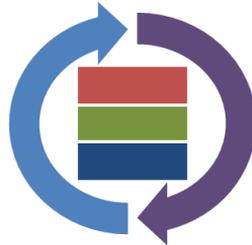


Towards a Green Investment Policy Framework - Case Study Series



CLIMATE AND ENERGY POLICY IN GERMANY: MECHANISMS TO ENCOURAGE PRIVATE SECTOR INVESTMENT/PARTICIPATION IN LOW-CARBON DEVELOPMENT

A case study of Germany's Building Sector

Prepared by the German Federal Environment Agency and KfW

This case study is part of the OECD project on Mobilising Private Investment in Low-Carbon, Climate-Resilient Infrastructure. The aim of the project is to assess and promote good practice policies that help countries encourage private sector investment in low-carbon climate-resilient infrastructure. The present case study, prepared by the German Federal Environment Agency and KfW, was developed for the OECD Roundtable Discussion on “Mobilising Private Investment in Low-Carbon, Climate-Resilient Infrastructure”, 25 September 2012. It builds on the OECD paper “Towards a Green Investment Policy Framework: The Case of Low-Carbon, Climate-Resilient Infrastructure” ([COM/DAF/INV/ENV/EPOC\(2011\)4/REV2](#)).

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Climate and Energy Policy in Germany:

Mechanisms to Encourage Private Sector Investment/Participation in Low-Carbon Development

- A case-study of Germany's Building Sector -

A paper produced for the OECD – WPCID

by

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1. The German policy framework for low-carbon infrastructure investments

(Kerstin Pfliegner, Jens Schuberth, Diana Nissler, German Federal Environment Agency)

1.1. Introduction

This case study report was written by request of the OECD Working Party on Climate, Investment and Development (WPCID) to contribute to the discussion of how public policy and investment instruments can leverage private sector finance in low-carbon and climate-resilient infrastructure. The aim of this case study is twofold: i) Firstly to describe the main German public policy mechanisms geared to encourage investment in a low carbon economy and ii) secondly to present concrete examples of state supported programmes to trigger private investment in climate-friendly technologies. These are the KfW programme supporting the building and renovation towards energy-efficient housing, energy efficiency in SMEs and renewable energy.

The outline of the German policy framework and example of the KfW financing programme show that most elements contained in the OECD “consultation draft” of 18 May 2012 titled “Towards a Green Investment Policy Framework – The Case of Low-Carbon, Climate-Resilient Infrastructure” have been realized in Germany. These include:

1. Strategic goal setting and policy alignment
2. Enabling policies for competitive open market and greening investments
3. Financial policies, tools and instruments to attract private investment
4. Harnessing resources and building capacity for a LCR economy
5. Promoting green business and consumer behaviour.

1.2. Strategic goal setting

Germany and the European Union's (EU's) goal is to reach a comprehensive climate agreement that limits global warming to below 2°C compared with pre-industrial times. In the framework of EU effort sharing under the Kyoto Protocol, Germany has committed itself to cutting its GHG emissions by 21% until 2012 compared with 1990 levels. In addition and irrespective of the efforts by other states, Germany has formulated a 40% reduction target by 2020. The German Climate Policy framework comprises of the following components:

- *2007 Integrated Climate and Energy Programme*

The 40% GHG reduction target and an ambitious action plan comprising 29 key elements to reach this target were adopted by the German cabinet in August 2007 in form of the Integrated Climate and Energy Programme. With the overall objective to ensure a modern, secure and climate-friendly energy supply in Germany, this programme shows that the energy sector is fundamental in reaching the German climate policy goals. The measures focus mainly on enhanced energy efficiency and expanded use of renewable energy sources and include the approval of 14 legislative proposals.

- *2010 Energy Policy and Energy Concept 2050*

The new 2010 Energy Policy of the conservative-liberal government defines climate and energy objectives and policy measures until 2050¹. It set an even more ambitious long-term GHG reduction target of 80-95% until 2050 than the earlier IEKP. The Energy Concept 2050 sets out the long term development path for this ambitious target, taking increasing energy efficiency and the expansion of renewable energies as the main entry points.

¹ for further information see http://www.bmu.de/english/energy_efficiency/doc/46516.php and http://www.bmu.de/english/transformation_of_the_energy_system/general_information/doc/48050.php

The following goals formulated in the Energy Concept are meant to provide long-term orientation and investment security (see also Table 1 below).

Table 1. Targets set by the German Energy Concept 2050

Year	Climate Target	Renewable Energies Target		Energy Efficiency Target			
	Greenhouse gases (versus 1990)	Share electricity	Share total	Primary Energy (versus 2008)	Electricity consumption (versus 2008)	Energy productivity	Building renovation
2020	-40%	35%	18%	-20%	-10 %	Increase by 2.1% p.a.	Doubling rate from 1 to 2%
2030	-55%	50%	30%				
2040	-70%	65%	45%				
2050	-80-95%	80%	60%	-50%	-25 %		

(Source: based on Nicole Wilke; BMU 2011)

In addition, energy consumption in the transport sector shall be cut by around 10% by 2020 and around 40% by 2050. The target is to have 6 million electric vehicles on Germany's roads by 2030.

The building sector is a milestone of the German Energy Concept 2050, which defines the goal of a climate-neutral building stock by 2050. The target of having a "climate-neutral building stock" means: firstly, reducing primary energy demand of buildings with a long-term perspective by 80% by 2050, and secondly, covering the remaining energy demand predominantly with renewable energies. Thus, the building sector is another area of application of the German dual strategy combining efficiency gains and renewables. Furthermore the target is to be achieved by doubling the energy-saving building renovation rate from about 1% to 2% p.a.

To ensure stakeholder engagement, working groups and stakeholder dialogues have been established at the federal level. With regard to monitoring, from December 2012 onwards an annual status report of the Energy Concept will be published to inform stakeholders as well as, from 2014, tri-annual comprehensive assessment reports. The annual status report will present a range of indicators on development and status of the energy system, relating these indicators to the medium and long-term targets for transforming the energy sector. In contrast, the comprehensive tri-annual report will focus on the analysis of policy instruments and measures, including proposals for further improving policies and measures to ensure energy policy targets will be reached.

- *The German Adaptation Strategy*

A further component of the climate policy framework is the German Adaptation Strategy.² It was adopted by the Federal government in December 2008 with the goal to reduce national vulnerability to the consequences of climate change, i.e. to maintain or improve the adaptability of natural, social and economic systems. The strategy highlights adaptation options in 15 sectors and selected regions. It is designed to facilitate awareness and action across the various levels of government, (the Federation, Länder, local authorities) and by individual citizens to identify climate change impacts and adaptation needs, and to implement responses to these needs based on the philosophy that early incorporation of adaptation aspects into infrastructure and land-use planning can avoid damages from climate change in the future.

The Adaptation Strategy was developed in close cooperation with the Federal Länder (regional authorities in Germany) through a working group comprised of representatives from most federal ministries, and in this way building upon a multilevel governance approach. The working group was led by the Federal Environment Ministry (BMU), and supported by the national Competence Centre for Climate Change Impacts and Adaptation (Klimafolgen und Anpassung

² <http://www.bmu.de/english/climate/downloads/doc/42841.php>

or KomPass) at the Federal Environment Agency (UBA), which provided relevant information and other analytical inputs. In 2011 an Action Plan on Adaptation was finalized with the Länder based on a wide communication process to improve the knowledge base for decision making. A cost-benefit analysis based on selected adaptation investment examples is forthcoming.

In the building sector, there are some synergies between adaptation to climate change and climate protection. Adapting buildings just by installing air conditioning systems is not sufficient as their energy consumption contributes to climate change and their waste heat contributes to local heat island effect. A number of buildings have already shown that very good thermal insulation, effective shading of small windows, energy efficient electric equipment, intensive night ventilation and using ground cooling energy allow to minimise the need for cooling also in a warmer climate. Simultaneously some of these measures contribute to climate protection by reducing energy consumption for heating.

1.3. Enabling policies and regulatory context

To implement the above mentioned targets, in 2008/2009 about 20 legal measures were enacted in the energy sector. In 2011, following the Energy Concept, further amendments of the legal framework conditions were undertaken. The 2011 parliamentary decision to phase out German nuclear power until 2022 confirmed the targets defined in the Energy Concept in relation to the expansion of renewable energy and accelerated the adoption of the corresponding legislation. At present, further legal amendments are being prepared, for example the Energy Savings Ordinance (EnEV) for buildings and the Combined Heat and Power Act. Among the federal measures to increase energy efficiency is the report and draft amendment to the EnEV. This amendment tightens building energy standards by an average of 30% from 2009. As a second step from approximately 2013 these efficiency standards are being checked to be tightened up again, this time by up to 30%. This second step could contribute to achieve the long-term goal for buildings in 2050.

Furthermore, the German government has adopted guidelines on environmentally friendly and energy efficient procurement, aiming to promote energy-efficient appliances and services through priority government procurement procedures. These and other measures on energy efficiency are complemented by legal requirements concerning renewable energies in the electricity and heat sectors. For example, through the amendment to the Renewable Energy Sources Act (EEG), the government intends to realize the targets with regard to increasing the share of renewables in the electricity sector outlined in the policy framework above. The Renewable Energies Heat Act (EEWärmeG) lays down among others, obligations to use renewable energies in new buildings or to decrease primary energy consumption through energy efficiency accordingly.

Funding for the government support programme for existing buildings increased - from 130 million euro in 2005 to up to 350 million in 2008 and up to 500 million euro from 2009 to 2012 as required by German Energy Concept 2050.

- *The German Climate Initiative*

As further instrument to realize the ambitious climate goals, the BMU launched in 2008 the Climate Initiative, which is financed with funds from the EU emissions trading scheme. The Climate Initiative aims to cost-effectively advance innovative projects for climate protection. The Climate Initiative has a national and an international component. In the former, the BMU provides public funding to promote climate protection measures for increased energy efficiency and greater use of renewable energies domestically. Potential applicants are local communities and the private sector in Germany. Since climate protection is an international policy goal and acting domestically is not sufficient, with the international climate initiative (ICI) the BMU supports measures for energy efficiency, renewable energy, adaptation to climate change and the conservation of climate-relevant biodiversity and carbon-sinks, in developing,

newly industrialising and transition economies. International networking and exchange of good practice can be fostered to establish international cooperation. The ICI is an important part of Germany's contribution to "Fast-start Finance", a commitment made by industrialised countries under the Cancun Agreements to provide additional official resources in the amount of USD 30 billion, for the period 2010-2012. The Cancun Agreement reaffirms the pledge made in the Copenhagen Accord to mobilise USD 100 billion a year by 2020 to address the financing needs of developing countries. Within the European Union, Germany's share of their pledge was established at 1.26 billion Euros and this funding is provided through the ICI.

1.4. Specific enabling policies in the building sector

The building sector accounts for about 40% of Germany's final energy consumption and about one third of CO₂ emissions. At the same time, it offers huge potential for saving energy and CO₂ reduction. To reach the ambitious targets in the building sector, measures in the Energy Concept include an instrument mix based on providing the regulatory framework, public funding and tax incentives.

The regulatory framework regarding the energy efficiency of buildings is established by several directives of the European Union requiring the member states of the European Union to take legal or supportive action:

The **Energy Performance of Buildings directive** (EPBD, directive 2010/31/EU) requires the member states of the European Union to set requirements on the overall energy performance for new buildings and major renovations of buildings including space and water heating, ventilation, cooling, lighting etc. rated in primary energy. From 2020 on, new built buildings shall be "nearly zero energy buildings". Building energy performance certificates are to be provided to buyers and new tenants, and the energy performance rating is to be given in advertisements.³ Energy Savings Ordinance (EnEV) implements the generic requirements of the EPBD into national law.

The **Ecodesign directive** (2009/125/EC) and the **energy labelling directive** (2010/30/EU) set out common minimum environmental criteria for energy related products and consumer information on the energy efficiency of products, respectively. EU regulations on circulators (2009/641/EC), fans (2011/327/EU) and air conditioners (2011/626/EU and 2012/206/EU) already exist. Further regulations on boilers, water heaters, domestic ventilation units and air conditioning and ventilation systems are being prepared. For example, the ecodesign regulation will lead to a ban from the European market of non-condensing central heating boilers.⁴

Measures taken to improve the energy efficiency of buildings last for several decades in Germany. Each measure is oriented to contribute to the 2050 goal of climate neutral buildings, otherwise, an insufficient measure would hamper achieving the goal or it would result in additional cost for retrofitting before end-of-life. The German government is developing a "long-term road map for buildings" ("Sanierungsfahrplan"). It is supposed to give building owners guidance on how to meet the 2050 goal of climate neutral buildings when improving their buildings. Future public funding or financing mechanisms are expected to be aligned with this road map.

The German government provides public funding to support building renovation. There is the CO₂ building rehabilitation programme to support efficiency measures such as insulation, double- and triple-glazed windows, replacement of inefficient heating technology, use of renewable etc. Government is further increasing the market incentive programme for the use of renewable energies for heat generation in buildings. It is also launching a new support scheme "per-

³ for further information see http://ec.europa.eu/energy/efficiency/buildings/buildings_en.htm

⁴ for further information see http://ec.europa.eu/energy/efficiency/ecodesign/eco_design_en.htm, http://ec.europa.eu/energy/efficiency/labelling/labelling_en.htm and <http://ec.europa.eu/enterprise/policies/sustainable-business/ecodesign/>

formance-enhancing urban rehabilitation" to create synergy effects in the area of urban development.

With regard to tax measures, it is planned that energy taxation in the heat market will be more strongly connected to CO₂ emissions. Additional tax incentives are under consideration (tax deductibility of building renovation), especially in case of owners achieving targets ahead of time or exceeding them. The Energy Concept does not stipulate a renovation obligation. The right mix of instruments is key to the success of public support measures. The German Government will amend tenancy law in order to support energy upgrades. At present, the system of comparative rents, for example, provides disincentives and keeps people from renovating buildings. Those who do not renovate benefit indirectly from the energy upgrades carried out by other owners, which increase the general rent level (free-rider effect). To remove these barriers, provisions in tenancy law that impede energy upgrades will be amended, taking into account the interests of tenants and landlords in a balanced fashion. Heat contracting options under tenancy law will be extended to a uniform national standard. Heat contracting means that the owner of a building no longer buys oil or gas, but heat supply. The heating system in the basement is operated by a company, which has a great interest in generating heat as efficiently as possible. Old rental agreements often hamper heat contracting because in many cases a single reluctant tenant can determine whether a whole apartment building can change to heat contracting or not.

1.5 Promoting green business and stakeholder consultation

In order to assist with the achievement of Germany's CO₂ reduction goals within the national climate policy framework information and stakeholder consultation is intended to help improve awareness, knowledge and the propensity to invest in energy efficiency. This is usually done by consultation with concerned stakeholders. The electricity grid development plan has been subject to a public consultation process as building new power lines needs more direct involvement of society.⁵ The German energy concept includes transparency and public acceptance as an important element. Recent facts and figures as well as analyses and monitoring results shall be made available. Another example for extensive consultation is the adoption of requirements in the framework of the Ecodesign directive (2009/125/EC): Stakeholders from industry, consumer organisations and environmental NGOs and also EU member state representatives can participate even the development of preparatory studies which are freely accessible on websites, even as drafts. These stakeholders as well as EU member state representatives are involved in the official implementation process in consultation fora in order to find broad support of as many parties as possible.

Within the German climate policy framework half of the contributions to the CO₂ reduction targets are projected to be triggered through energy efficiency investment promotion. The promotional schemes implemented by KfW are therefore an important pillar of the Energy Concept. The Energy Efficient Construction and Rehabilitation (EECR) programme implemented by KfW, plays a major role among these measures. The German energy efficiency regulations provide a basis and framework for KfW's EECR programme. The EnEV defines the energy efficiency requirements for new and existing buildings and is setting the benchmark for KfW's investment promotion criteria. KfW's investment promotion in energy efficiency and renewable energy is described in the next chapter.

2. Supporting investments in energy efficiency and renewable energy (Gudrun Gumb, KfW Bankengruppe)

⁵ <http://www.netzentwicklungsplan.de/>

Energy efficiency and renewables are the pillars of the above explained German energy policy. A realization of the policy requires massive investments in both areas. Both areas are closely linked to each other as investing in renewables is not successful without investing in energy efficiency and vice-versa. To reach the Energy Concept goals of federal policy, it is necessary to stimulate both areas to unlock the decarbonisation potential of the German residential and corporate sector in the future. While the emphasis of this chapter is on presenting KfW's investment promotion scheme in the residential housing sector, two examples from the corporate sector are also briefly described.

2.1. Basic information on KfW's business model

Funding

KfW itself raises the funds for the loan commitments under its programmes via capital markets. Since KfW has an excellent credit rating (AAA) and refinancing capacity, this helps to minimize the costs of interest subsidies to support energy efficiency investments and secures the flow of capital needed to operate promotional financing schemes with high volumes and long maturities.

Energy Recovery Plan funds

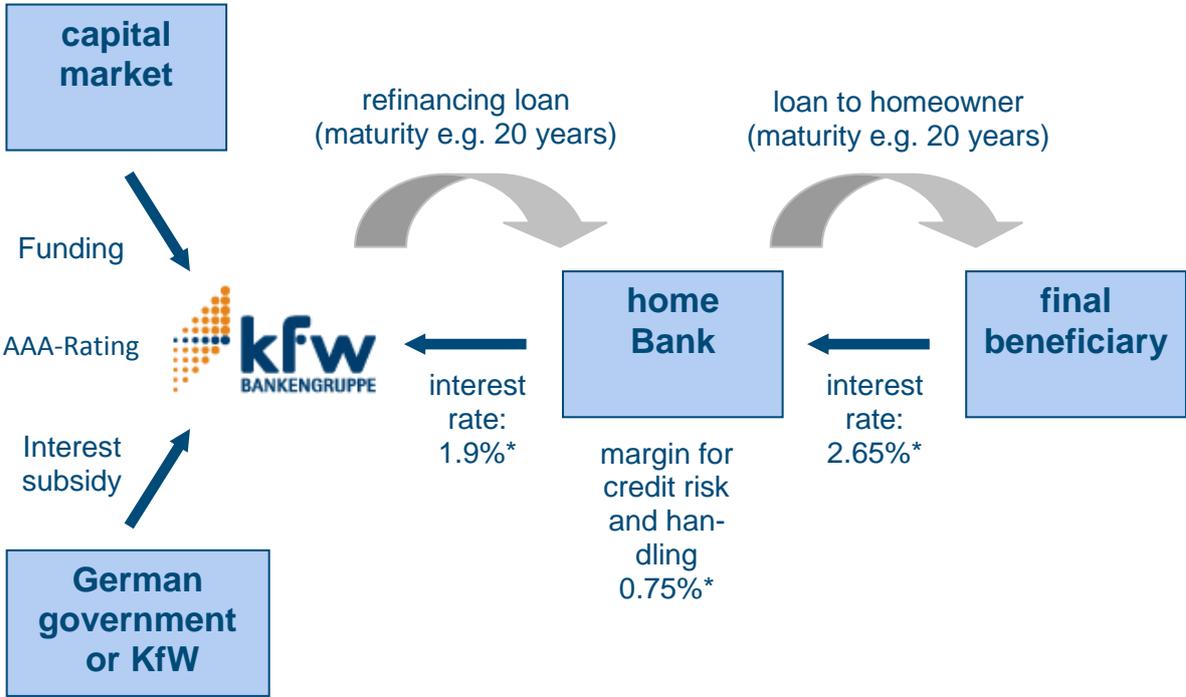
After World War II the United States initiated the European Recovery Plan (ERP). The purchase price payments for material aid (food, machinery, commodities etc.) that was provided by the US could be made in national currency. The payments were collected in so called "Counterpart Funds". In Germany the fund was called "ERP Special Fund". The money was used by the German government to refinance KfW's first promotional schemes immediately after the war. In 1953 the European Recovery Plan came to an end and the London Debt agreement stipulated that Germany had to repay only a part of the money it had received. Since the German government made the required repayments from the federal budget the means of the ERP Special Fund stayed untouched. The German government issued a law to convert the ERP Special Fund to a revolving refinancing instrument for long term investment loans. Thus, the money that flew back from the promotional loans could be reinvested. With the interest accrued, the capital stock of the fund grew significantly over the years and was used to refinance the promotional measures for German enterprises. In January 2007 the German Government decided to reorganize the ERP Special Fund. In the course of this restructuring, on 1 July 2007, the ERP contributed EUR 4.65 billion to KfW as equity capital and EUR 3.25 billion as subordinated loans and strengthened KfW's capital basis. The designated purpose of the Special Fund is retained, though, because any earnings generated are used exclusively for ERP economic promotion and capital preservation.

Distributional network

KfW has no distributional network of its own. The promotional loans are distributed via the branch network of German commercial banks by a mechanism that is called an "on-lending-system" (Figure 1). Within the on-lending-system, the commercial bank of the final beneficiary handles the credit application, takes the credit risk and concludes the credit agreement. There is no legal relationship between final beneficiary of the promotional scheme and KfW. KfW itself assesses the eligibility criteria of the application and commits a refinancing loan to the commercial bank that is widely identical to the loan agreement between home bank and final beneficiary except for the interest rates. To ensure that the commercial bank passes the very attractive interest rate (in some programmes below market level) to the investor, KfW's refinancing rate plus a margin add up to a compulsory maximum interest rate that the on-lending commercial bank is allowed to charge. There is a risk that commercial banks may not inform their customers about the KfW credits because they can gain higher margins with their own financial products. KfW therefore launches its own information campaigns. With the on-lending-system, KfW secures a broad distributional channel for its loans without having to op-

erate a branch network on its own and avoids “crowding-out” effects of its promotional activities to the private banking sector. In addition to commercial banks KfW provides information on its programmes schemes targeted to final beneficiaries via internet, flyers and a call center.

Figure 1. KfW commercial bank “on-lending” system for energy efficiency loans

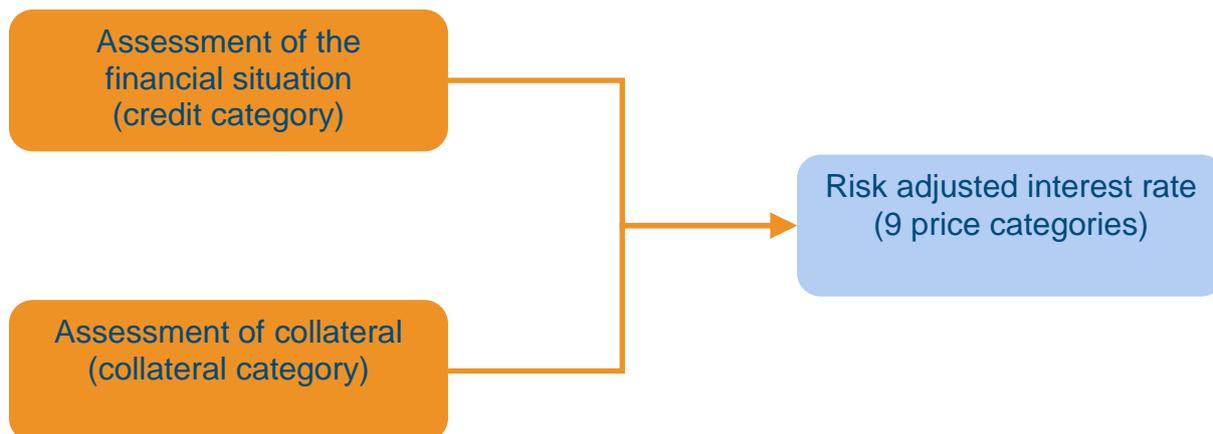


Risk adjusted margins for on-lending banks

As credit risk stays with the on-lending bank, the KfW margin paid to the bank covers handling costs and costs of credit risk. If private individuals or households are the final beneficiaries of the loan, this margin to cover the credit risk associated with the loans is fixed. Normally it is 0.75% per annum. In the corporate sector credit risks tend to be higher and vary across loans and the risk context for each. To keep on-lending in the corporate sector attractive for commercial banks, the margin should include a sufficient premium for the credit risks. Usually, the amount of the risk premium depends on the financial situation of the enterprise and the quality of collateral available. Therefore, KfW developed a pricing system that considers these issues (see Figure 2).

Within the system of risk adjusted margins or interest rates, KfW has defined 7 different categories to evaluate the financial situation of an enterprise and 3 different categories to classify the collateral available. There are 9 possible price categories in total to cover different combinations of financial situation and collateral quality in order to adapt the margin paid to the individual credit risk of the final beneficiary.

Figure 2. Risk pricing mechanism for corporate sector energy efficiency lending



Partial exemption of liability

As explained above, promotional financial measures of KfW are distributed by the German commercial banks and KfW has no direct relationship to the final beneficiary. Since risk mitigation is one possible promotional measure for financing a corporate investment, KfW offers three different types of loans within its corporate schemes with vary levels of loan “guarantee”: Loans for which the commercial bank bears the full risk and loans with a partial exemption from liability for the banks that ranges depending on the programme from 50% to 90%..

2.2. Energy Efficiency in the housing sector

How it began

After the oil crisis in the seventies the awareness grew in Germany that energy conservation is an important option to reduce the dependence on oil imports of the German economy. One result of this process was the first German ordinance on thermal insulation which became effective in 1979. Driven by the retrofitting needs of the building stock of the former GDR KfW started to finance investments in refurbishments of residential buildings on a broad scale basis in the early 1990's of behalf of the German government. Besides the general modernisation of the building stock the improvement of energy efficiency was an important target (Figure 3). With the rising importance of energy conservation and climate change, KfW launched in 1993 with the “CO₂ Reduction Programme” the first promotional scheme in the housing sector which was strictly focused on energy efficiency. In 2001 the social democratic-green coalition decided to sponsor the energy efficient rehabilitation of housing with government funds and KfW was mandated to implement the Energy Efficient Construction and Refurbishment (EECR) Programme (the former “CO₂ Rehabilitation Programme”). In 2007 the programme became one of the 29 key elements of the abovementioned “German integrated energy and climate programme”.

As of today there are 39 m housing units in Germany 29 m or 75% were built before 1979. So far, 9 m housing units have been rehabilitated. There is still a huge potential for rehabilitation of another 20 m units in Germany.

KfW Efficiency House – a standard for energy efficiency

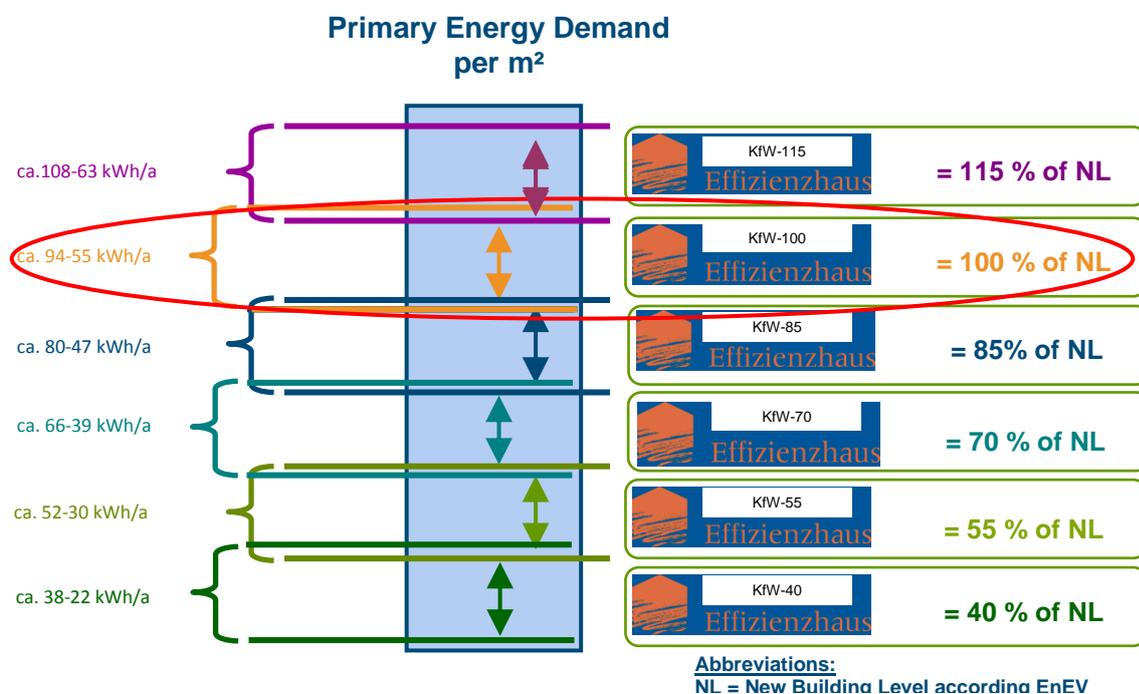
The benchmark for the KfW Efficiency House is the new building performance level defined according to the EnEV. To measure energy efficiency, two key criteria are set up within the EnEV: the primary energy demand and the specific transmission heat loss.

The primary energy demand is the energy input - referring to the complete chain of supply - that is required for the heating of a building and for the supply of warm water. The specific transmission heat loss is, roughly speaking, a measurement parameter of the quality of the thermal insulation of a building shell.

The primary energy demand is the leading criterion. In Germany the absolute primary energy demand that is allowed for a new building according to EnEV depends upon the type of building. For example a range from 94 to 55 kWh per square meter (floor space) a year is allowed for new buildings.

Referring to this benchmark, the “KfW-Efficiency House” standard was defined and within this standard different promotional levels (Figure 4). This means within the promotional criteria of the programme different levels of energy efficiency are provided, which can be achieved by the investor. For example, there is the “KfW-Efficiency House 100” (or for short KfW-100) or a “KfW-Efficiency House 115” (or for short KfW-115). A “KfW-100” house meets exactly the energy efficiency requirements of a new building according to the EnEV; while a KfW-115 is 15% less energy efficient (primary energy demanded exceeds the maximum by 15%). The numbers behind the word “KfW-Efficiency House” refer to the demand of primary energy in relation to the new building level according to EnEV. KfW-100 means, within this standard the maximum primary energy demand of the building is 100% of the demand allowed for a new building according to the EnEV. Simply put, the smaller the number the higher the energy-efficiency and the better the funding.

Figure 4. KfW Energy efficiency benchmark for housing



Energy Efficient Construction and Rehabilitation (EECR) programme

Within this programme we promote on one side new buildings -“Energy Efficient Construction” and on the other side rehabilitation of the existing building stock - “Energy Efficient Rehabilitation”.

As mentioned above the German energy requirements are laid out in the EnEV. Regarding the energy efficient construction of new homes, KfW promotes those homes that consume significantly less energy than the EnEV demands. The Construction of a KfW-70, a KfW - 55 and a KfW - 40 standards are eligible within the programme. To achieve those standards, innovative heating technologies based on renewable energies (such as solar, geothermal, biomass, wood, wind, hydropower) and a very good thermal insulation are necessary. Passive Houses, considered as the currently most energy efficient building type, correspond to KfW-55 and KfW-45, depending on the technology used. The additional costs caused by these investments compared to the minimum standard for a new building according to EnEV are covered with a

promotional loan from KfW. The maximum loan amount is capped at EUR 50,000 per housing unit.

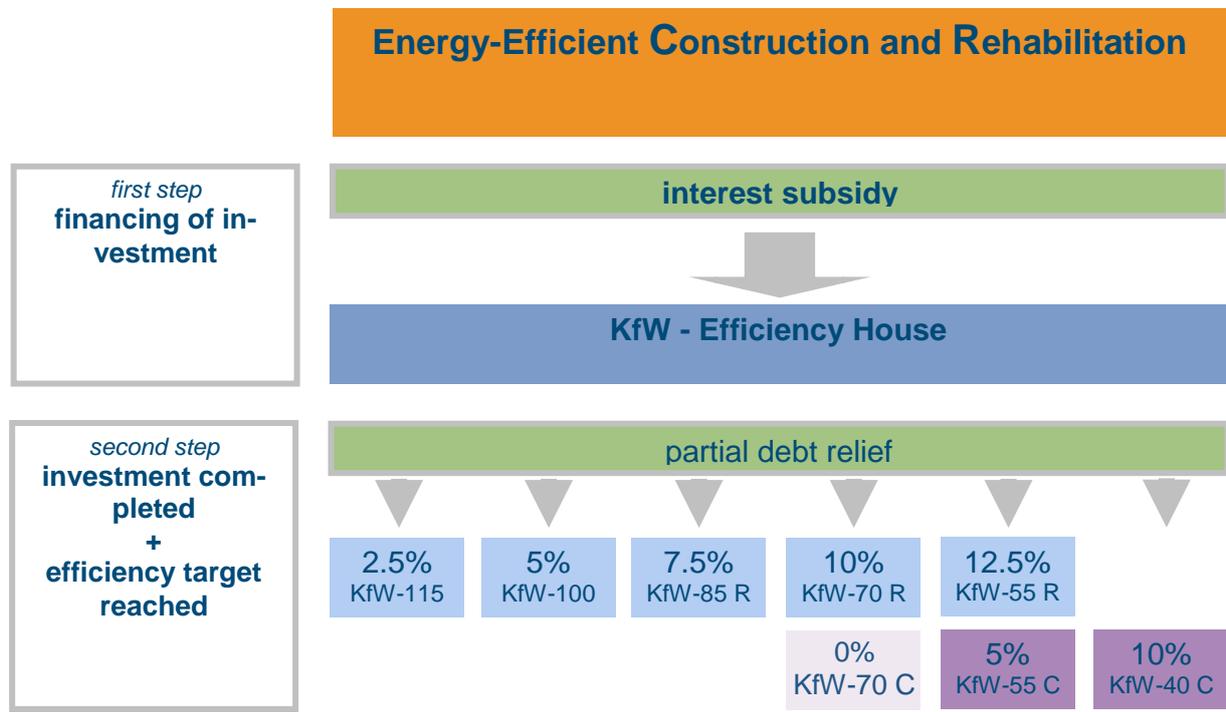
Regarding the energy efficient rehabilitation of existing homes, KfW promotes rehabilitation to a level where an existing house does not or only slightly exceeds the specific energy requirement for a comparable new house according to EnEV, or is even better than that. The Rehabilitation to KfW - 115, KfW - 100, KfW - 70, and KfW - 55 standards are eligible within the programme criteria. To achieve those standards, the investor needs an individual investment scheme that has to be developed by involving a neutral energy advisor. In order to meet the high energy standard of a KfW Efficiency House, extensive investments such as the renewal of heating systems, thermal insulation or new windows are usually required. KfW finances up to 100% of the investments referring to energy efficiency. The maximum loan amount is EUR 75,000 per housing unit. This amount is calculated to cover the complete rehabilitation costs on average.

To achieve the rehabilitation of an existing building step by step, KfW offers as an alternative to the comprehensive rehabilitation to a KfW-Efficiency House standard a catalogue of single measures. These measures comprise thermal insulation of outer walls, the roof, the floor levels, refurbishment of windows, installation of a ventilation system and replacement of the heating system. KfW's energy efficiency requirement for each single measure is very ambitious and lies above the standard for the correspondent part required by EnEV. A specialised energy advisor has to approve that the measure which is planned by the investor fulfills KfW's requirements. These ambitious requirements secure a deep and sustainable retrofitting of the respective part of the building. Combining the single measures over the years to a comprehensive retrofitting of the building leads in the end to a KfW-Efficiency House standard, which can be higher than the new building level according to EnEV. A combination of different measures is also possible. The maximum loan amount for single measures is EUR 50,000 per housing unit.

In both programmes (i.e. single measures or KfW-Efficiency House) KfW offers longterm loans with subsidized interest rates which are significantly below market level. All groups of investors can apply, since there are no predefined target groups within our eligibility criteria. KfW grants a partial debt relief if the planned KfW Efficiency House standard is achieved and this is confirmed to KfW by an energy advisor. KfW accepts energy advisors with a qualification that is according to requirements defined by EnEV. Depending on the achieved level of energy efficiency, the outstanding debt is cut by a percentage ranging from 2.5% to 12.5% of the original principal (Figure 5). To put it simply, higher energy efficiency means better financial conditions.

As an alternative for those owners of single or double family houses who do not need or do not want a loan, KfW offers a grant. The grant is calculated as a percentage of the investment sum. Depending on the type of retrofitting, single measures or KfW-Efficiency House, and the achieved efficiency standard of the house, the grant can range from 2.5% to 17.5% of total retrofitting costs. The underlying investment sum for the grant calculation is capped at EUR 50,000 for single measures or EUR 75,000 for the KfW-Efficiency House standard.

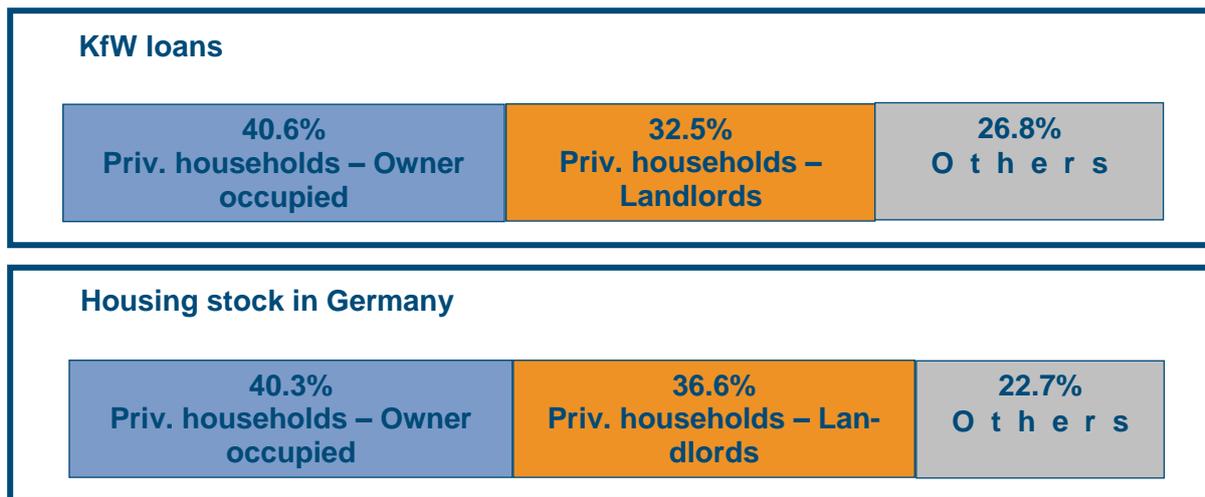
Figure 5. Incentives for retrofitting depend on the energy efficiency achieved.



Allocation of KfW funding among different owner types

KfW’s programmes are designed to reach the different types of owners of the German building stock evenly, and therefore nobody is excluded from the application for a loan within KfW’s EECR programme (Figure 6). In order to examine the even distribution of our funding among the different owner types of the building stock, the shares of owner types in KfW’s loan portfolio (commitments of the year 2009) were compared with the building stock in Germany in 2006. As depicted in the graph below, the share of private households with owner occupied houses is almost the same in the KfW portfolio and the building stock. Private landlords are still slightly underrepresented in the KfW portfolio, but their share of KfW portfolio increased significantly in 2009. Among the other owner types, cooperatives and housing companies have the biggest share. They are still somewhat overrepresented in the KfW portfolio but their share decreased in 2009. To sum it up, the loans in the KfW portfolio are distributed among the different owner types almost according their share of the building stock. This means that KfW’s promotion reaches all groups of investors evenly. There is no obvious bias in the eligibility criteria of the programme.

Figure 6. Comparison of KfW loan allocation to German housing stock by ownership class



As stated above, KfW has no special promotional scheme for housing companies. But the incentives within the existing programmes are sufficient to reach this group of investors. The possibility to combine the loans from our EECR programme with a loan from KfW's general modernisation programme is especially attractive for housing companies. Furthermore, the maximum credit amount in both programmes is defined per housing unit. This means in effect that in many cases the whole investment in the apartment building (general modernisation and energy efficient rehabilitation) can be financed with an attractive KfW loan. KfW offers capital and promotional incentives to form flexible financing solutions for housing companies.

Financing volumes, achieved CO₂ reductions and energy savings

From 2001 to 2010 KfW has committed approximately 630.000 loans with a volume of roughly 40 billion euros and promoted 1.8 m housing units under the EECR programme. Starting with EUR 936 million in 2011, for the loan commitments of the period from 2012-2014 the German government provides or will provide on average EUR 1.5 billion of federal funds per year to finance interest subsidies paid over a period of ten years and the partial debt relief. The German government intends to find a way of financing the EECR programme without federal funds from 2015.

Since 2006 the macroeconomic impacts of the EECR programme are evaluated on a yearly basis by a German research institute ("Evaluation der KfW-Programme „KfW-Kommunalkredit - Energetische Gebäudesanierung“, „Energieeffizient Sanieren – Kommunen“ und „Sozial investieren – Energetische Gebäude-sanierung“ der Jahre 2007 bis 2010"; Bremer Energieinstitut 2011). The institute draws random samples of each year's commitments under the programme and calculates with the data provided from these samples the amount of CO₂ emissions saved, investments triggered and jobs created. The institute estimates that since 2006 the sustained CO₂ reduction accumulated to 7.7 Mio tons per year. The programme triggered investments of altogether 70 billion Euros and on average 200.000 jobs per year were safeguarded or created since 2006. The investment leverage of government budget spent was 14 on average over the last three years. This secured additional tax revenues which exceeded the government's expenses on the EECR programme. („STE Research Report: Wirkungen der Förderprogramme im Bereich Energieeffizientes Bauen und Sanieren der KfW auf die öffentlichen Haushalte"; Institut für Energie- und Klimaforschung, - Systemforschung und technologische Entwicklung (IKS-STE) 2011). Additionally, since 2006 accumulated savings in heating costs of 1.5 billion Euros could be achieved with the EECR programme.

These numbers show that the promotion of energy efficiency measures has enormous positive impacts on the economy. The promotion of energy efficiency investment helps to reach climate protection targets and to mitigate therefore the adverse economic effects of climate change. Furthermore, it creates jobs and hence tax revenues. Last but not least, it helps to minimize

the economies dependency on fossil fuels and has lowered the energy bills of 1.8 m households so far.

2.3. Energy Efficiency in the Small and Medium Sized Enterprise sector

History and structure of KfW's corporate environmental protection programmes

Back in 1963, at a very early stage, when German society slowly became aware of environmental problems, KfW had already begun to promote environmental protection. The first ERP-scheme with an environmental protection goal was designed to stimulate air pollution control of small and medium-sized enterprises (SMEs). In the 1980s, with growing public awareness of the importance of environmental protection, KfW launched its first promotional scheme for environmental protection investment by SMEs. In 2003 with the merger of KfW and Deutscher Ausgleichsbank (DtA), the environmental protection programmes of DtA were refinanced with funds from the European Recovery Plan (ERP) and became part of KfW's promotional schemes for SMEs

In the beginning of 2009, KfW's corporate climate protection programmes were restructured. In addition to offering financial instruments such as loans, KfW now also offers grants and an expert-platform for the energy efficiency advice of SME's. Within the new programme structure, KfW has defined three areas of environmental promotion in the corporate sector: 1) environmental protection and energy efficiency investment, 2) renewable energy investment and 3) investment in innovative pilot projects of SMEs in the environmental sector aiming on the implementation of new technologies/practices with a high environmental relevance. This comprises, for example, projects for waste management, air pollution control but also investment in energy efficiency or renewable energies. In the following section, we focus on experience to date with energy efficiency and renewable energy investments.

Obstacles for German SMEs to invest in energy efficiency – results of a study

To create effective promotional schemes the analysis of the market has a key role to determine which promotional incentives are necessary to stimulate investments.

For that purpose, a business survey was carried out in cooperation with the research institute Prognos AG. A total of 4,037 surveys were sent out. The enterprises surveyed, were SMEs (according to the EU definition) domiciled in Germany that had received promotional funds from KfW in the past. Of the 726 questionnaires returned, 644 could be evaluated (net return ratio of 16%). Just under 50% of the respondent SMEs had fewer than 20 employees, and a good two thirds generated an annual turnover of less than EUR 5 million. Half the respondent SME's were from the manufacturing industry while the remaining industries (retail and wholesale trade, services, construction) were roughly evenly distributed. The results of the survey were evaluated by the experts of Prognos AG (Prognos AG 2009: Rolle und Bedeutung von Energieeffizienz und Energiedienstleistungen in KMU, Auftraggeber KfW Bankengruppe).

The results of the survey gave insights into the general relevance of energy efficiency for SMEs, the potential areas of investment in energy efficiency, the obstacles to these investments and the importance of energy services in this sector. The survey included an inquiry of where energy efficiency investments were already being made (see Figure 7).

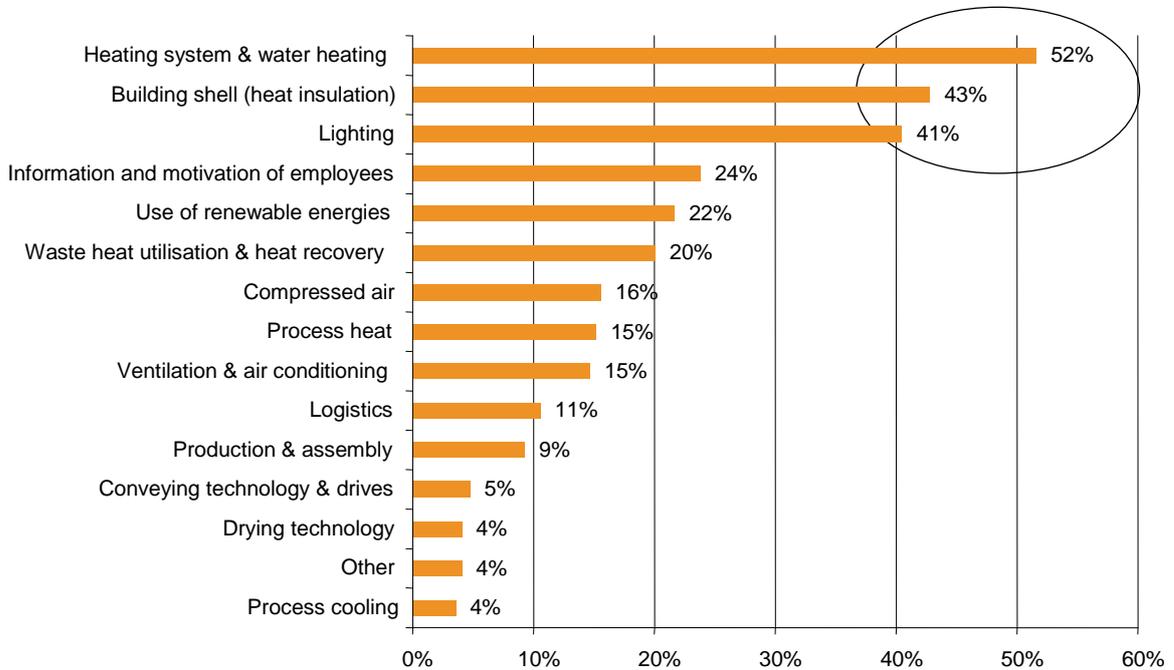
General relevance

Principally, SMEs pay close attention to energy efficiency issues. Almost 50% of all enterprises consider the topic to be important or very important; only 15% consider it to be of secondary importance (unimportant or irrelevant). Around two thirds of the surveyed SMEs stated that they identified energy reduction potential in their own company. The share of enterprises that implemented energy efficiency measures in the last three years doubled to a good 60% over a previous survey conducted by KfW Bankengruppe in 2005. The amount of activity put into the implementation of energy efficiency measures rises with the size of the annual turnover of the company and the share of energy costs in business expenditure.

Areas of investment

Figure 7 below shows the areas of energy efficiency investments in enterprises. In relation to 2005 the areas of potential investment cited by companies stayed almost the same. Investments in buildings are considered to be by far the most important investment option.

Figure 7: German SME survey results on areas of energy efficiency investment (share of respondents ranking the importance of different technical options for investment)

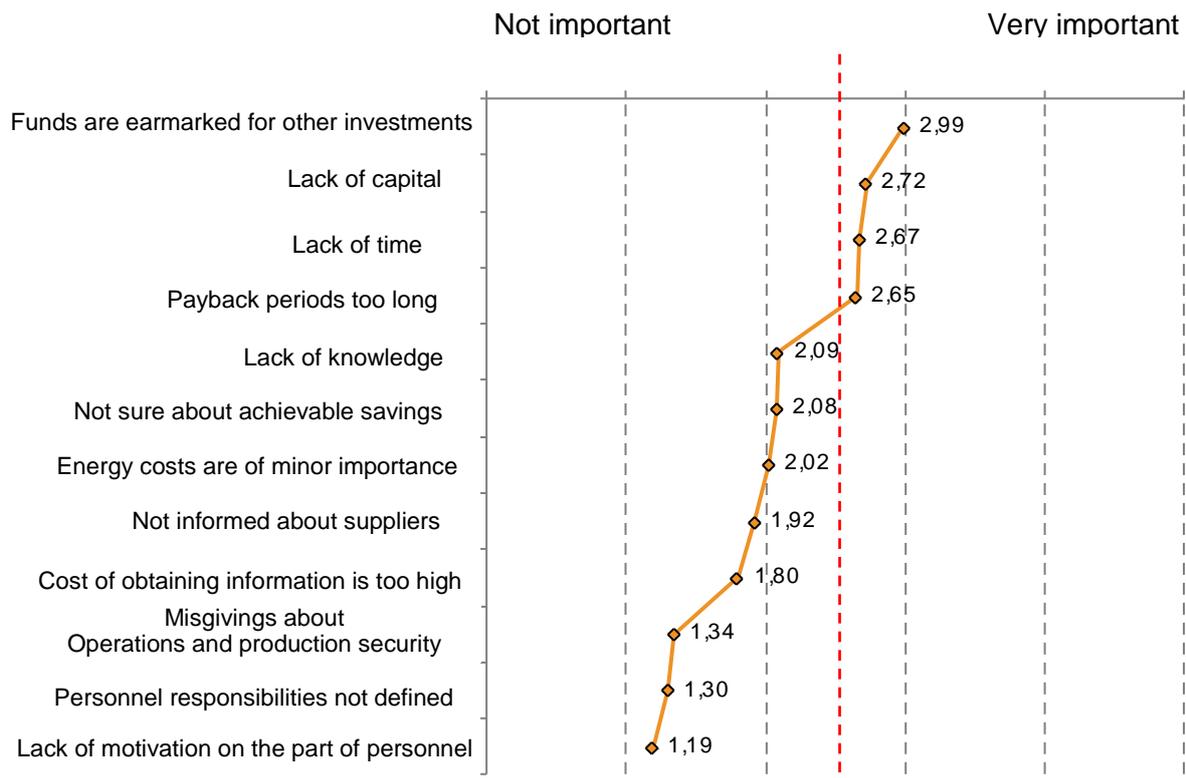


Source: Prognos AG 2009

Barriers to investment

Figure 8 below shows clearly a number of barriers that prevent enterprises from investing in energy efficiency. Most important of these is the lack of funds or financing facilities available, since energy efficiency measures are often in competition with other financially viable investments for a limited amount of available capital. Working in combination with the relatively long pay back periods of the energy efficiency measures, such barriers often prevent timely investment. In addition, survey respondents noted a lack of technical capacity and trained personnel with the specialised knowledge needed to identify and implement energy efficiency measures in their companies as a crucial weakness. In this context, the establishment of energy service companies to support decision making – as broadly discussed by legislators today – could be a solution. The survey shows that energy advice and energy management are among the most frequently used energy services by the SME sector.

Figure 8: Barriers to energy efficiency investment in SMEs in Germany



Source: Prognos AG 2009

To sum the result up: SMEs have widely embraced the value of energy efficiency and regard it as important to cost reduction and good business practice. However, a range of market barriers and structural obstacles to investment in energy efficiency remain today, despite a history of German public financial transfers and promotional programmes targeting energy efficiency investments in this sector. Barriers include the limited availability of capital and of personnel with specific energy efficiency know how within these small and medium-sized companies. This means, promotional measures directed at addressing and eventually eliminating these market barriers continue to be necessary to unlock the energy savings potential of SMEs.

KfW's promotional schemes for climate protection in the SME business sector

Definition of SMEs

KfW's financing schemes for enterprises are mainly focussed on SMEs. Therefore, it is necessary to have a clear definition what counts as SME. KfW's eligibility criteria for enterprises follow very closely the EU definition for SMEs. These are enterprises with less than 250 employees and a turnover of less than EUR 50 million or total assets of less than EUR 43 million.

Special fund for energy efficiency

The special fund for energy efficiency is together, with the renewable energy programme, one of the flagship activities of KfW's environmental promotion in the corporate sector. The fund is a joint initiative of the German Ministry of Economy and KfW. It consists of two separate programmes that are tied together virtually in the fund. One for "advice" and one for "financing". The former is a grant that pays for energy efficiency advice and the latter is a loan with subsidised interest rates. SMEs can separately apply for both or either, but when they are offered only in combination with each other do they form a consistent and complete promotional package. Therefore, KfW recommends that SMEs make use of the advice component before taking

a final investment decision. To demonstrate clearly the strong coherence of advice and financing in the corporate sector the fund was established.

Energy efficiency advice

Within the advice component, the SME can apply for two different stages of advice: initial advice or detailed advice. The idea of the initial advice is to raise awareness of the energy savings potential that exists in the firm by having an expert examine the weak points of a firm's energy system or service provision. The grant covers up to 80% of the daily fee of the expert, not more than EUR 640 per day, for a maximum of two days or EUR 1,280 total per firm. The detailed advice goes another step further, where the idea is to undertake an in-depth analysis by an independent expert that enables the enterprise to prepare a concrete set of measures. The grant covers up to 60% of the daily fee of the expert, not more than EUR 480 per day, at maximum 10 days or EUR 4,800. A precondition to receive the grant for detailed advice is a written report of the expert in case of the initial advice. In case of the detailed advice, an additional presentation of results and recommended measures by the expert to the senior management is required. The enterprise can receive a grant once for both stages. KfW receives the funds for the grant from the budget of the German Ministry of Economy.

The expert hired within the advisory programme must be accredited in KfW's expert platform and he or she has to fulfil certain requirements. First of all, the expert advisory business must be an energy efficiency consulting company and it has to be financially independent of the actual or of potential investors for the business in question. In addition, the advisor needs to have an university degree in engineering or natural science and he or she has to prove an additional qualification in energy consulting, including three years of on the job experience. Finally, KfW requires that the firm have completed three different relevant reference projects prior to accreditation of any expert advisory business by KfW. The projects must be finished, but completion may not date back longer than 5 years. While the skills required of the advisors are the same as the ones in the residential programme, their role differs. The focus of the advisory programme is on providing advice whereas in the residential programme the focus is on the approval of standards.

European Recovery Plan's Energy Efficiency Programme

The financing component of the ERP programme has two elements:

1. Investments in energy efficient equipment, machinery, facility and energy technology. For replacement investments, the energy conservation achieved has to be at least 20% compared to the SMEs average energy consumption over the last three years. For new investments, the energy conservation has to be at least 15% compared to industry average. KfW is financing up to 100% of the eligible investment costs with a maximum of EUR 10 m.
2. Investments in the energy efficient renovation or construction of production and office buildings. For an existing building, the energy efficiency standard has to meet at least the primary energy demand of a new building defined by the German energy conservation ordinance (EnEV). For a new constructed building, the primary energy demand has to be at least 20% below the demand defined by EnEV for a new building. KfW is financing up to 100% of eligible investment costs with a maximum of EUR 10 m.

For both types of investments KfW offers maturities of 5, 10 or 20 years.

2.4. KfW's renewable energy programme

Compared to the aforementioned programmes, the renewable energy programme is designed to stimulate investments in renewables, i.e. sun, wind, hydropower and biomass, with favourable interest rates. The scheme has two elements the "Renewable Energies Programme – Standard" and the "Renewable Energies Programme – Premium". The former focuses on the production of power with renewable energies (solar power, biomass, wind energy). The premium programme focuses on the production of heat from renewables (biomass heating, solar

collector systems for thermal use, geothermics etc.). Within the Premium Programme KfW offers the investor an additional repayment bonus after the investment is completed and the investor has proven, with a statement of expenditure, that the investment fulfilled the promotional criteria required by KfW.

Within both programmes, up to 100% of the eligible investment costs are financed with a maximum loan amount of EUR 10 m for each project. KfW offers potential investors loans to favourable conditions with maturities of 5, 10 or 20 years. A broad range of investors can apply for the programmes, including private individuals as well SMEs. Since the premium programme focuses on small enterprises, these enterprises, as far as they meet the EU definition, will receive a reduced interest rate, compared to other eligible investors. Interest subsidies and repayment bonuses are as well offered within the Premium Programme and financed from the budget of the German Ministry of Environment.

Financing volumes and macroeconomic aspects

The promotional activities of KfW Bankengruppe for renewable energy represent an important component of the German climate strategy. In 2009 and 2010 KfW committed within the environmental programmes of the corporate sector almost 117,000 loans with a volume of nearly EUR 18 bn. Similar to the residential schemes, KfW mandated a research institute to evaluate the macroeconomic effects of the financing programmes for renewable energies. Since 2007, an independent expert (ZSW-Zentrum für Sonnenenergie und Wasserstoff-Forschung Baden-Württemberg: "Evaluierung der KfW-Förderung für Erneuerbare Energien im Inland in 2009"), has investigated the reductions in greenhouse gas emissions and fossil fuel consumption generated by financing programmes of KfW Bankengruppe in the renewable energy area. The influence fossil fuel imports and impacts on employment are also investigated. The most recent study is based on the commitments of 2009 and had the following results:

KfW financed more than 34 % of the investments in renewable energies in Germany, which provided in 2009 an investment volume of EUR 7.0 bn. KfW's schemes are especially important for the renewable electricity production. In total, 43 % of newly built renewable power plants in 2009 were financed through KfW. Thereof the share of wind turbines within the current infrastructure stock in this sector was 54 %. The commitments of the year 2009 reduced energy imports by approximately EUR 310 m p.a. This is estimated to amount to EUR 6.2 bn in saved⁶ expenditures on imported oil over the facilities lifetime of 20 years. KfW's promotional activity in this area also led in 2009 to a reduction of approximately 3.5 m tonnes of CO₂ per year. The cumulative promotional activities across KfW's programmes 2007-2009 have led to a reduction of approximately 10.6 million tonnes CO₂ p.a. Moreover, KfW's financing programmes together with favourable feed in tariffs for renewable energy continue to clearly enhance the role of renewable energy as a significant creator of employment. It is estimated that 41,000 jobs were safeguarded for one year or generated in 2009 by the renewable energy promotional schemes. Small and medium-sized enterprises with less than 500 employees account for about 71.7 % of the generated jobs.

3. Conclusions: Lessons Learned and further challenges

The national target of 40 % GHG reduction versus 1990 requires a reduction of about 250 million t/a GHGs compared to emissions volume in 2007. According to preliminary data, in 2011 Germany was 26.5 % below 1990 (German Kyoto target: 21 %). This was achieved through a broad mix of measures and instruments, targeting mainly the energy, building and transport sectors. This paper shows how private investment in climate protection technologies can be publicly triggered and supported, here in particular in the building sector.

⁶ Calculation based on an oil price of EUR 71.989 per GWh, calculated as annuity, and the assumption of an average increase of 4,3% p.a.

3.1 Conclusions on promoting energy efficiency investment in the housing sector

The German EECR programme has successfully helped to implement energy efficiency practices in the German construction and housing sector. The programme even stimulates investors to go beyond the legally defined energy efficiency standards, and it advances research and development of new energy efficient technologies in the housing and construction sector by providing market incentives for these technologies.

From KfW's point of view six crucial success factors can be identified as lessons learned:

1. The programme is not restricted to a special group of investors. This helped to generate significant broad scale effects of the programme.
2. The programme has a strong focus on loans, grants or bonuses offer additional incentives. It provides capital and promotional financial incentives for the investors to alter the energy efficiency performance of their investments in buildings.
3. KfW established the "KfW-Efficiency House" as a guide for the programme and as a performance-based technical standard that is closely linked to the national regulatory framework to achieve energy efficiency in buildings. In doing so it has created its own brand for energy efficiency. The KfW programme brand contributes significantly to help make energy efficiency performance of buildings understandable and comparable within the German housing sector and thus helps to communicate environmental performance both to consumers and the financial community. The KfW efficiency house standard is mentioned in advertisements referring to the sale of houses however, there is no formal study that examined whether housing real estate values are affected by the energy performance of homes. Higher energy efficiency is rewarded by better financial conditions. This stimulates investors to optimize their rehabilitation and construction plans and investments in terms of energy efficiency.
4. It needs to be ensured that rehabilitations fully contribute to the long-term goal of a climate neutral building stock in 2050 in Germany. Thus the programmes will be developed further.
5. The KfW on-lending-system provides a broad distributional network. This fosters also the broad scale effects of the programme. It also ensures a cost efficient handling of the low interest loans programme, working through well established intermediaries. Efficiency standards which are completely financially viable or mandatory by EnEV are not promoted in KfW's programmes. Since the main heating fuel in Germany is still oil or gas, oil price signals are much more important in this programme than prices signals from emissions trading that reflect the price of carbon.

3.2 Conclusions on promoting SMEs

The government supported programmes under the new Energy Concept have become an important part of KfW's loan commitments and now account for almost 40% of the commitments to corporations and business in 2010. The KfW renewable energy programme is with a share of 1/3 of the total investments one of the most important instruments to stimulate the expansion of renewables in the German energy mix and to lead the way for Germany to become a low carbon economy.

With a loan portfolio or commitment volume of EUR 25 bn in energy efficiency and renewables in 2010, KfW is continuing its past efforts to promote clean energy domestically. It has been actively supporting clean energy for almost 20 years and has gathered broad experience and know-how with relevant technologies and business contexts. Currently KfW uses a variety of ways to share know how and best practices also with partners internationally.

3.3 Challenges

Challenges for German policy include:

- The response to EU building energy-efficiency directive for 2020
- Retrofitting the rest of the building stock and reaching building owners without public subsidies to ensure that the necessary scale can be achieved.
- Discussion of applying sunset clauses to subsidies

Two further challenges mentioned in this paper are the Landlord-Tenant-Dilemma and comparative, location specific rental prices. Public instruments to try to overcome these challenges include:

- providing a secure long term planning horizon for investors by setting long term targets for climate and energy policy.
- legal instruments, such as subsequent rise in energy use standards for buildings, obligation to use renewable energy for heating etc.
- financial support programme: subventions for building rehabilitation, amount of subvention dependent on the targeted energy standards
- consumer awareness and information, for example through campaigns such as „climate seeks protection“, or CO2online with a checklist on saving energy and heating cost.

A further challenge poses the alignment across different levels of government. Due to the German federal government system the Länder are not obliged to set climate protection targets. The national targets serve merely as guidance to the Länder with the effect that there is large regional variation: some Länder set ambitious targets while others have none. A recent study conducted by the Federal Environment Agency in 2011 (Biedermann 2011)⁷ showed that presently the sum of all regional GHG reduction targets set by the Länder for 2020 is not sufficient to fulfil the national target. The calculations showed that the sum of all reduction targets of the Länder would lead to a reduction of 27 % which is well below the national target of 40 % set by the federal government. This does not necessarily mean that the national target cannot be reached since the local government are not the only relevant actors. However, different methods of emission accounting lead to different emission reduction strategies and problems in comparison between regions. Presently, the climate protection targets in the regions are not comparable since they are based on different ways of emission accounting. They are not based on uniform standards of goal setting. Combining the present top down accounting system with bottom up accounting remains a future challenge. However, the Länder may not necessarily motivated to apply a method that allows inter-regional comparison. The Länder are only obliged to implement federal laws, for example to ensure that the EnEV is adhered to, however they do not need to implement the federal support programmes. KfW programmes try to set incentives in this regard by allowing the combination of KfW funds with public funds of the Länder and communities.

An even greater challenge poses the fact that the Federal Government and the Länder have different legislative and regulative powers. Länder with an ambitious climate policy can strengthen the impact of the Federal instruments through additional funding programmes or legislation. For example in Baden-Wuerttemberg a EEWärmeG, which – in contrast to the federal law – finds application also in rehabilitated buildings. Vice versa, if Brandenburg builds on coal as domestic energy source within its energy policy will this impact on the accumulated federal GHG balance. However, the federal government is not allowed to directly influence the regional economic and energy policy of the Länder.

⁷ <http://www.umweltdaten.de/publikationen/fpdf-l/4146.pdf>

Annex: Checklist for LCCR investment policy framework (following OECD)

Policy checklist	Impact on attractiveness for private sector LCCR investment		
	Boost opportunities	Revenues/cost	Reduce risk
<p>1. Strategic goal setting and policy alignment 40 % GHG reduction by 2020 compared to 1990 for Germany; Measures adopted in 2008 under the Integrated Energy and Climate Package extended under the new Energy Concept up to 2050; includes targets for the reduction of GHG, the increase in renewable energies and for general building renovation; translates the reduction potentials into a mixed set of measures, based on binding regulations, funding support schemes, tax incentives, feed in tariffs and information. Provides overall long term strategy as reliable framework for society and economy. Stakeholder engagement through monitoring performance.</p> <p>The Adaptation Strategy was developed in close cooperation with the Federal Länder (regional authorities in Germany) through a working group comprised of representatives from most federal ministries, and in this way building upon a multilevel governance approach</p>	X	X	X
<p>2. Enabling policies for competitive open market and greening investments Investment regulatory framework About 20 legal amendments. For example to the Energy Savings Ordinance (EnEV) for buildings and the Combined Heat and Power Act. Guidelines on environmentally friendly and energy-efficient procurement, aiming to promote energy-efficient appliances and services through priority government procurement procedures. Legal revision concerning renewable energies in the electricity and heat sectors: Amendment to the Renewable Energy Sources Act (EEG) The Renewable Energies Heat Act (EEWärmeG) lays down obligations to use renewable energies in new buildings or to decrease primary energy consumption through energy efficiency.</p> <p>The Energy Performance of Buildings directive (EPBD, directive 2010/31/EU) requires the member states of the European Union to set requirements on the overall energy performance for new buildings and major renovations of buildings including space and water heating, ventilation, cooling, lighting etc. rated in primary energy. From 2020 on, new built buildings have to be “nearly zero energy buildings”. Building energy performance certificates are to be provided to buyers and new tenants, and the energy performance rating is to be given in advertisements.⁸</p> <p>Taxation It is planned that energy taxation in the heat market will be more strongly connected to CO2 emissions. Additional tax incentives are under consideration (tax deductibility of building renovation), especially in case of owners achieving targets ahead of time or exceeding them.</p> <p>Other environmental policies The Ecodesign directive (2009/125/EC) and the energy labelling directive (2010/30/EU) set out common minimum environmental criteria for the placing on the market of energy related products</p>	X	X	X

⁸ for further information see http://ec.europa.eu/energy/efficiency/buildings/buildings_en.htm

and consumer information on the energy efficiency of products. EU regulations on circulators (2009/641/EC), fans (2011/327/EU) and air conditioners (2011/626/EU and 2012/206/EU) already exist. Further regulations on boilers, water heaters, domestic ventilation units and air conditioning and ventilation systems are being prepared. For example, the ecodesign regulation will lead to a ban of non-condensing central heating boilers from the European market. ⁹			
3. Financial policies, tools and instruments to attract private investment Investment promotion and public financing to leverage private investment in LCR infrastructure Government funding for existing buildings increased - from 130 million euro in 2005 to up to 350 million in 2008 and up to 500 million euro from 2009 to 2012 as required by EEWärmeG. The German government provides public funding to support building renovation. There is the CO2 building rehabilitation programme to support efficiency measures such as insulation, double-glazed windows, replacement of inefficient heating technology, use of renewable etc. Government is further increasing the market incentive programme for the use of renewable energies for heat generation in buildings. It is also launching a new support scheme "performance-enhancing urban rehabilitation" to create synergy effects in the area of urban development. The Energy Efficient Construction and Rehabilitation (EECR) programme implemented by KfW. The EnEV defines the energy efficiency requirements for new and existing buildings and is setting the benchmark for KfW's investment promotion criteria.	x	x	x
4. Harnessing resources and building capacity for a LCR economy <ul style="list-style-type: none"> • German climate initiative school competitions • BMU/UBA educative material for schools • National process of monitoring the German energy Concept annual assessment report as of 2012 as well as of 2014 tri-annual comprehensive assessment reports will be published to inform stakeholders. • KfW buildings programme • National competence centre on climate change impacts and adaptation (KomPass)¹⁰ • To ensure stakeholder engagement, working groups and stakeholder dialogues have been established at the federal level. With regard to monitoring, from December 2012 onwards an annual status report of the Energy Concept will be published to inform stakeholders as well as, from 2014, tri-annual comprehensive assessment reports. 	x		
5. Promoting green business and consumer behaviour <ul style="list-style-type: none"> • German Climate Initiative, financed by BMU • Environment Innovation Programme financed by BMU and implemented by KfW: supports the development of innovative technologies just before market entry. The BMU information campaign „climate seeks protection“ with internet forum has the objective to motivate consumers to protect the climate and to show alternative behavioural options 	x		

⁹ for further information see http://ec.europa.eu/energy/efficiency/ecodesign/eco_design_en.htm, http://ec.europa.eu/energy/efficiency/labelling/labelling_en.htm and <http://ec.europa.eu/enterprise/policies/sustainable-business/ecodesign/>

¹⁰ http://www.anpassung.net/cln_115/DE/Home/homepage__node.html?__nnn=true