14] **ETICS contribute to decarbonisation, being essential to limit global warming**.

Benefits for the people



- We spend over 90% of our lives inside buildings. **Thermal comfort** and indoor air quality have an impact on **health and well-being**. [18] ETICS create a comfortable indoor atmosphere in winter and cool temperatures in summer. [15]
- ETICS contribute to a **people-centric, friendly living environment**. Children learn much better in healthier schools and homes, and productivity in healthy offices increases. [4]
- Energy-efficient buildings help **fight energy poverty**. [12] In 2022, 9% of the EU population could not afford to keep their home adequately warm. [8] Thermal insulation reduces operating costs, **increasing their disposable household incomes**.
- ETICS reduce the impacts of summer heat waves.
- Well-insulated building envelopes significantly **reduce the impact of energy price shocks**, especially for vulnerable households.
- **No disruption** to occupants while ETICS are applied.

Unbeatable variety of design options



- Designing facades with ETICS **upgrades the aesthetics of buildings and districts**.
- ETICS manufacturers offer an **unbeatable variety** of decorative colours, finishing coat structures, and facings made from brick slips, ceramic tiles, timber, etc. Stucco profiles, different insulation thicknesses and combination with other façade systems (for example integrated photovoltaics) provide **unique options** to structure facades. Even combinations with vertical gardens are possible to **green our cities** to reduce the heat in our streets. [9]
- ETICS are **applicable in new buildings and renovation projects**.

Benefits of building physics



- ETICS provide **continuous insulation** of external walls, **avoiding thermal bridges** (a typical risk for indoor mould formation).
- ETICS reduce the risk of cracks in the rendering system compared to non-insulated facades as thanks to the insulation layer the thermal stress on load-bearing walls caused by changing temperatures is minimised. [5] Thus, **ETICS** contribute to the **durability** of the building structure.
- ETICS-on-ETICS application allows **upgrades** of previously insulated **facades, making them fit for the future**.

Benefits for property owners



- Low performing buildings suffer from decreasing value. **With ETICS the value of properties can be conserved or even increased**. Buildings with good energy performance are easier to sell or rent. [10] Some member states require minimum energy performance standards for sales or rent. [11]
- **ETICS enable staged deep renovation**. Already through reduced energy demand, energy consumption and GHG emissions of fossil burners are significantly reduced. They can be

exchanged at a later stage if building owners cannot afford deep renovation in one stage. To guide property owners, energy consultants draw-up **individual renovation roadmaps** to avoid lock-in effects. They identify cost-optimal synergies between demand-side and supply-side measures and consider the financial support available. [2, 12]

- ETICS are applied outside; the usable and **rentable floorspace** remains **unchanged**.
- The thickness of external walls can be limited as the thermal resistance is provided by ETICS.

Low-temperature and heat pump readiness



- **Efficiency first via fabric first:** to achieve the best performance, the energy demand should be reduced first by insulating the building envelope. After that, capacities of heating systems can be adjusted to the lower demand. [2, 12, 16, 19]
- **ETICS prepare buildings to low-temperature** radiators and heating systems; **ETICS maximise the efficiency of heat pumps.** [2, 12, 16]
- **Holistic approaches are needed. Modern buildings** need to be understood as **integrated systems**. The building's individual combination of energy conservation through ETICS, low-temperature heating systems, on-site generation of renewables (for example photovoltaics) and flexible demand response paves the way to decarbonization in a cost-optimal way. [2, 12, 15, 19]

Affordable housing



- Today's focus is often on upfront investments of construction (CAPEX). **ETICS contribute to affordable construction over the building lifecycle** (total expenditures; TOTEX). nZEB buildings today consume over the lifecycle (calculated at 50 years) only the same energy as was used for the entire construction. [13]
- The balance for **ETICS is even better**. Typically, **after less than two years** they have **saved more energy** and GHG emissions **as embedded** in the product. **Holistic planning** is essential to achieve **cost-optimality**. The combination of active and passive measures needs to be assessed project specifically. [2, 12]
- In building renovation projects, **individual renovation roadmaps** developed by independent energy consultants **guide homeowners to optimal solutions**. Subsequent installation of single measures leads to higher total costs. [13]
- **Trigger points** should be considered. [15] For example, if scaffolds are anyhow needed to refresh the painting of a facade or to exchange windows, this marks a perfect opportunity to install ETICS as **no extra costs** for scaffolding apply and parts of the work anyhow need to be done.

Robust and simplified construction



- **Robust and simplified construction with ETICS** contributes to **reduced costs both for construction and over the lifecycle**. The use of passive measures maximising the energy performance of buildings can help reduce the complexity of technical appliances, failure costs and costs for maintenance and replacements. [13]
- **ETICS have proven in practice their robustness and durability**. Their lifecycle is expected to be equal to the building lifecycle if installed and maintained properly. **Maintenance is low** and considered equal to other facades. **No operational costs. No replacements.** [5, 15]

- The **thermal resistance** of existing ETICS facades **can be upgraded** by installing a second ETICS layer during regular maintenance circles.

Energy security and energy transition



- **Thermal insulation** of building envelopes plays a **key role** in reducing the energy demand. [2]
- **Energy conservation by minimising the energy demand** of buildings with ETICS leverages the shift to renewable sources. The lower the residual demand after thermal renovation, the lower the renewable capacities needed. [19, 20] In turn: the **lower the number of windmills and additional grids** needed.
- **Energy conservation** in the construction sector **saves renewable energy potential** urgently needed for other sectors to ensure a swift energy transition.

Buildings become part of energy systems



- **Reducing the energy demand combined with increasing electrification is key** for Europe's decarbonisation strategy by 2050. This applies to buildings as for other sectors and needs to be planned holistically to find cost-optimal solutions. [2, 12, 19]
- With increasing numbers of heat pumps and charging stations for electric vehicles in buildings, **peak electricity demands will increase without ETICS** especially during winter times as then on-site energy generation via PV and solar panels is much lower. [12, 20]
- **ETICS** must be recognised as **part of flexible demand response systems**:
 - a. Energy conservation with ETICS minimises the energy demand for heating, cooling and warm water.
 - b. Even if not heated in periods of cold outside temperatures, well-insulated building envelopes (including doors and windows) can almost keep their indoor temperature for several hours without negatively impacting living comfort. ETICS insulated buildings act as **diurnal battery for heat storage**. [20]
 - c. Smart integration in our energy systems helps balance the energy demand of buildings with the existing limited capacities of our grids. [19]
- **Five times more heat pumps can be operated** with the same network and electricity capacity **if buildings are insulated** and integrated into the grid. [16]

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FACT SHEET 2023-01

ETICS OFFER AMAZING BENEFITS



About EAE

- EAE is the voice of the ETICS industry in Europe.
- EAE members represent more than 80 per cent of Europe's revenue from ETICS.
- EAE has been constantly working towards a "culture of sustainability" in the construction sector since its foundation 2008.

EAE members



Contacts

Registered office
 Friedhofstraße 3
 76530 Baden-Baden, Germany
 Phone: +49 7221 94477-40
www.ea-etics.com
info@ea-etics.com

Brussels office
 Bld Reyerslaan 80
 1030 Bruxelles/Brussel, Belgium
 Phone: +32 2 416 21 74
 European Transparency Register: 150628337276-48
 Managing Director: Ralf Pasker