

Energy-independent housing

Renewable, self-sufficient energy supply for residential communities

**Energy Supply Cooperative delivers low-cost,
CO₂-free living**



Affordable CO₂-free housing

Reduced energy consumption and costs

Protection against wholesale price rises

Community solar power and heat pumps

Communal energy supply and contracts

Energy monitoring and load shifting



The challenge

Maximising availability of CO₂-free housing

Energy consumption in residential buildings is still a major source of CO₂ emissions. Traditional housing design is energy-intensive, largely dependent on fossil fuels, and can expose householders to sudden price rises of oil and gas in the wholesale energy markets. Newer passive house developments address this problem but are typically available only to high-income families.

The Energy Supply Cooperative (ESC) design from evohaus overcomes this problem by offering sustainable, energy-independent housing to low- and middle-income families. As well as supporting financially vulnerable citizens, it helps local authorities meet their energy-reduction obligations.

The solution

The end-to-end solution for energy-efficient communities and low-cost housing

evohaus has developed a model for residential communities that provides CO₂-free dwellings for low-income households. Known as Energy Supply Cooperative (ESC), the evohaus model integrates smart building design, insulation, renewable technologies, energy management, and supply contracts in a complete end-to-end package for self-sufficient, sustainable living.

In an ESC community, houses and apartments use communal solar panels and heat pumps to generate their own power and reduce costs. Any additional energy requirements are met through pre-arranged contracts with sustainable suppliers. All buildings come with integrated software that gives occupiers real-time insight into their energy use, enabling them to optimise consumption over time and reduce bills still further.

Key features

The ESC model for residential buildings and communities includes:

Self-sufficient power supply from communal solar panels and heat pumps for low-cost, CO₂-free energy

An energy management system that enables load shifting for optimal use of communally generated energy

Community-wide energy contracts with sustainable providers that meet any additional energy needs with economies of scale

Household energy monitoring systems that enable occupiers to understand their energy usage, respond to price signals, and reduce consumption

Household software based on artificial intelligence that enables energy needs to be tailored per household

A single connection to the local electricity grid that covers the whole community

The value

Reducing carbon emissions, energy costs and fuel poverty

Assessments show that in an ESC community, 70 per cent of energy requirements are generated by the community's renewable technologies, which then reduces energy bills by up to 75 per cent. The ESC model enables local authorities and housing associations to meet their commitments both to affordable housing and to reduced greenhouse gas emissions.

For low- and middle-income families, ESC offers low-cost accommodation, protection against international oil and gas prices, and a reduction of financial pressure and fuel poverty. ESC has already been deployed in family-oriented communities in Cologne and in a retirement community in Hilden, Germany.



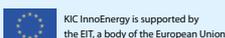
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