GGBP Case Study Series

# Promoting Energy Efficient Buildings in Germany

Related Chapter: Mobilizing investment

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Country: Germany

Sector(s): buildings

Key words: low cost loans, information, mandatory standards, buildings, development bank, energy efficiency

The Government of Germany, together with the national development bank, promotes energy-efficient construction and refurbishment of Germany's building stock through regulation, low-cost loans and public information campaigns.

## Context

Germany has an energy-intensive economy, partly based on the role of manufacturing in its economy. It imports around 62 percent of its energy, and has therefore embraced energy efficiency as a strategic concern. Energy efficiency also contributes to the national climate goal. In the buildings sector the long-term ambition is to promote 'climate neutral building stock,' realizing an 80 percent reduction in primary energy demand by 2050.

## Approach

The Government of Germany takes a three pillar approach to promoting energy efficiency in buildings:

- Regulatory and legislative frameworks;
- Low-cost loans;
- Information and awareness programs.

The Energy Saving Ordinance (EnEV) is national legislation which sets standards for buildings in energy efficiency, insulation, heating, hot water, ventilation, shading, and cooling systems. The

legislation is periodically revised (most recently in 2013) to make standards more stringent in line with technological improvements. Planning permission for new buildings and major refurbishments is contingent on meeting minimum standards.

The national development bank (KfW) has historically provided funding for Germany's post-war and post-reunification redevelopment through the European Recovery Program (ERP). In January 2007 the German government reorganized the ERP Fund in favor of the KfW capital base, which resulted in KfW receiving EUR 4.65 billion as equity capital and EUR 3.25 billion as subordinated loans. It also directed KfW to increase support for energy efficiency.

KfW offers low-interest loans to homeowners and landlords through intermediary commercial banks for new building projects and refurbishments meeting energy efficiency criteria. The commercial bank handles the credit application, takes the credit risk and concludes the credit agreement. KfW provides a refinancing loan to the commercial bank. To ensure that the commercial bank passes on the low interest rate to the householder, KfW sets and publishes a maximum interest rate, including the commercial bank's margin that can be applied as part of the scheme.

In addition to offering loans KfW also offers grants for broader environmental initiatives such as waste management and air pollution control.

Demand for energy efficiency refurbishments and loans is promoted by the German Energy Agency, which provides information and runs promotional campaigns, provides training, establishes and maintains standards, and develops and promotes model projects.

## Outcomes

By any measurement the German approach to promoting the uptake of energy efficiency and renewable energy generation has been an outstanding success. It ranks first among the Group of 20 countries for its energy efficiency programs and renewable energy advances. The effectiveness of the KfW Energy Efficient Renovation program can be mapped against very credible achievements as follows:

- Volume impacts: from the start of the Energy Efficient Construction and Rehabilitation (EECR) program in 2001 to 2010 more than 630,000 loans have been committed with an aggregate commitment volume of EUR 40 billion for 1.8 million housing units;
- Energy savings impacts: since the EnEV was introduced energy use in buildings treated since 2002 has halved. KfW initiatives have encouraged wider progress in energy efficiency. Between 2006 and 2009 KfW funding programs facilitated the energy-saving refurbishment of 1 million homes and the addition of 400,000 new highly efficient homes;
- Environmental impacts: a reduction of 7.7 million tons of carbon dioxide emissions per year has been achieved since 2006;
- Economic impacts: EECR has facilitated a strong and growing energy services company (ESCO) industry, together with training and certification regulations. An estimated 240,000 new jobs have been created in the building and supply industries. In terms of total investment since 2006 it has created a EUR 70 billion contribution with an investment ratio of 1:14;
- Social impacts: 1.8 million households have benefited from energy savings.

## Lessons

**Successful features**

- Robust policy and regulation aligned to strategic national goals. The German government established a comprehensive energy and climate policy with regulatory intervention to meet its ambitious greenhouse gas abatement targets.
- Transparent and extensive information and consultation processes to raise awareness and overcome lack of knowledge among householders.
- Program designed to deliver environmental benefits and economic growth by building new industries and creating additional jobs.
- Role of national development bank together with robust intermediary processes.

**Limitations**

- The success of the policies depended on strong institutional capability to introduce and manage a complex policy and regulatory framework, and in particular on the role of KfW in providing finance. This may make replication difficult for other countries. However, although the overall program is complicated it started with the promotion of single measures focused on heating systems and windows, and was built up gradually.

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